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Proceedings of

DRISHTI – 2024

A New Era in Management, Engineering, Science & Technology

International Conference

11th September 2024

Organised by

VIVEKANANDA COLLEGE OF ENGINEERING & TECHNOLOGY

[A Unit of Vivekananda Vidyavardhaka Sangha Puttur ®]

[Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi & Recognized by Govt. of Karnataka]

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PREFACE

Welcome to Drishti 2024, an International Conference organized by Vivekananda College of Engineering & Technology (VCET), Puttur. Since its establishment in 2001 by the Vivekananda Vidyavardhaka Sangha, Puttur, D.K., Karnataka, VCET has been dedicated to fostering academic excellence and innovation. As we gather on 11th September 2024, we are excited to explore and discuss the latest advancements and challenges across Management, Engineering, Science, and Technology.

This year's conference will feature a series of dynamic tracks, each delving into critical areas of contemporary relevance. The first track will focus on contemporary management practices, offering insights into the latest strategies and methodologies that are transforming organizational operations. This exploration will cover innovative approaches to leadership and management, aiming to equip attendees with valuable knowledge on navigating and excelling in today's complex business environment.

Another significant area of discussion will be the advanced technologies in computing and communication. This track will spotlight cutting-edge developments that are reshaping the technological landscape. Participants will gain a deep understanding of emerging trends such as artificial intelligence, machine learning, and advancements in communication networks, along with their profound impact on various sectors and society at large.

Equally important is the track dedicated to sustainable practices in engineering and science. This segment will address the urgent need for integrating sustainability into engineering solutions and scientific research. The focus will be on innovative approaches and strategies that promote environmental stewardship and sustainability, ensuring that advancements in these fields contribute positively to our ecological balance and long-term well-being.

Drishti 2024 aims to create a vibrant forum for interdisciplinary dialogue, collaboration, and the exchange of ideas. We are honoured to host a distinguished group of speakers, researchers, and practitioners who will share their expertise and insights, contributing to a rich and stimulating conference experience.

We extend our heartfelt gratitude to all who have contributed to making this event possible. Your participation and engagement are crucial to the success of Drishti 2024. We look forward to a conference that will inspire and drive progress in these critical areas of knowledge.

Dr. Robin Manohar Shinde, Dr. Jeevitha B.K., Dr. Sowmya N.J.
Conveners, Drishti-2024

Message

Sri K. Vishwas Shenoy
President, Vivekananda College of Engineering & Technology

Dear Conference Participants and Readers

It is with great pleasure that we introduce the International Conference *"DRISHTI – 2024: A New Era in Management, Engineering, Science, and Technology."* The theme of the conference, "DRISHTI," symbolizing vision, reflects our collective commitment to exploring the future of these dynamic fields in a rapidly evolving world. As we navigate the complexities and opportunities of the modern era, it is vital that we embrace a forward-looking approach, leveraging the power of innovation and technology to shape a brighter future.

This conference serves as a platform for participants to showcase their intellectual rigor, creativity, and passion for research across management, engineering, science, and technology. I extend my sincere appreciation to all the authors, volunteers, sponsors, and everyone who has contributed to making this conference a remarkable success.

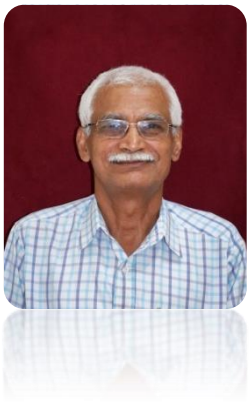
Thank you for your participation and support.

Warm Regards,

Sri K. Vishwas Shenoy
President, Vivekananda College of Engineering & Technology

Message

Sri T.S. Subrahmanya Bhat
Correspondent
Vivekananda College of Engineering & Technology, Puttur



Esteemed Scholars and Readers

The world is evolving rapidly, and with it, the ways we manage and harness technology, engineering, science, and management are also transforming. The DRISHTI conference brings together thought leaders from around the globe, all committed to exploring innovative solutions that apply management, engineering, science, and technology to address the challenges of the 21st century.

We find ourselves in a time of unparalleled opportunity. The intersection of technology, data, and artificial intelligence is unlocking new possibilities for businesses, governments, and individuals. Yet, these opportunities come with their own set of challenges. It is imperative that we develop new strategies to manage risks and make informed decisions in every sphere.

The DRISHTI conference serves as a platform for exchanging ideas and best practices. Here, we will explore the latest advancements in management, engineering, science, and technology, and discuss how these can be utilized to build a better future for all. Together, we have the power to shape a new era – one that is more sustainable, equitable, and prosperous for everyone.

I wish you all a productive and inspiring conference.

Warm Regards,

Sri T.S. Subrahmanya Bhat
Correspondent
Vivekananda College of Engineering & Technology, Puttur

Message

Dr. Mahesh Prasanna K.
Principal
Vivekananda College of Engineering & Technology, Puttur

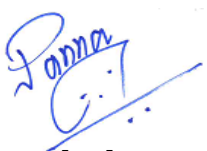
Dear Authors and Readers

In an era where the pace of change is unparalleled, our focus on bridging theoretical knowledge with practical application is more crucial than ever. Drishti-2024, an International Conference which is dedicated to exploring the frontiers of Science, Engineering, and Management serves as a platform for fostering collaboration, sharing insights, and generating solutions that address the pressing challenges of our time.

I congratulate the participants and tireless organizers who have contributed to making this event a success and reality. Your collective efforts ensure that Drishti-2024 not only meets its goals but also sets a new benchmark for future initiatives.

I wish the knowledge and ideas exchanged here lead to pioneering strategies and breakthroughs that will shape the future of Science, Engineering, and Management. Let us work together to build a future that is dynamic, sustainable, and filled with opportunities for growth and success.

Warm Regards,



Dr. Mahesh Prasanna K
Principal
Vivekananda College of Engineering & Technology, Puttur

Message

Mr. Melwyn Sequeira
Co-Founder
Venir International Consultancy, Mangalore

"International Conference DRISHTI is a wonderful opportunity to find new ideas and explore cutting-edge methods that can promote growth and change in management and technology. The varied range of attendees and presentations assures a lively exchange of knowledge, while also providing essential networking chances for experts from many sectors."

Message

Ms. Mayumi Cox
Chief Executive Officer
Team Next LLC, Japan

"DRISHTI-2024 is a remarkable international conference that promotes collaboration among academia, industry, and technology." This event brings together professionals and innovators from around the world to provide new insights on the challenges and possibilities that shape the future. It is an excellent opportunity to broaden horizons, form networks, and inspire answers to complicated global challenges"

Message

Mr. Shijomon Yesudhas
Manager of Business Development (South Asia)
Deakin University, Australia

"DRISHTI brings together industry leaders, educators, and innovators to discuss new ideas in management, engineering, and technology. The conference fosters collaboration and knowledge sharing, laying the foundation for significant partnerships and new solutions that will define the future of global business and education."

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TRACK 1

CONTEMPORARY MANAGEMENT PRACTICES

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Impact of Stock Dividend announcement on Share Prices: A study with reference to BSE listed Companies

[1]Dr. Kushalappa S, [2]Anusha B M
[1]Assistant Professor, [2] II BBA
[1 2]Department of Management
[1 2] Govt. First Grade College, Belthangady
[1]kushalkayarthadka@gmail.com, [2]anushabmanushabm458@gmail.com

ABSTRACT

Bonus shares or the stock dividend is the additional shares issued by the companies to the existing shareholders for free of cost. When the company faces cash crunch problems, normally declare dividend in the form of bones shares. It will serve as an alternative for the cash dividend. Amount of bonus issue is normally transferred from the retained earnings to the share capital and share premium account. In the present study, the researchers have made an attempt to test the impact of stock dividend announcement on the share prices. It is an event study and the event window is 61 day. Companies listed with BSE announced bonus shares during the year 203-24 have been considered as the sample for the study. It is concluded in the study that the stock dividend announcement has no significant impact on the share price movements.

***Keywords**: Announcement, Cash Dividend, Bonus Shares, Stock Dividend.*

Does sustainability reporting quality influence the performance of environmentally sensitive Indian firms?

[1]Deepa C Bhat, [2]Dr Sandeep S Shenoy, [3]Dr Dasharathraj K Shetty, [4]Abhilash
[1]Junior Research Fellow, [2]Professor, [3]Associate Professor, [4]Senior Research Fellow
[1 2 3 4] Department of Commerce,
[1 2 3 4]Manipal Academy of Higher Education, Manipal. Karnataka, India

ABSTRACT

The growing awareness about sustainable development on the part of various stakeholders led to the quick adoption of sustainable business practices. In addition, communication of these sustainable doings to the stakeholders in the form of Sustainability Reporting (SR) becomes equally important to ensure transparency and accountability. With this view, the Securities and Exchange Board of India (SEBI) has introduced various regulatory reforms in the form of "Business Responsibility Reporting (BRR)," currently known as "Business Responsibility and Sustainability Reporting (BRSR)," over the last decade. At present, it is mandatory for the top 1000 listed entities in India to publish these reports. Considering this, the present study aims to examine the impact of SR quality on Firm Performance (FP) in India. The influence of SR quality as measured by scoring criteria on various measures of FP, namely operating performance (Return on Assets), financial performance (Return on Equity), and market performance (Tobins Q), was studied. The data relating to companies belonging to Environmentally Sensitive Industries (ESI) out of the top 100 listed entities on the National Stock Exchange (NSE) was used. ESI was chosen due to the impact they have on sustainable development. The data was retrieved from the Centre for Monitoring Indian Economy (CMIE) ProwessIQ Database and annual reports of companies for the period of six years from 2016 to 2022. To analyze the impact of the quality of SR on FP, the Fixed Effects Regression Model was employed. The results showed that the better quality of SR would result in better market performance implying that the market positively perceives SR and its quality. However, in the short run, SR quality has no significant (but positive) impact on the Return on Assets and Return on Equity indicating the learning curve effect in the Indian context. Thus, the findings suggest the need for regulatory bodies to bring awareness about the prominence of sustainable business practices among diverse stakeholders in addition to mandatory reforms.

***Keywords**: Sustainability reporting, firm performance, environmentally sensitive industries, corporate social responsibility, corporate sustainability, sustainable business practices.*

A Review of Business Management Practices

Nivedita Nayak
YIASCM
Kulur, Mangaluru
nayaknivedita79@gmail.com

ABSTRACT

Management Practices set the Bench Mark to organisations to enhance Quality in overall aspects of the Business either domestically or globally. Adoption of General principles in Management, Standard HR Policies in Organisations can be traced for centuries and recently too. In order to combat Competition from Business Units, for Decision Making Process Best Management Practices are the Hallmark which create Standards towards better Governance for Products and services or towards Human resources. In this era of Globalisation, Maintaining Quality by analysing delivery of Products or services in Business or towards People are Core of what a company does to create value for its customers and generate revenue which can be physical or digital. Lot of Challenges are faced by Business Units to develop and maintain best Practices to adapt continuous Growth with changing Innovation and technology through AI or other Latest Tools. The prominent could be:

- *Lack of Proper physical facilities in Traditional type of Business Units*
- *No clarity For Managers in Differentiation and collection of data for Better Decision-making Process*
- *Lack of proper adoption of Latest Tools and Technical Know- How in some Organisations*
- *Lack of Cost Efficiency and reliability*
- *Financial issues, other Hindrances.*

The need for study was to address the need for Understanding the Current Management Practices on the Contemporary Business World. The Entire Review of my Abstract is on the Study which surrounds on the Central Theme of Business and Service oriented Organisations adopting best Management practices. It could be assessed that the survey was done on the Young Workforce particularly on Working Professionals, students, general Public. The study was primarily to analyse the best practices adopted by Organisations in service Sector and its Implications in Business towards Innovation, Advancement and Market Positioning and Generating revenues. The review of Literature was done considering the Textbooks, Online

mode.

The Findings of the study reveals that there is positive relationship between Service sector units and Consumers as well as stakeholders like Employees or general Public through adoption of Contemporary management Practices. It also displays Goodwill, Innovation and Consistency of business Units in building long term relationship with its stakeholders.

Better Quality Standards, Efficiency, Economy and Effectiveness in Delivery, Management of Time and cost provides satisfactory Management Practices towards organisations. But in some other organisations Improper Use of Tools, Traditional practices, Poor Quality Norms, Lack of Funds and many other factors pose threats towards some Units.

Keywords: *Business Strategy, Organizational Leadership, Operational Efficiency, Decision-Making*

Emerging Trends in Entrepreneurial Finance: Exploring Crowd funding

[1] Nikshitha, [2] Ashalatha
[12]Research Scholar
[12] JKSHIM NITTE, Nitte University
[1]nikshitha.poojary@nitte.edu.in

ABSTRACT

Entrepreneurs who take the initiative to introduce new ideas and innovative things to succeed in the market by undertaking all the risks and rewards for future growth, to finance their new initiatives there are varieties of avenues available including bootstrapping, debt funds, equity, angel investment, venture capital, and bank loans and these are all traditional avenues for capital funding. Hence, entrepreneurs' enterprises require a diverse range of pathways for their expansion and rapid progression, through crowdfunding entrepreneurs can effectively secure funds for their projects and attract investors globally (Bellavitis, C., et al. 2016). Nonetheless, altered investor behaviour, objectives, and risk profiles impact crowdfunding strategies. In contrast, market dynamics, execution challenges, agency risks, and regulatory hurdles play crucial roles in determining the success of equity crowdfunding. (Bonini, S. et al.2019) (Martino, P., et al. 2022). This research endeavor seeks to explore crowdfunding, the advantages of utilizing crowdfunding for emerging businesses, and the obstacles related to governance, examining its impact, challenges, and potential for future growth. By analyzing recent data aim to provide insights into how crowdfunding is shaping the financial landscape for Indian entrepreneurs.

Keywords: *Entrepreneur, Entrepreneurial Finance, Traditional Avenues, Crowdfunding***.**

Generative AI: A Game-Changer in Marketing

[1]Dr. Veena Santhosh Rai , [2]Prajwal Ballullaya
[1]Associate Professor , [2] MBA Student
[1 2]Department of MBA
[1 2]Srinivas Institute of Technology, Mangaluru
[1]veenasanthoshrai@sitmng.ac.in,[2] prajwalballullaya@gmail.com

ABSTRACT

Generative AI is revolutionizing the marketing sector at an unprecedented speed. This presentation explores how this pioneering technology is reshaping marketing strategies through its diverse applications, benefits, and challenges. Generative AI is transforming content creation, allowing for more personalized customer experiences and enhancing overall marketing efficiency of the business. This paper will delve into how AI-driven tools can boost creativity, optimize decision-making, and streamline processes, offering significant advantages to marketers. Additionally, the paper will address the ethical considerations and potential pitfalls associated with the use of generative AI, stressing the need for responsible implementation. AI can be leveraged to drive business growth and secure a competitive edge. It provides gain valuable insights into the opportunities and challenges posed by this technology, equipping them with the knowledge needed to effectively navigate the evolving marketing landscape and harness the full potential of generative AI as a strategic asset.

Keywords*: Generative AI, Marketing Strategies, Content Creation, Personalization, Business Growth.*

Exploring How Digital Literacy Unlocks Pathways to Employment

[1]Santhosh Kumar Shrinivas, [2]Pavithra Shetty
[1 2]Lecturer Department of Business and Management
[1 2]Gulf college, Oman
[1]santhosh.kumar@gulfcollege.edu.com,[2] shetty@gulfcollege.edu.com

ABSTRACT

In this rapidly changing modern world, the job market is evolving constantly at the speed of light. The skills learnt today may be considered absolute tomorrow. Introduction of new technology at various levels of industry and AI driven market has made it a compulsion that an individual who is looking for a job must have these skills which are commonly known as digital literacy. Digital literacy comprises of proficiency in number of skills, including computer skills, Internet navigation, Information literacy, and more advanced techniques like Data analysis and Coding. These skills have become essential not only for the traditional job roles but also the opportunities that are going to emerge in the job market due to technological advancement. The employment landscape is being reshaped due to the integration of digital literacy into education systems. Individuals with robust digital skills are more adaptable and are capable in understanding and solving the matters relating to digital economy. These adaptabilities have enabled the individuals to create value in various sectors and improved their employability in this competitive job market. This demand for digitally literate labour force has made the individuals to acquire, enhance and update their digital skills, creating a dynamic cycle of skill development and employment opportunities. The basic objective of this research was to explore how proficiency in digital skills can unlock diverse pathways to employment with the help of existing literature and the primary data collected from undergraduates and postgraduates who were seeking jobs. To conduct a comparative analysis, data was also collected from employers from different sectors to know what digital skills are expected in the job market. The findings stated that there is a high influence of digital literacy on employability of individuals and indicate a strong positive relationship between these two variables.

***Keywords**: Digital literacy, Employability, job seekers, employers, job market.*

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Impact of Influencer Marketing on Purchasing Decisions and Brand Perceptions among University Level Students with reference to Dakshina Kannada

[1] Hithesh Kumar, [2] Pinakini P Shetty
[1]Assistant Professor, [2]Lecturer
[1 2]Yenepoya University, Mangalore
[1]hithesh.csfoundation@gmail.com, [2]pshettypinakini@gmail.com

ABSTRACT

Nowadays, advertising has a big influence on what people buy. Influencer marketing has become a potent instrument in the current digital scene, complementing more established techniques like working with creators. Influencer marketing is the practice of using well-known social media users to promote companies to increase consumer engagement and trust. This study's main objective is to evaluate how influencer marketing affects students' consideration. The efficacy of influencer marketing of students was investigated in Mangalore City using primary data obtained from 60 respondents as well as from secondary data. The findings suggest that influencers play a crucial role in shaping students' brand perceptions and influencing their purchasing choices

***Keywords**: Buying Decisions, Buying behaviour, Perception*

The Effectiveness of Green Marketing Strategies and Zero-Waste Policies in Organisations

[1]Shamitha B Devadiga, [2]Karthik Kamath K
[1 2]1st year MBA
[12]Mangalore Institute of Technology and Engineering, Moodabidri.
[1 2]Dakshina Kannada, Karnataka, India
[1]shamithabdevadiga@gmail.com, [2]kamathkkarthik@gmail.com

ABSTRACT

Green marketing, which gained popularity in the late 1980s and early 1990s, is a strategic endeavour aimed at building a firm around environmental and health concerns. The effectiveness of green marketing strategies and zero-waste policies in organizations, focusing on their impact on sustainability and corporate performance. As environmental concerns become increasingly prominent, businesses are adopting green marketing to appeal to eco-conscious consumers and implementing zero-waste policies to minimize environmental impact. Green marketing encompasses a wide range of concepts, such as ecological, sustainable, environmental, green and societal marketing. These strategies encompass sustainable product development, eco-labelling, environmentally friendly packaging and eco-centric promotional activities. The current research contributes to the development of a deeper understanding of management by demonstrating that green technology that play considerable roles in the achievement of zero waste management. The conclusion that was drawn is that, green innovation and the green promotion have a positive effect on the firm's performance.

Keywords: *Green marketing, Sustainability performance, Waste management, Environment marketing, Green technology.*

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Beyond Profits: The Role of CSR in Shaping Management Practices

[1]Prakash B, [2] Nishmitha Shetty
[12] Department of Commerce and Management .
[1] Dr NSAM First Grade College, NET Campus Nitte, Karkala, 574110, India

ABSTRACT

Corporate Social Responsibility is an important source of the new shape of management today against the pressures from mounting social and environmental issues. It is not just making profits; businesses are increasingly adopting CSR in their strategic frameworks, for which decisions and operational priorities are set. Correspondingly, this reflects increased recognition that, from a long-term perspective of welfare, business activities should be harmonized with societal values and stakeholders' expectations. By adopting the principles, businesses don't simply enhance their reputation and reduce risks; they may drive innovation and build sustainable growth. The uncertain impact that CSR—a 'practice' by many businesses—has on concrete environmental and social scenarios necessitates a transformation in our concept of CSR: from the never-ending journey to one that better reflects its tangible societal outcomes and effects. This study considers how CSR has reshaped management practice in shifting away from purely profit-based models to more holistic approaches that consider the broader effects of business upon society and the environment.

Keywords: *CSR, social scenarios, strategic framework, tangible societal outcomes, holistic approach*

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A Study on Innovation in Performance Management: Advancing Higher Education Excellence

Sowmya. M. J
Research Scholar, Department of Business Administration, Nitte
(Deemed to be university)
sowmya.mj@nitte.edu.in.

ABSTRACT

Education is a magic pill, a catalyst for growth, and one of the powerful tools for Human development. The education sector encompasses a wide range of institutions, organizations, policies, and practices that aim to promote learning and knowledge gain. Higher education institutions face growing expectations to showcase their worth to various stakeholders such as students, parents, governmental entities, and the wider community. Performance management is crucial in higher education for promoting excellence in education, operational effectiveness, and overall success of the institution. This study aims to identify the level of professional development opportunities tailored to individual needs and innovations in various performance management activities contributes to higher education quality. This paper analyses innovations in performance management in higher education institution through survey -based approach. For this survey researcher will gather information from faculty members serving in undergraduate college of undivided Dakshina Kannada district to access the effectiveness of performance management strategies. The survey will explore key areas such as Performance appraisal, training, pedagogical practices, research and innovation, curriculum development and professional development. By analysing the survey results the study seeks to identify the best practices and critical issues to be address for improvement by providing actionable recommendations for advancing higher education excellence through performance management. The outcome of the study will lead to better policymaking, institutional planning, and future research in performance management within the higher education sector.

Keywords: *Performance Management, Higher Education, Research And Innovation, Professional Development, Institutional Planning.*

Harnessing Agri-Entrepreneurship for Sustainable Green Business in Agriculture

[1]Suresha K M, [2] Dr Harish G Joshi
[1]Ph D Research Scholar, [2]Professor
[12]Department of Commerce
[12]Manipal Academy of Higher Education, Manipal

ABSTRACT

Sustainability is the foundation of modern agriculture, required to maintain ecological balance, ensure food security, and promote economic resilience. Practicing sustainable agriculture reduces environmental impact, conserves biodiversity, and optimizes resource utilization. This change is not only critical for the planet, but it also creates new opportunities for green businesses that promote environmental integrity and resource efficiency.

Green firms are those that aim to reduce their environmental impact while increasing economic value. Green business methods in agriculture include using less chemicals, improving soil health, and supporting biodiversity. These approaches not only protect the environment, but also provide better food options and long-term employment, demonstrating that agriculture can be a successful green business.

Agri-entrepreneurship is essential for transforming agriculture into a green business. Agri-entrepreneurs develop and execute environmentally friendly practices, establish sustainable value chains, and improve market access for green products. Their activities stimulate economic growth, aid rural development, and promote sustainable farming practices, so making agriculture more resilient and environmentally benign.

Organic agriculture exemplifies the convergence of green business and agri-entrepreneurship. Organic agriculture promotes soil health, biodiversity, and high-quality produce by using natural farming techniques rather than synthetic inputs. Agri-entrepreneurs in this industry create organic product lines, build farm-to-table supply networks, and educate consumers about the benefits of organic food. This collaboration between organic agriculture and agri-entrepreneurship promotes environmental sustainability while also empowering local communities, offering economic possibilities and ensuring a sustainable future.

Keywords: *Agri-Entrepreneurship, Sustainable Agriculture, Green Business, Environmental Stewardship, Organic Agriculture, Resource Efficiency, Rural Development.*

Financial Innovation through CBDC – A New Era of Digital Payments in India

[1]Sumathi, [2]Prashanth Kumar A, [3]Sudheesha Poojary
[12]Asst. Professor, [3]Principal
[12]SDM PG Centre, [3]Shree Devi College, Mangalore, Karnataka
[1]sumathi@sdmmba.ac.in, [2]Prashanth.kumar@sdmmba.ac.in , [3]spbantwal@gmail.com

ABSTRACT

India, in the recent few years has witnessed a revolution in the field of payment system through innovative digital business models. Banks in India are collaborating with third-party providers to boost innovation in the payment ecosystem. Technology is evidently evolving in parallel with the end user, and use cases are increasing with the emergence of new avenues of payments. Payments form the core of any financial institution and it's becoming imperative for central banks to provide avenues that offer new world functionalities for relevance. Central Bank Digital Currency (CBDC) is one such avenue that aims to help central banks facilitate financial services widely. The Government of India announced the launch of the Digital Rupee — a Central Bank Digital Currency (CBDC) from Financial Year 2022-23 onwards. The RBI foresees e-Rupee, an Indian CBDC as the next-generation payment mode that is seamless, ubiquitous and anonymous, delivering customers value and a satisfying experience.

The present study attempts to bring out the conceptual framework of Indian CBDC and the future of digital payment system that would provide the country a boost towards growing as an economically strong nation in the world.

***Keywords**: Payment Ecosystem, Innovation, Digital Currency, Ubiquitous, Experience, Boost*

A Study on the Impact of Gig Economy on Traditional Employment Models

[1]Shrutha Padiwal B, [2]B R Pradeep Kumar
[1]1st year MBA, [2]Assistant Professor
[1 2]Mangalore Institute of Technology & Engineering, Moodabidri.
[1]shruthajain03@gmail.com, [2]pradeep@mite.ac.in

ABSTRACT

The gig economy has significantly transformed the labour market, offering flexible work arrangements facilitated through digital platforms. This transformation has introduced both opportunities and challenges for workers and businesses. On one hand, the gig economy provides workers with freedom and flexibility, allowing them to choose when and where to work. It also offers businesses a flexible labour pool, reducing costs associated with traditional employment. However, this gig economy model also presents issues such as job insecurity, lack of benefits, and ethical challenges related to worker status and data privacy. Gig platforms can increase overall employment and provide flexible work opportunities but may also replace traditional self-employment and exert downward pressure on earnings. This raises important questions about labour protections and benefits for gig workers. As the gig economy continues to expand, forecasts suggest rapid growth, underscoring the necessity for comprehensive regulatory frameworks to ensure fairness and protection for gig workers. This research aims to understand the i) motivations behind gig economy workers and explore the effects of the gig economy based on available evidence. ii) Understand the need for regulatory adaptations to safeguard workers' rights and ensure equitable economic development. iii) Analyze the interplay between gig work and traditional employment which calls for nuanced labour market and regulatory policies. A secondary data analysis will be conducted to analyze the above objectives. One of the critical issues is the classification of gig workers as independent contractors rather than employees, depriving them of traditional employment benefits such as health insurance, paid leave, and retirement plans. This highlights the need for policy innovations like portable benefits to ensure that gig workers receive adequate protection and support. By offering insights into the multifaceted impact of the gig economy on traditional work arrangements, this study underscores the dual nature of the gig economy as both a boon and a bane. Policymakers need to consider the evolving employment landscape and develop strategies that ensure fair treatment and security for all

workers. By addressing the challenges and capitalizing on the advantages of the gig economy, balanced policies can promote flexibility and fairness, ultimately contributing to a more equitable and efficient labor market. This research contributes to the ongoing debate by examining the benefits, challenges, and ethical dimensions of the gig economy, advocating for policies that ensure flexibility and fairness in the evolving employment landscape. In conclusion, this study highlights the significant impact of the gig economy on traditional employment models and calls for comprehensive regulatory frameworks to protect gig workers. By exploring the motivations and labour decisions of gig economy workers, this research offers valuable contributions to the development of effective strategies for managing flexible workers, optimizing incentives, and shaping the future of work in the gig economy.

Keywords: *Gig Economy, Gig workers, Freelancing, job security, Labour market disruption, remote work.*

A Study on AI Recruitment Process

Dr. Savitha Pereira
Professor, MBA
SDM PG Centre, Mangalore

ABSTRACT

'Change is inevitable'. There will always be change in this planet. As creatures of this planet, we must embrace change and move on. The best measure of underdevelopment is the absence of change. Nature occasionally forces changes on all living things, including people, animals, birds, plants, and trees. Things that are dependent on the environment undergo constant change as a result of it. So does the way that people live, which has been altering things like housing, education, dietary habits, fashion trends, and behaviour. The principles of change also apply to the organizations that are formed from the human society. They also constantly adapt change to keep things interesting and promote the growth of the company; while avoiding boredom and monotony.

The large number of college graduates who are in great demand of employment has made recruitment a demanding undertaking. The HR staff is using artificial intelligence in recruiting to simplify and expedite this process. This research paper aims to study about the AI hiring process and to investigate its benefits and drawbacks.

***Keywords**: AI, Recruitment, HRM*

Enhancing Commerce Education for Sustainable Development: A Framework for Integrating SDGs

[1] Anilkumar M, [2]Dr. Laxmana P
[1]Research Scholar,[2]Senior Professor
[12]Department of Studies in Commerce
[12]Davangere University
[1]anilk4777@gmail.com, [2]drlaxmanap2007@gmail.com

ABSTRACT

The research emphasizes that post-graduate commerce programs curriculum contributes to achieving the Sustainable Development Goals. With the global trends on sustainable development, higher education institutions, specifically in the commerce program, play a crucial role in enhancing practical skills and knowledge for future leaders. This research aims to explore the current state of Sustainable Development Goals (SDGs) integration within commerce education programs and develop an inclusive framework for enhancing sustainability principles in commerce education. By examining the perceptions and experiences of educators, curriculum developers, policymakers, and students, this study seeks to identify key challenges, opportunities, and best practices for effectively incorporating SDG-related competencies into commerce curricula. This study was based on qualitative and quantitative research methods and with the help of sources collected from primary data through a survey, and the findings suggest that a multidisciplinary approach, practical learning opportunities, and a strong collaboration between industry and stakeholders are essential for learning relevance and impact of commerce programs

Keywords*: Curruculum, Integration, Educators, Multi-Disciplinary,Collaboration.*

 ISBN: 978-93-340-9369-8

The Evolution of Green Banking: Challenges and Opportunities for Sustainable Finance in India

[1]Dr. Cirappa I B., [2]Suryaprasada M B
[1]Professor, [2]Research Scholar
[12]Department of Studies in Commerce, Davangere University
[1]ibdrcirappa@gmail.com, [2]suryaprasadamb@gmail.com

ABSTRACT

Green banking in India has undergone significant evolution, transforming from a niche concept into a mainstream component of sustainable finance. This article explores the trajectory of green banking in India, highlighting key milestones, challenges, and opportunities. The Indian banking sector has increasingly aligned its strategies with environmental sustainability, driven by regulatory mandates, market demand, and global commitments. However, the journey has been fraught with challenges, including regulatory inconsistencies, limited awareness, and high implementation costs. Despite these challenges, green banking presents numerous opportunities, such as market growth, innovation, and long-term financial stability. This article provides a comprehensive analysis of the evolution of green banking in India, supported by statistical data on green bond issuance, adoption of green financial products, and sustainable banking practices.

Keywords: *Sustainable finance, green bond, green banking, sustainable banking practices*

Factors Influencing Commercial Banks Profitability in Kenya: A Panel Data Approach

[1]Muniraju, [2]Onderi Kennedy Isinta
[1] Professor, [2]Research Scholar
[12]Department of Commerce Mangalore University, Mangalagangotri
[1]drymuniraju97@gmail.com,[2]onderiken24@gmail.com

ABSTRACT

This study is one of the few studies examining the relationship between macroeconomic variables and bank-specific factors and profitability in the banking sector of developing countries. This article explores the commercial banks profitability in Kenya and the relationship between macroeconomic and bank-specific factors. This research demonstrates how macroeconomic factors and bank-specific attributes play a significant role in the stability and sustainability of financial institutions' operations. Return on assets (ROA) is used in the study to indicate bank profitability. Some variables specific to banks have been used as explanatory variables in the study, including capital adequacy (CAD), asset quality (AQ), deposit (DEP), Bank Size (BS), and bank branches(BB). The macroeconomic indicators considered in this research are the GDP, exchange rate (EXR), and inflation rate (INFL). Unit root tests, pooled OLS, fixed effects and random effects models, and panel data for 31 commercial banks listed on the Nairobi Stock Exchange between 2014 and 2022 are employed. The analysis results show that all bank-specific characteristics statistically impact ROA except for CAD and DEP. It also shows that, of the macroeconomic determinants, INFL has a significant positive impact on ROA, whereas EXR has a significant negative effect on bank profitability. This study will provide substantial information for more research; however, the findings are restricted to the banking industry in Kenya.

***Keywords**: Bank Macroeconomic, ROA, Panel Data, Kenya*

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Recent Trends in Accounting: A Study of New Future of Business

[1] Dr. Supriya R, [2] Anwar Ahmed Betgeri
[1] Associate Professor & Chairperson, [2] Research Scholar
[12] Department of Studies in Commerce, Davangere University
Shivagangothri, Davangere

ABSTRACT

The outlook for the accounting industry appears promising, despite concerns about job displacement caused by automation. It's crucial for professionals to recognize that automation relies on human input, underscoring the importance of upgrading skillsets and embracing emerging accounting trends to remain competitive. Embracing agile practices supported by accounting software is poised to become a prominent marketing trend in 2025. By prioritizing innovation and integrating technology, businesses can unlock opportunities for enhanced profitability through advanced accounting practices.

Outsourcing in accounting presents a prime opportunity to reduce expenses, enhance productivity, and drive greater profitability. To fully leverage accounting outsourcing for your firm, it's essential to grasp all pertinent trends. While the integration of technology into the accounting sphere may still be in its nascent stages, it's already making significant strides in adapting to emerging advancements. The industry is swiftly progressing towards embracing trends such as outsourcing finance and accounting services, alongside adopting advanced technological solutions like cloud-based subscriptions, on-premise solutions, and Software-as-a-Service (SaaS) models.

It's imperative for accounting firms to establish dual authentication systems to restrict access to sensitive data, considering the extensive sharing of confidential financial information between accountants and clients. Prioritizing data security is essential for safeguarding the most valuable asset of organizations: their customers' financial data.

Keywords: *Trends, Challenges and Opportunities*

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Safe online Banking across Generations: An examination of Habits, Security measures, and Education

[1] Nithish P, [2] Deepthi B S, [3] Dr. Amith Donald Menezes
[1 2] 1st year MBA Students,[3] Associate Professor
[123] Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1]nithishpoojary78@gmail.com, [2]deepthisullia05@gmail.com, [3]amithmnzs@gmail.com

ABSTRACT

Safe Online Banking Across Generations focuses on ensuring secure online banking experiences tailored to different age groups by implementing robust security measures, providing targeted education on online safety, and designing accessible and user-friendly platforms for all users. Employing a combination of quantitative and qualitative methods through surveys and interviews conducted across various age groups. The findings uncover distinct generational trends in online banking habits. Younger users display higher levels of engagement and reliance on digital banking platforms, whereas older generations tend to adopt a more cautious approach, often supplementing online services with traditional banking methods. The research delves into the security measures adopted by different age groups to safeguard their financial information. Although younger users are generally more knowledgeable about advanced cybersecurity practices, they are still prone to risky behaviors such as using weak passwords or falling victim to phishing scams. On the other hand, older users, despite their cautious nature, often lack a comprehensive understanding of contemporary online security threats and the protective measures needed to counter them. Furthermore, the study examines the impact of education on promoting safe online banking practices, revealing significant gaps in awareness and knowledge across all age groups.

Keywords: *Online Banking Habits, Security Measures, Safe Online Banking Practices, Digital Banking Platforms.*

Gender Variations in Anxiety and Depression Among Students of Different age Groups: A Quantitative Study.

[1] Pooja, [2] Dr. Amith Donald Menezes
[1]1[ST] Year MBA Student,[2] Associate Professor
[12] Mangalore Institute of Technology and Engineering, Moodabidri.
[1] Shettigarpooja06@gmail.com, [2]amithmnzs@gmail.com

ABSTRACT

This study investigates various stressors, including academic pressure, financial issues, and family dynamics that influence student's mental health. This study aims to comprehensively evaluate these factors and their impact on student's mental well-being. By conducting a detailed survey, we seek to determine the prevalence of mental health conditions such as anxiety and depression among college students and to assess their utilization of available mental health support services.

Additionally, the research aims to identify effective interventions that could enhance mental health support for students. The findings will provide valuable insights into the primary stressors affecting student's mental health and offer practical recommendations for improving mental health resources and support systems on college campuses. This study underscores the importance of addressing mental health challenges in the academic environment to promote overall student well-being and academic success.

Keywords: *Mental Health, Financial Issues, Family Dynamics, Academic Success.*

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Student Spending Behaviour: The Impact of Digital Payment Systems Versus Traditional Methods

[1] Pranav Krishna, [2] Dr. Amith Donald Menezes
[1] 1st year MBA Student, [2] Associate Professor
[12] Mangalore Institute of Technology and Engineering, Moodabidri.
[1] Pranavkrishna59@gmail.com, [2] amithmnzs@gmail.com

ABSTRACT

The advent of online payment methods has revolutionized financial transactions, particularly among students, who are increasingly shifting away from traditional cash-based payments. The shift towards transactions online has reshaped consumer spending habits, especially among students. Online payment includes payment with the help of electronic medium which has encouraged cashless transactions. This study aims to investigate the impact of online payment methods on students' overall spending patterns and to assess their preferences for online versus traditional payment methods. Online transaction often enables them to keep the track of spending of the student thus helping them to decide on the overall spending pattern and focussing on the spending frequency. This study hypothesizes that students increasingly favour online payment methods due to convenience accessibility and technological integration, which may potentially alter their spending habits. The study aims to provide valuable insights and implications using a mixed method approach by conducting surveys and using statistical methods to understand and adapt to the changes in students' financial behaviour in the digital age.

***Keywords**: Technology Integration, Online Payment, Financial Behaviour, Spending Frequency.*

Customer Satisfaction in Online Banking: A Study of Service Quality and User Experience

[1] Neha N K , [2] Nikhitha ,[3] Dr. Amith Donald Menezes
[12] 1st year MBA Student,[3] Associate Professor,
[123] Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1] nnehank846@gmail.com,[2] amithmnzs@gmail.com

ABSTRACT

Electronic banking or online banking is a form of banking in which funds are transferred through an exchange of electronic signals rather than through an exchange of cash, cheque or other types of paper documents. This study investigates the impact of electronic banking (e-banking) services on consumer satisfaction. It aims to evaluate customer experiences with online banking platforms by focusing on features, functionality, security, and overall user experience. By analyzing customer feedback, the research will identify key factors influencing satisfaction, including ease of use, feature range, transaction speed, security measures, and customer service.

This study investigates the impact of speed and performance on customer experience in online banking, focusing on trust, security, ease of use, loading times, and response times. A mixed-methods approach is employed to collect data from online banking customers in Dakshina Kannada. The study reveals significant correlations between speed and performance metrics and customer experience dimensions. Furthermore, it identifies opportunities to improve overall customer experience, including optimizing website loading times, enhancing mobile app responsiveness, and implementing robust security measures. The findings provide valuable insights for banks to enhance their online banking services, fostering customer loyalty and retention in the competitive banking landscape of Dakshina Kannada.

Keywords: *Online Banking, Customer Satisfaction, User Experience, Security, Convenience, Customer Support, Banking Technology.*

The Digital Footprint: Exploring the Impact of Technology and Social Media on Student's Privacy, Security and Academic Performance

[1] Pavana, [2] Dr. Amith Donald Menezes
[1] 1st year MBA student ,[2] Associate Professor
[12] Mangalore Institute of Technology and Engineering, Moodabidri.
[1] Pavana24m@gmail.com, [2] amithmnzs@gmail.com

ABSTRACT

In today's digital era, student's lives are intertwined with technology and social media, leading to profound effects on their privacy, security, and academic performance. This paper investigates these impacts through a detailed survey designed to explore three key areas: the level of concern students have regarding the security of their personal information, the extent to which social media influences their concentration and focus on academic tasks, and the overall impact of academic achievements. The study reveals a significant level of anxiety among students concerning the security of their data, highlighting a need for better security measures and increased awareness. This anxiety can limit their engagement with digital resources, affecting their access to beneficial technology. Regarding academic focus, social media presents a dual-edged impact. While it can distract and reduce productivity, it also offers opportunities for academic engagement and collaboration when used effectively. The study underscores the importance of balancing technology use, as excessive use impairs concentration and can lead to poor habits and sleep patterns, while moderate use can enhance learning experiences.

Keywords*: Student Privacy, Data Security, Social Media Impact, Academic Performance, Technology Use, Digital Distractions.*

Sustainable Business Practices in Profit & Not for Profit Organisations

Aurin Madtha
St. Aloysius College, Institute of Management and IT, Mangalore
Udupi College of Professional Studies, Manipal, Karnataka
aurinmadtha0@gmail.com

ABSTRACT

There are several grand sustainability challenges, that how businesses can use their resources, competencies, and experiences to address major economic, social, and environmental issues faced by society. In this regard, Sustainable business practices have become a crucial aspect in today's fast moving era considering both profit and non-profit organizations. They are mainly driven by the growing recognition of their role in fostering long-term economic, environmental, and social benefits. This qualitative approach focused to understand the current sustainable business practices in profit and non-profit sectors. In profit organizations, sustainability is increasingly integrated into core business strategies, encompassing resource efficiency, renewable energy adoption, and eco-friendly product development. These practices not only reduce operational costs but also enhance corporate reputation, attract environmentally conscious consumers, and mitigate risks. Companies leveraging sustainable innovation gain competitive advantages and drive market differentiation, promoting resilience and long-term profitability.

In the other hand, Non-profit organizations, while primarily mission-driven, also adopt sustainable practices to enhance their operational efficiency and maximize their social impact. By integrating sustainability into their programs and operations, non-profits ensure the efficient use of resources, foster community engagement, and develop innovative funding models such as social enterprises and impact investing. These strategies enable non-profits to achieve financial sustainability, reduce dependency on single funding sources, and increase their ability to address social and environmental challenges effectively.

This article tries explores the convergence of sustainable business practices in profit and non-profit organizations, highlighting their shared objectives and distinct approaches. It

emphasizes the importance of strategic planning, innovation, and continuous improvement in embedding sustainability into organizational culture. The adoption of sustainable practices not only drives economic viability but also aligns with global efforts to address critical issues such as climate change, resource depletion, and social inequity. By prioritizing sustainability, both profit and non-profit organizations can contribute to a more sustainable and equitable future, demonstrating that economic success and social responsibility are not mutually exclusive but rather mutually supporting goals.

Keywords: *Sustainability, Sustainable Business Practices, Profit Organisations, Non Profit Organisations, Global Challenges, Innovation, Competitive Edge.*

Modern Approaches Enhancing Quality of Work-Life: Recent Trends in Human Resource Management a Content Analysis of Academic Literature

[1] Dr. Sathyanarayana, [2] Pooja Budihal
[1]Professor, [2] Research Scholar
[1 2] Department of Studies in Commerce, Davangere University, Davangere
[1] sathyanarayana80@gmail.com,[2] poojabudihal6@gmail.com

ABSTRACT

Quality of work-life (QWL) is a multidimensional concept that reflects the well-being and satisfaction of employees in their work environment. QWL has been linked to various organizational outcomes, such as employee engagement, productivity, retention, and performance. However, QWL is also influenced by the external and internal factors that shape the work context, such as technological changes, globalization, diversity, and social responsibility. Therefore, human resource management (HRM) plays a vital role in enhancing QWL by designing and implementing policies and practices that address the needs and expectations of employees and align with the strategic goals of the organization. This paper aims to explore the modern approaches and recent trends in HRM that contribute to improving QWL, using content analysis as the research methodology. Content analysis is a systematic and objective technique for analyzing textual data, such as academic articles, books, reports, and other documents. The paper reviews the literature on QWL and HRM from the past decade (2011-2020) and identifies the main themes, categories, and subcategories that emerge from the content analysis. The paper also discusses the implications and limitations of the findings and suggests directions for future research.

***Keywords**: Quality of Work-Life, Work life balance, Organisational behaviour*

Assessing Investor Satisfaction with Systematic Investment Plans (SIP): A Study among Professionals in and around Surathkal, Dakshina Kannada

Avaneesh G Acharya
1st Semester, School of Humanities, Social Science and Management, Surathkal Mangalore.

ABSTRACT

This study delves into the assessment of investor satisfaction with Systematic Investment Plans (SIPs) among professionals in and around Surathkal, Dakshina Kannada, Karnataka. SIPs have emerged as a popular investment avenue, offering investors a disciplined approach to wealth accumulation in the financial markets. Understanding the factors influencing investor satisfaction with SIPs is crucial for both investors and financial service providers. The study investigates three key independent variables: the frequency of SIP investments, the duration of SIP investments, and the investment amount in SIPs. These variables are analyzed in relation to the dependent variable of investor satisfaction. By examining these variables, the study aims to provide insights into the factors that contribute to investor satisfaction and inform potential future buyers. Primary data were collected through a structured questionnaire distributed to 100 professionals using convenient and snowball sampling techniques. The questionnaire was designed to gather accurate and unbiased information regarding investors' experiences with SIPs. Data collection took place over the course of February and March 2024. To analyze the data, a combination of descriptive analytics techniques and advanced statistical methods was employed. Descriptive analytics involved percentage analysis, graphical presentation, and summary statistics to provide a comprehensive overview of the data. Additionally, multiple regression analysis and Structural Equation Modeling (SEM) were utilized to test hypotheses and establish relationships between variables. The hypotheses tested include: The duration of SIP investment significantly affects investor satisfaction, the frequency of SIP investments significantly influences investor satisfaction and the amount of SIP investment has a significant impact on investor satisfaction. The findings of this study are expected to contribute valuable insights into investor behavior and satisfaction regarding SIPs. Furthermore, the study will offer recommendations based on empirical evidence to

aid potential buyers in making informed decisions about SIP investments. Ultimately, this research endeavors to enhance understanding of investor preferences and contribute to the advancement of financial services in the region.

***Keywords**: Investor satisfaction, Systematic Investment Plans, Investment avenues, Financial service providers and Potential future buyers*.

A Study on Impact of Digital Transformations on Traditional Retail Business with reference to Kundapura Taluk

[1] Vinaya V Shetty,[2] Josline Renita D'Almeida
[12] Assistant Professor in Commerce
[1 2] Dr. B. B. Hegde First Grade College, Kundapura.
[1] vinayashtty@gmail.com,[2] renitajoslin94@gmail.com

ABSTRACT

The rapid advancement of digital technologies has significantly altered various sectors, including the retail industry. This study investigates the impact of digital transformations on traditional retail businesses, with a specific focus on Kundapur Taluk. As digital tools and platforms become increasingly prevalent, traditional retailers are faced with the imperative to adapt to these changes to remain competitive. This research aims to explore how digital transformation is influencing retail practices, customer interactions, and business operations in this regional context. The study adopts a mixed-methods approach to provide a comprehensive analysis of digital transformation's effects. Quantitative data was collected through surveys distributed to a sample of traditional retail businesses in Kundapur Taluk. The survey addressed key aspects of digital adoption, including the use of e-commerce platforms, social media marketing, digital payment systems, and customer relationship management tools. In addition to the survey, qualitative data was gathered through in-depth interviews with a diverse group of stakeholders, including retail business owners, employees, customers, and industry experts. These interviews offered nuanced insights into the experiences and perceptions of digital transformation. Key themes explored in the interviews include the challenges faced by retailers in integrating digital technologies, the perceived benefits of digital tools, and the overall impact on customer engagement and satisfaction. The research findings reveal that digital transformation had a profound impact on traditional retail businesses in Kundapur Taluk. Retailers who embraced digital tools reported enhanced operational efficiency, improved customer engagement, and increased sales. E-commerce platforms and social media marketing emerged as particularly influential, enabling retailers to reach a broader audience and attract a younger demographic. Digital payment systems also facilitated smoother transactions and improved

customer convenience. However, the study also identified several challenges associated with digital transformation. Smaller retailers often faced barriers such as limited technical expertise, high initial costs, and resistance to change from staff and customers. Additionally, there were concerns about data security and the need for ongoing training to keep up with technological advancements. Overall, this study contributes to a deeper understanding of how digital transformation affects traditional retail businesses in a localized context. By examining the specific case of Kundapur Taluk, the research offers valuable insights into the broader implications of digital transformation for similar regions. The findings not only highlight the benefits of embracing digital technologies but also address the challenges that need to be navigated for successful adaptation.

Keywords: *Digital Transformations, Retail Business, Quantitative Data*

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Beyond Security: AI-Powered CCTV Systems for Business Enhancements in Smart City Retail Stores

Shashanka G K
Research Scholar
Business Administration
St.Joseph Engineering College, Mangaluru, India
shashanka.gk@gmail.com

ABSTRACT

In the evolving landscape of smart cities, medium-scale retail stores are leveraging advanced technologies to enhance their operations and customer experience. This paper explores the multifaceted applications of AI (artificial intelligence) - powered CCTV (Closed Circuit Television) systems beyond traditional security measures. By integrating artificial intelligence, these systems can analyse customer behaviour, optimise store layouts, manage inventory in real-time, and personalise marketing efforts. Additionally, AI-driven CCTV enhances queue management, prevents losses through suspicious behaviour detection, and improves customer service. The implementation of heat mapping, demographic analysis, and operational efficiency monitoring provides retailers with valuable insights, leading to more informed business decisions. This study highlights the transformative potential of AI-enabled CCTV systems in driving business enhancements and operational excellence in smart city retail environments. The proposed technique is considered to be a good approach as there is no change to the existing business system, however a smart way of enhancing the Brick-and-Mortar Businesses using Face Detection and Recognition in the Surveillance system.

Keywords: *Artificial Intelligence, Face Recognition, Surveillance, Business Analytics*

Emerging Concerns in E-Business: Challenge and Opportunities in this Dynamic Business World

[1] Prakruti P Shetty, [2] Dattaprasad H V
[12] 1 year MBA
[12] Mangalore Institute of Technology & Engineering
Moodabidiri, Dakshina Kannada, Karnataka
[1] prakrutipshetty2002@gmail.com, [2]dattadattashetty6003@gmail.com

ABSTRACT

The rapid evolution of technology has transformed the landscape of e-business, bringing forth a myriad of opportunities and challenges. The fast-paced evolution of technology also forces businesses to continually adapt, which can be challenging in terms of both resources and expertise. This paper aims to explore the latest concerns impacting businesses operating in the digital sphere. Trends in e-business include the rise of mobile commerce, increasing adoption of artificial intelligence and machine learning for personalized customer experiences, the growth of social commerce through platforms like instagram and facebook, and the expansion of subscription-based models. Utilizing secondary data from existing literature, industry reports, and case studies, this research identifies key challenges such as cyber security threats, data privacy issues, regulatory changes, and the pressures of maintaining competitive advantage in an increasingly saturated market. By analysing data from various sources, the paper provides a comprehensive overview of how these emerging challenges are shaping the e-business environment. Furthermore, the paper delves into strategies and best practices that businesses can adopt to navigate these challenges effectively. The findings emphasize the importance of adaptability, strategic planning, and leveraging technology to maintain resilience in the face of ongoing changes. These trends are reshaping how businesses engage with customers and operate in the digital marketplace. This research contributes to the growing body of knowledge on e-business, offering valuable insights for businesses looking to sustain growth and success in a rapidly changing digital landscape.

Keywords: *Cyber Security, Data Privacy, Privacy Compliance, Consumer Trust, Artificial -Intelligence, Strategic Planning, Digital Marketplace, Digital Landscape*

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Carry Trade Returns Using Currency Derivatives in Indian Context

Rachana Shenoy
IVth Semester MBA
Alva's Institute of Engineering and Technology, Mijar, Moodbidri
rachanashenoy07@gmail.com

ABSTRACT

This study delves into the profitability of carry trade strategies in the Indian context, focusing on using currency derivatives. The core objective is to analyze how interest rate differentials (IRD) and exchange rate volatility influence the returns of carry trade activities. By employing forward contracts across four key currency pairs (USD/INR, GBP/INR, EUR/INR, JPY/INR), the research quantifies carry trade returns, highlighting the relationship between IRD and the profitability of these trades. The study also investigates the role of exchange rate fluctuations in determining the risk-adjusted returns, providing insights into the conditions under which carry trades can be profitable or lead to losses. The findings suggest that while IRD serves as a primary driver of carry trade returns, the volatility of exchange rates introduces significant risk, necessitating a nuanced approach to the use of currency derivatives in hedging and optimizing returns. The research concludes with actionable recommendations for investors seeking to leverage carry trade strategies in emerging markets like India, emphasizing the importance of comprehensive risk management practices

Keywords*: Derivatives, Currency, Trading*

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Dividend Policy and Stock Valuation in Indian context

Apoorva
IV Semester MBA
Alva's institute of engineering and technology, Mijar, Moodbidri
apoorvaacharya2393@gmail.com

ABSTRACT

This study explores the impact of dividend announcements on stock prices and examines investor preferences towards these announcements. The research investigates how changes in dividend policies influence market reactions and investor behaviour by analysing a broad range of companies across various sectors. The objective is to understand whether and how dividend announcements affect stock price volatility and investor confidence in the market. By examining historical data and market trends, the study evaluates the correlation between dividend announcements and stock price movements. It also analyses investor reactions to increases, decreases, or unchanged dividend announcements to determine whether investors prefer regular dividend pay outs, higher dividends, or stability in dividend policy. The study finds that dividend announcements can significantly impact stock prices, with positive announcements generally leading to stock price increases and negative announcements leading to decreases. These findings suggest that dividend announcements are crucial in shaping investor perceptions and market behaviour, offering insights for corporate management on the importance of strategic dividend policy as a tool for shareholder value maximization and market positioning.

Keywords: *Dividend, Valuation, Security analysis*

Breaking Barriers: Genz's Journey Into Investment Literacy

[1]Roveena Theresa Dsouza,[2] Rakesh Rudrappa Angadi,[3] Naresh Aithal
[123] 1st year MBA Students
[123]Mangalore Institute of Technology & Engineering, Moodabidri.
[1]roveenadsouza2020@gmail.com,[2] rakeshangadi187@gmail.com,
[3]nareshaithal459@gmail.com

ABSTRACT

Generation Z, born between 2000s until the late 2010s, is the first generation to have lived up completely in the digital era. They are very digitally aware and value diversity, inclusivity, and environmental sustainability. Economic realism and a focus on mental health are essential to their perspective, reflecting their experiences with financial uncertainty and societal crisis. Gen Z was defined by a combination of digital fluency, social beliefs, and practical desire.

This paper explores the complex relationship between income levels, education, investment performance, and familiarity with investments. Through an easy-to-use web link, participants will be able to easily complete the survey, and their private answers will be included to a carefully chosen dataset for further research. Higher education levels are often linked with stronger holding investments knowledge, as people with advanced education are more likely to have access to financial literacy components and formal training. This greater information can lead to better financial decisions and a greater understanding of risk and reward. Income levels have a major influence on risk-return decision-making, with higher-income persons having a larger ability to accept risks due to their financial protection. Lower-income individuals may pick safer investments with lower returns in order to protect their limited financial resources.

Keywords: *Generation Z, Financial Uncertainty, Digital Fluency, Risk and Reward, Income Levels, Safe Investments.*

Exploring Cyber Security Threats in E-Payments: Insights Across Age Groups

[1]Akshatha, [2] Aparna K
[12]1 st year MBA Students
[12] Mangalore Institute of Technology and Engineering, Moodabidri
Dakshina Kannada, Karnataka, India.
[1]naikakshatha666@gmail.com, [2]aparnak1510@gmail.com

ABSTRACT

In recent years, the rapid growth of digital transactions has transformed the way people manage and spend their money. E-payments, which include online banking, mobile wallets, and contactless payments, have become an integral part of daily life for individuals across all age groups. As the reliance on e-payments increases, so does the exposure to cybersecurity threats. The research was carried by conducting a survey through administering the questionnaire. This paper investigates the cyber security challenges associated with online payments across different age groups. The study explores common issues such as weak password usage, susceptibility to phishing, and unfamiliarity with secure payment methods. This study investigates user perceptions of cyber security in the context of electronic payments. The paper also analyses age-specific cyber security challenges and user behaviours to recommend solutions for improving e-payment security. Despite the increasing reliance on digital transactions, the majority of respondents reported not having experienced any cyber security issues, and they generally feel secure using e-payment systems. This sense of security is attributed to enhanced fraud detection and prevention tools, which users believe significantly contribute to the safety of online transactions. The findings suggest that the continuous improvement of these security measures is crucial for maintaining and increasing user confidence in electronic payment systems. Exploring cyber security threats in e-payments shows that different age groups face different risks. Younger people might deal with scams and fake emails, while older people might have trouble with basic security. Knowing these differences helps create better protection for everyone.

***Keywords**: Cyber Security Threats, E-Payments, User Behaviour, Security Measure.*

The Evolution of Globalisation in India: From Ancient Trade to Modern Liberalisation

Punita Ganesh Nayak
III BBA
Vivekananda College of Arts Science and Commerce, (Autonomous)Puttur
punitaganeshnayak@gmail.com

ABSTRACT

This paper explores the complex and dynamic history of globalisation in India, spanning from ancient trade networks to modern liberalisation policies. The study is divided into five distinct phases, each representing a significant era in India's globalisation journey.

The first phase examines globalisation during ancient India, where Bharat was a hub of international trade, with extensive networks stretching across the Mediterranean, Middle East, and Southeast Asia. The exchange of goods, ideas, and cultures prevailed during this period.

The second phase delves into globalisation during the British Raj (1757 - 1947), where India became a British colony, and its economy was integrated into the global capitalist system. This era saw the exploitation of India's resources and the decline of traditional industries.

The third phase discusses the period from 1947 to 1990, where India adopted a protectionist approach, limiting globalisation and promoting self-sufficiency. This era saw the rise of import substitution industrialisation and a strong public sector.

The fourth phase examines the introduction of liberalisation, globalisation, and privatisation in 1991, which marked a significant shift in India's economic policies. This era saw the opening up of India's economy to foreign investment, trade liberalisation, and the emergence of a new economic order.

Finally, the paper explores modern globalisation in India (1991 - present), characterised by economic growth, increased foreign investment, and integration into global value chains. However, this also raises concerns about the impact of globalisation on small local businesses and the need for renewed protectionist policies.

The paper concludes by discussing strategies to protect small local businesses from the effects of globalisation, such as promoting local entrepreneurship, encouraging innovation, and implementing policies that support small and medium-sized enterprises.

Overall, this paper provides a comprehensive understanding of India's globalisation

journey, highlighting its complexities, challenges, and opportunities. By examining the evolution of globalisation in India, this study aims to contribute to the ongoing debate about the impact of globalisation on local economies and businesses.

Keywords: *Globalisation, Evolution, Economy, Protectionist Policy.*

Impact of Change Management on Innovation and Creativity in Organisations

[1] Vishmitha, [2] Zifa Riza, [3] Shrinidhi
[123] 1st year MBA Students
[123] Mangalore Institute of Technology and Engineering, Moodabidri.
[1] vishmithavishmithashetty27@gmail.com, [2] zifariza704@gmail.com,
[3]kundershrinidhi@gmail.com

ABSTRACT

In today's fast-paced and ever-evolving business, organizations must adapt and transform to stay ahead of the curve. Change management is no longer just about navigating transitions, but about harnessing innovation and creativity to drive growth, improvement, and sustainability. Effective change management involves embracing a culture of experimentation, encouraging bold ideas, and empowering individuals to think outside the box.

The study examines the relationship between change management and innovation in organisation. We investigate how change management strategies influence employee creativity, idea generation and innovation adoption. Our research reveals that effective change management can fost a culture of innovation, while poorly managed change can stifle creativity. Key factors influencing this relationship include leadership, communication, employee engagement, and organisational culture. The findings provide insights for managers seeking to leverage, innovation and creativity during times of change, driving business success and sustainability.

Keywords: *Change Management, Innovation, Creativity, Organisational Culture, Leadership.*

Mitigating Risks: Strategies for Preventing and Addressing Fraud in E-Commerce

[1]Gaurav G Amin,[2] Disha R Poojary,[3] Shwetha
[123]1year MBA Students
[123]Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1]gauravgamin3011@gmail.com, [2]dishapoojary24@gmail.com,
[3]shwethakkumari11@gmail.com

ABSTRACT

Fraud in e-commercial enterprise raises demanding situations of financial balance, operational performance, and client confidence. The modern-day article explores the different effects of fraud on e-companies, along with financial losses, reputational damage, and operational interruptions, as well as the regulatory and felony problems that rise up due to fraudulent hobby. The report delves in addition into the strategies for effectively stopping such fraud, together with state-of-the-art cybersecurity protections, multi-issue authentication, and real-time fraud detection. Integrating case studies with current records, the have a look at highlights effective practices for reducing fraud chance and protecting company integrity.

The findings of this studies are provided with the expectancy that they could be relevant and useful to e-businesses of their quest to higher fraud safety for organisation and popularity.

Keywords: *E-Business Fraud, Risk Mitigation, Multi-Factor Authentication, Reputation Damage, Legal Challenges.*

The Role of Human Resource in Managing Generational Diversity: A Qualitative Study of Best Practices

[1]Prerana, [2] Sree Vidyalakshmi Mayya
[12] 1st year MBA Students
[12] Mangalore Institute of Technology and Engineering, Moodabidri,
Dakshina Kannada, Karnataka, India
[1]bangeraprerana@gmail.com, [2]vidyammayya2002@gmail.com

ABSTRACT

In today's ever-changing workplace, having multiple generations working together presents challenges and opportunities for organizations. This study examines how Human Resource (HR) management can effectively handle generational diversity by identifying and implementing best practices that encourage inclusivity, collaboration, and productivity across different age groups. The research method used in this study involves in-depth interviews with HR professionals, managers, and employees from various industries, along with an analysis of organizational policies and practices that address generational differences. The findings indicate that successfully managing generational diversity depends on HR's ability to understand and address each generation's unique values, communication styles, and work preferences. Key strategies include personalized training programs to bridge generational gaps, mentorship initiatives that utilize the strengths of different age groups, and flexible work arrangements that cater to various life stages. Additionally, fostering an organizational culture that values diversity and inclusion is crucial in minimizing potential conflicts and maximizing the benefits of a multigenerational workforce. The study emphasizes the importance of ongoing learning and adaptation within HR practices to keep up with the changing dynamics of generational diversity. By implementing these best practices, organizations can enhance employee engagement and satisfaction, drive innovation, and gain a competitive advantage. The research underscores the critical role of HR in navigating the complexities of generational diversity. It offers practical insights for organizations aiming to optimize their workforce in an increasingly age-diverse environment. This study contributes to the growing body of knowledge on generational diversity in the workplace. It provides actionable recommendations for HR professionals looking to harness the full potential of their multigenerational teams.

Keywords: *Generational Diversity, Human Resource (HR) Management, Inclusivity, collaboration, Employee Engagement, Flexible Work Arrangements, Culture*

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Currency Future and Exchange Rate Volatility: A Hedging Strategy for International Trade

Chaitra
IV Semester MBA
Alva's institute of engineering and technology, Mijar, Moodbidri
chaitrakulal2001@gmail.com

ABSTRACT

This study aims to evaluate the effectiveness of currency future hedging as a strategy for mitigating exchange rate fluctuations in international trade. In an increasingly globalized economy, businesses face significant challenges due to the volatility of exchange rates, which can adversely affect pricing, profitability, and financial stability. Currency futures, as standardized financial contracts, offer a mechanism for businesses to hedge against potential losses caused by unfavorable currency movements. This research explores the relationship between currency futures and exchange rate volatility, focusing on how businesses can utilize these instruments to protect their financial interests. Through a comprehensive analysis, the study seeks to provide insights into the advantages and limitations of currency futures as a hedging tool, and to offer recommendations for businesses looking to navigate the complexities of global trade effectively. The findings underscore the importance of strategic hedging in managing currency risk, highlighting the role of currency futures in enhancing financial stability for companies engaged in international commerce.

Keywords: *Currency trading, Hedging, International trade*

An Analysis of Online Gaming and Substance Use: Exploring Age-Specific Vulnerabilities and Societal Impacts

[1]Karthik H R,[2] Monika N S ,[3] Priston Astol Menezes
[123]1st year MBA Students
[123]Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1]karthikhegde2003@gmail.com, [2]monikans388@gmail.com,
[3]Pristonastolmenezes10@gmail.com

ABSTRACT

This study delves into the various impacts of online gaming and substance use, with a focus on specific age groups and regional consequences. The research aims to identify which age group is most affected by these behaviors. The study provides a detailed analysis of the negative effects of online gaming, including mental health issues such as anxiety and depression, as well as social and behavioral problems like decreased academic performance and increased social isolation. Financial risks and physical health problems associated with sedentary lifestyles are also significant concerns, along with the strain these issues place on personal relationships. Concurrently, the research explores the serious threats posed by alcoholism and smoking, highlighting their impact on public health and societal stability. Key findings include the link between substance use and chronic health conditions, premature mortality, increased crime rates, and domestic violence. Additionally, the paper examines how substance use contributes to unemployment and family breakdowns, with a focus on resulting accidents and injuries. By providing an in-depth analysis of these issues, the paper aims to offer valuable insights for policymakers, educators, and health professionals. The ultimate goal is to enhance understanding of the negative effects of online gaming and substance use and to develop effective strategies for mitigating these adverse impacts within the region.

Keywords: *Online Gaming, Substance Use, Age-Specific Vulnerabilities, Mental Health Issues, Health Risks, Social Impact, Public Policy*

Revolutionizing HR: The Transformative Impact of Artificial Intelligence on Human Resource Management

[1]Karthik D Karkera, [2]Akhilesh, [3]Al Fahad Abdul Gani
[123]1st year MBA Student
[123]Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1]karthikkarkera1132003@gmil.com, [2]akhilbhandary937@gmail.com,
[3]alfahadabdulgani@gmail.com

ABSTRACT

The integration of Artificial Intelligence (AI) in Human Resource Management (HRM) is revolutionizing traditional HR practices, leading to unprecedented efficiency, accuracy, and personalization. This paper explores the transformative impact of AI on key HR functions, including recruitment, talent management, employee engagement, and decision-making. By automating repetitive tasks and offering data-driven insights, AI empowers HR professionals to focus on strategic initiatives that enhance organizational performance. Through a comprehensive analysis of current trend, this paper demonstrates the secondary data and how AI is not only reshaping the HR landscape but also driving a paradigm shift towards a more agile, responsive, and employee-centric approach to managing human capital. The findings underscore the necessity for HR leaders to embrace AI as a critical tool in navigating the innovative approach of HR, ultimately positioning organizations for long-term success in an increasingly digital world.

***Keywords**: Artificial Intelligence, Human Resource Management.*

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Impact of Option Strategies on Portfolio Volatility in Nifty Fifty

Ashwitha Shetty
IV Semester MBA
Alva's Institute of Engineering and Technology, Mijar, Moodbidri
ashwithashetty17307@gmail.com

ABSTRACT

This study examines the cost-benefit trade-offs of employing covered calls and cash-secured puts as option strategies to manage portfolio volatility within the Nifty Fifty index in the Indian market. The research focuses on how these conservative strategies can influence the risk-return profile of a portfolio, analyzing both the potential benefits in volatility reduction and the associated costs. Covered calls involve selling call options on assets already owned, allowing investors to generate additional income through premiums while capping the upside potential. This strategy is shown to reduce portfolio volatility, providing a buffer against moderate market declines, but it comes at the cost of forfeiting substantial gains if the market rallies significantly. On the other hand, cash-secured puts involve selling put options while holding enough cash to purchase the underlying assets if assigned. This strategy allows investors to potentially acquire assets at a lower price, generating income through premiums, and offering downside protection. However, it also entails the risk of being obligated to buy assets at above-market prices during severe market downturns. The findings suggest that both covered calls and cash-secured puts can be effective tools for managing portfolio volatility in the Nifty Fifty index, particularly for investors seeking steady income and lower risk. However, these benefits must be weighed against the potential opportunity costs and the need for careful selection of strike prices and expiration dates to align with individual investment goals and market conditions.

***Keywords**: Risk and return, Portfolio, Derivatives, Options*

Behavioural Finance And Investors Psychology

[1]Shreyas S Jain, [2] Shobith, [3] Jayaprakash
[123] 1st year MBA Students
[123] Mangalore Institute of Technology & Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1]shreyas123.jain@gmail.com, [2]shobithkotian39@gmail.com,
[3]jayaprakashvtl0606@gmail.com

ABSTRACT

The study explores the intersection of psychological factors and cognitive biases with investor behaviour and market dynamics, emphasizing how these elements contribute to market volatility and anomalies such as bubbles. Through a comprehensive review of existing literature and empirical evidence, the research highlights the significant impact of biases like overconfidence, herding, and loss aversion on financial decision-making. It underscores the importance of integrating behavioural insights into financial models to improve market predictions and outcomes. The findings suggest that psychological influences often lead to irrational behaviour, challenging traditional financial theories. The study advocates for the development of behavioural finance models that incorporate these psychological factors, the integration of such insights into financial services, and the design of regulatory frameworks to protect investors from these biases while promoting financial literacy. Additionally, the role of modern digital platforms in amplifying these biases and the need for future research to further understand and mitigate their effects are also emphasized.

Keywords*: Psychological Factors, Cognitive Biases, Market Volatility, Behavioural Finance, Investor Behaviour.*

Changing Role of Technology in Education From Chalkboard to Smart board: A Study With Reference to Perception of Teachers in Mangalore City

[1]Yashwini, [2]Prathijna K
[12] Lecturer in department of commerce and management
Srinivas University, Mangalore
[1]yashwini1292@gmail.com,[2]prathijna20@gmail.com

ABSTRACT

At present teaching profession has become one among the sectors where technological advancement has been affected in both positive as well as negative way. The way teachers use to prepare and exhibit the knowledge for the student writing on black board using chalk is completely been changed as the smartboard, PPT concepts arrived in modern days. The study mainly focuses on exploring the changing role of technology in education by comparing the traditional chalkboard method with modern smartboard method and also to know how this affects overall teaching methods. It also aims to understand teacher's attitude and perception towards adopting smartboard technologies and to analyse teachers' attitude towards technological advancement. The Quantitative research paper is mainly based on the primary data collected using survey method through Questionnaires and analysed using various business research tools. The results conclude that the usage of smartboard in teaching and educating students gives maximum learning satisfaction than the traditional method of chalkboard teaching. The Paper recommends all the educational institute to Adapt the modern methods of teaching students using smartboards and to enhance student learning outcomes.

***Keywords**: Smartboard, Chalkboard, Teaching, Technology, Education*

A Study on the Impact of Interest Rate Swaps on Corporate Finance

Akshari Shetty
IV Semester MBA
Post Graduate Department of Business Administration
Alvas Institute of Engineering and Technology
Moodbidri, Mangalore, Dakshina Kannada
aksharishetty28@gmail.com

ABSTRACT

This study examines the role of interest rate swaps (IRS) in corporate finance, focusing on their impact on financial health and risk management. By analysing secondary data, including financial statements and market data over three years, alongside a decade of profitability and revenue trends, the research explores how IRS usage influences key financial metrics like leverage, profitability, and return on equity (ROE). The study includes firms from manufacturing, utilities, retail, and financial sectors, offering a comprehensive view of IRS's effects across diverse industries. The findings indicate that companies using IRS tend to have higher leverage, leveraging these instruments for effective interest rate risk management, which supports increased debt capacity. The study also finds that larger firms and those with significant growth opportunities are more likely to employ IRS linking their usage to strategic financial planning and capital structure optimization. Regression analysis reveals a positive correlation between IRS usage and reduced earnings volatility, as well as a lower cost of debt, contributing to overall financial stability. However, the benefits of IRS vary by industry with capital-intensive sectors such as manufacturing and energy deriving more significant advantages in risk reduction and cost stabilization. Further, correlation analysis supports the relationship between the notional amount of IRS and improved financial performance particularly in ROE and profitability. The research concludes that IRS are vital tools in corporate finance, especially in managing risks and stabilizing finances in capital-intensive industries. The study emphasizes the importance of a robust regulatory framework and technological innovation in maximizing the benefits of IRS. Future research should expand the scope to include a more diverse range of companies and investigate how IRS can be integrated with other risk management strategies to enhance financial performance.

Keywords: *Swaps, Interest Rates, Hedging*

A Study on the Term Structure of Interest Rate and Bond Valuation

Rakshitha
IV Semester MBA
Alva's Institute of Engineering and Technology, Mijar, Moodbidri
rakshithakulal202@gmail.com

ABSTRACT

This study delves deeper into the discounted cash flow analysis of bond valuation and term structure in interest rates as it is essential to understand their interplay for a cohesive understanding of one specific market within fixed-income securities. The asset pricing model starts with the definition of bond valuation: the procedure for calculating a fair market price on a bond by estimating present values (time value) to future cash flows, which are inclusive of coupon payments and principal repayment. Interest rates term structure, also showed by yield curves are designed to show the relationship between bond yields and maturities. It helps us explain market conditions & sentiment. The paper highlights how term structure changes, including yield curve slope movements have a large effect on the value of bonds and related investment decisions. The trail of existing literature is used to show gaps in previous study and develop a structure for understanding the dynamic complexities between interest rate fluctuations as well as bond pricing. The technique used in the study is capable of evaluating which bond pricing model performs well and can predict future prices during interest rate movements. Investors, analysts, and policymakers in the financial market are likely to benefit from understanding these concepts given that our results seem to suggest they can influence decision-making. The paper concludes with recommendations for future research, suggesting that a deeper exploration of additional variables and broader market contexts could further enhance the understanding of bond valuation and interest rate dynamics. Overall, this research contributes to the existing body of knowledge in finance, providing valuable insights that can inform investment strategies and risk management practices in an ever-evolving economic landscape

Keywords: *Bond Valuation, Interest Rates, Bond Duration.*

The Use of Options for Market Sentiment Analysis: A Put-Call Ratio Approach

Prajna
IV Semester MBA
Alva's institute of engineering and technology, Mijar, Moodbidri
suvarnaprajnas@gmail.com

ABSTRACT

This paper investigates the effectiveness of the put-call ratio (PCR) as a tool for analyzing market sentiment, which is crucial for investors seeking to make informed decisions. The PCR is derived by dividing the volume of put options, which are typically purchased when investors expect the market to decline, by the volume of call options, which are bought when investors anticipate the market will rise. By understanding this ratio, investors can gauge the prevailing mood in the market—whether it is optimistic, pessimistic, or neutral. The objective of the study is to assess how well the PCR can serve as a reliable indicator of market sentiment and whether it can be used to predict future market movements. To achieve this, the research examines historical data, correlating changes in the PCR with actual market trends. This analysis helps determine whether shifts in the PCR can reliably signal impending market movements, thus providing investors with a tool to anticipate changes in market direction. The findings of the study indicate that the PCR is indeed a useful metric for assessing market sentiment. A high PCR generally reflects a bearish market sentiment, where investors expect prices to fall, while a low PCR suggests a bullish sentiment, where investors expect prices to rise. However, the study also acknowledges the limitations of the PCR. The ratio can sometimes be influenced by external factors that do not necessarily reflect genuine market sentiment, such as technical trading strategies or short-term market anomalies. These influences can distort the PCR, leading to potentially misleading signals.

Keywords: *Options Trading, Market Psychology, Analysis*

The Efficiency of Future Contract in Agricultural Commodity

Kavya
IV Semester MBA
Alva's Institute of Engineering and Technology, Mijar, Moodbidri
kavyabhandary05@gmail.com

ABSTRACT

The research paper investigates the efficiency of futures contracts in agricultural commodity markets, focusing on their role in reflecting supply and demand dynamics, mitigating price volatility, and facilitating risk management for various stakeholders, including producers, consumers, and investors. The study aims to analyse the effectiveness of futures contracts in achieving price discovery, reducing market distortions, and enhancing overall market stability within the context of agricultural trading. The motivation behind this research stems from the significant impact that futures contracts have on agricultural markets and the necessity for a comprehensive assessment of their efficiency and effectiveness. Despite their widespread use, there is a gap in understanding how these contracts manage price risk and promote fair price discovery mechanisms. By examining the performance of futures contracts over a historical period from 2012 to 2022, the study seeks to provide valuable insights into their influence on market dynamics and risk management practices.

The objectives of the study include analysing the pricing efficiency of forward contracts in agricultural commodity markets and assessing the relationship between spot prices and futures prices. The research employs quantitative analysis methods, such as the Granger Causality Test and correlation analysis, to evaluate the interactions between spot prices, futures prices, interest rates, and other relevant factors.

The findings of the study are expected to contribute to a better understanding of the role of futures markets in agricultural commodities, particularly in emerging economies. By employing robust econometric techniques, the research aims to reveal the long-term equilibrium relationships between spot and futures prices and the direction of causality between these markets. Ultimately, the study aspires to provide insights for traders, policymakers, and researchers, emphasizing the importance of futures markets in risk management and price stabilization, thereby enhancing the functionality and reliability of agricultural futures trading.

Keywords: *Derivatives, Agriculture, Trading*

The Use of Stock Options for Earnings announcements in Indian Companies

Bhoomika
4th semester MBA
Alva's Institute of Engineering and Technology Mijar, Moodbidri
bhoomikapoojary000@gmail.com

ABSTRACT

This study investigates the role of stock options in managing earnings risk among Indian companies, comparing their effectiveness with other financial strategies such as stock futures. The primary objective is to assess whether the use of stock options around earnings announcements can help mitigate volatility and provide a stable financial outlook for companies. By employing a mix of descriptive, correlation, and regression analyses, the study offers comprehensive insights into the dynamics of earnings management in the context of the Indian market.

The analysis revealed a significant decrease in volatility of stock options post-earnings announcements. This suggests that earnings announcements help reduce market uncertainty, stabilizing stock prices. The average volatility, standard deviation, and extreme values of volatility all showed a marked reduction after the announcements, indicating a more predictable and less volatile market environment.

The correlation analysis demonstrated a moderate positive relationship between earnings and the use of stock options and stock futures. This implies that as earnings fluctuate, companies tend to utilize these financial instruments to manage associated risks. However, a negative correlation between stock options and stock futures suggests that these instruments might be used in complementary ways to balance risk.

Regression results highlighted the significant role of stock options in earnings risk management. Companies using stock options showed a discernible impact on their earnings outcomes, underscoring the effectiveness of these instruments in mitigating risk compared to other strategies like stock futures, which showed less significant impact.

The findings indicate that stock options are a valuable tool for managing earnings risk in the Indian market. They help reduce volatility and provide a more stable financial environment post-earnings announcements. Companies should consider incorporating stock options into their risk management strategies, while also diversifying with other

financial instruments like stock futures to optimize their risk mitigation efforts. Regular evaluation and adaptation of these strategies to changing market conditions are crucial for maintaining financial stability and achieving long-term organizational goals.

Keywords: *Options, Stocks, Dividend Policy*

Influencer Marketing and Social Media Trends

[1]Shaman J, [2]B Adith Acharya,[3] Vineeth Poojary
[123] 1st Year MBA Students
[123] Mangalore Institute of Technology & Engineering, Moodbidri.
Dakshina Kannada, Karnataka, India
[1]Jshaman9@gmail.com, [2]adithacharya3@gmail.com,[3]vineethpoojary1013@gmail.com

ABSTRACT

Influencer marketing, which uses social media platforms to connect brands with customers through dependable and approachable voices, has grown to be a significant force in digital marketing. Influencers with large followings are vital to brands because they enable more authentic brand-customer interactions with niche audiences as customers appreciate authenticity more and more. Influencer marketing's effectiveness has increased thanks to recent social media trends. The focus has turned to short, dynamic material that immediately grabs viewers' attention due to the popularity of short-form video content on sites like TikTok and Instagram Reels. Furthermore, the emergence of micro and nano-influencers, who have tiny but extremely engaged fan bases, allows brands to run more economical and focused campaigns. Since influencers and companies are under more pressure to be honest in their communication and to publicly disclose their affiliations, transparency and authenticity are becoming increasingly crucial. This tendency is also associated with a rising emphasis on social concerns, as influencers who promote social justice, diversity, and sustainability become more well-known. Furthermore, social commerce is giving influencers new ways to promote direct sales by incorporating purchasing elements into social media platforms. The future of social media and influencer marketing will probably be shaped by this convergence, with a focus on community-focused, ethical, and individualized interaction, as these trends continue to develop.

Keywords: *Influencer Marketing, Micro-Influencers, Social Causes, Sustainability, Sustainability, Authenticity, Diversity, Ethical Marketing.*

Navigating the Global Landscape: The Impact of Globalization on Business Ethics and Corporate Social Responsibility

[1]Aishwarya Bhat Y, [2]Arpitha,[3]Varsha
[123] Department of Management Studies
[123] Mangalore Institute of Technology& Engineering, Moodabidri
Dakshina Kannada, India
[1]aishwaryabhat00@gmail.com,
[2]arpithaupadhya26@gmail.com,[3]devadigavarsha123@gmail.com

ABSTRACT

The rapid pace of globalization has significantly impacted business operations, leading to a profound transformation in the way companies approach business ethics and corporate social responsibility (CSR), as they navigate an increasingly interconnected and complex global landscape. It is necessary to take a closer look at how global forces are redefining the challenges and obligations that firms confront in upholding moral standards and making meaningful contributions to society in light of this transition. This study aims to investigate how globalization affects the relationship between businesses and their commitment to corporate social responsibility (CSR), with a particular focus on the problems that firms face as they adopt ethical practices and CSR efforts. In this study, to compare the means of [variable 1] and [variable 2] and ascertain whether there was a significant difference between them, we used the T-test statistical analysis. By understanding these factors, businesses can effectively navigate the global landscape and uphold their commitment to responsible practices, ultimately contributing to a more sustainable and ethical business environment.

Keywords: *Globalization, Business Ethics, Corporate Social Responsibility, Ethical Practice.*

Artificial Intelligence in Retail and E-Commerce

[1]Akshata Bhumar, [2] Preksha B Shetty
[12] 1st Year MBA
[12] Alvas MBA College, Moodabidre
[1]bhumb32@gmail.com

ABSTRACT

Artificial intelligence has revolutionized the retail and e-commerce industry by enabling purchasing recommendations, voice activated shopping assistance, personalized shopping experiences and facial recognition payment methods.AI advances towards improvement and innovation in retail and e-commerce businesses. However, it is still in developing or infancy stage. The analysis delves into the integration of learning algorithms in predicting consumer buying preferences and fostering more personalized shopping journey. As AI evaluates each and every aspect of consumer, there will be privacy concerns rising up, its implementation can lead to job displacement of many individuals. It will eventually diminish human intuition and creativity if relied on AI for decision making. Sometimes algorithmic bias can lead to discriminatory outcomes. However, AI is revolutionary because in aspects of retail operations, it personalizes recommendations, manages inventory to consumer service automation and fraud detection, The objective of this paper is to find how AI is going to impact the personal life of consumers by analysing the secondary data available.

Keywords *– AI, Impact, Retail, Life*

The Relationship Between Basis Price and the Future Price: A Cross Commodity Analysis

Thrupthi
IVth Semester MBA
Alva's Institute of Engineering and Technology, Mijar, Moodbidri
thrupthipoojary04@gmail.com

ABSTRACT

This analysis examines the relationship between the basis and future prices across various commodities, emphasizing its significance in market dynamics and investment strategies. The basis, defined as the difference between the spot price and the future price of a commodity, is a crucial indicator of future price movements. A positive basis, where the spot price is higher than the future price, typically signals an expected decline in prices. Conversely, a negative basis, where the future price is higher than the spot price, indicates an anticipated price increase. This predictive capacity of the basis arises from factors such as storage costs, convenience yields, and market expectations. Different commodities exhibit distinct basis-future price relationships due to unique market structures and supply-demand dynamics. For instance, agricultural, energy, metals commodities, which are often perishable, tend to have more volatile basis movements compared to non-perishable commodities like metals, where storage and transportation costs are more predictable. Market efficiency plays a crucial role in this relationship. In efficient markets, arbitrage opportunities quickly correct basis deviations, ensuring a stable and predictable relationship between basis and future prices. Less efficient markets may experience prolonged basis anomalies due to slower corrective mechanisms. External factors such as carrying cost, consumption trend, demand, distribution cost, exchange rates, inflation rates, production level, storage cost, supply level, transportation cost significantly impact both the basis and future prices. Adverse weather conditions can disrupt supply chains and widen the basis, while geopolitical tensions can cause sudden shifts in spot and future prices, affecting their correlation. Understanding the basis-future price relationship is essential for traders and investors to devise effective hedging strategies and optimize portfolio management. It helps in anticipating price movements, managing risks, and capitalizing on arbitrage opportunities. Cross-commodity analysis provides insights into the relative performance and risk profiles of different commodities, aiding in diversified investment strategies.

Keywords: *Basis Price, Future Price, Cross Commodity Analysis, Commodity Markets*

A Study on Working Capital Management Analysis With Special Reference to Switchgear and Control Technology Private Limited (SCTPL), Bangalore

[1]Abhiraj K V, [2]Dr Catherine Nirmala J
[1]4th Semester MBA, [2]Professor
[12]Post Graduate Department of Business Administration
Alvas Institute of Engineering and Technology
Moodbidri, Mangalore, Dakshina Kannada
abhirajkv2002@gmail.com

ABSTRACT

This study investigates the working capital management practices of Switchgear and Control Technology Private Limited (SCTPL) and their impact on the company's profitability and operational efficiency. By analysing financial data over a four-year period, the research aims to identify the optimal working capital levels that enhance firm value. The study employs various statistical and financial tools, including correlation and financial ratios, to assess the relationship between working capital components—such as inventory turnover, accounts receivable, and current ratios—and profitability metrics.

The findings reveal a positive relationship, indicating that efficient management of working capital is crucial for maximizing profitability. However, the study is limited to secondary data sources and a restricted time frame, which may affect the comprehensiveness of the results. The research contributes to the understanding of working capital dynamics in the manufacturing sector, providing valuable insights for practitioners and academics alike. Recommendations for improving working capital management practices at SCTPL are also discussed, emphasizing the need for strategic financial planning to enhance overall business performance.

Keywords: *Working Capital Management, Financial Analysis, Switchgear and Control Technology, Private Limited*

A Study on Inventory Management with Special Reference to ND Sons Engineers Private Limited

Deekshitha Rani K
IV Semester MBA
Alva's institute of engineering and technology, Mijar, Moodbidri
kdeekshitharani@gmail.com

ABSTRACT

This project report presents a comprehensive study on inventory management with a specific focus on ND Sons Engineers Pvt Ltd. The primary objective of the research is to analyse the existing inventory management practices within the company and identify areas for improvement. The study employs a mixed-methods approach, combining quantitative analysis through financial ratios and qualitative insights gathered from interviews with key stakeholders.

The findings reveal that while ND Sons Engineers Pvt Ltd has established inventory management protocols, there are inherent limitations that affect the efficiency and effectiveness of these practices. Factors such as unique business models, operational dynamics, and confidentiality concerns regarding proprietary information were identified as significant challenges. The research highlights the importance of tailored inventory management strategies that align with the company's specific needs and market conditions.

The report is structured into five chapters: an introduction to the study, a conceptual background and literature review, a detailed research design, analysis and interpretation of the data, and finally, findings, suggestions, and conclusions. The study concludes with actionable recommendations aimed at enhancing inventory management practices, thereby contributing to the overall operational efficiency of ND Sons Engineers Pvt Ltd. This research not only adds to the existing body of knowledge in the field of inventory management but also provides practical insights for practitioners in the industry.

Keywords: *Inventory Management, Nd Sons Engineers Pvt Ltd, Financial Ratios, Operational Efficiency, Business Model.*

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A Study on Impact of Cocoa and Arecanut Price Volatility with Reference to CAMPCO

Akshitha M
IV Semester MBA
Alva's institute of engineering and technology, Mijar, Moodbidri
akshithamkulal2001@gmail.com

ABSTRACT

This project report, "A Study on Impact of Cocoa and Arecanut Price Volatility with Reference to CAMPCO," investigates the challenges posed by price fluctuations in the cocoa and arecanut markets, focusing on the Central Arecanut and Cocoa Marketing and Processing Co-operative Limited (CAMPCO). The study evaluates historical price trends and their implications for the profitability and operational efficiency of CAMPCO. Utilizing a combination of financial data analysis, interviews with industry stakeholders, and a review of monthly price series over five years, the research reveals a consistent trend of rising prices for cocoa and arecanut. This volatility presents significant challenges in cost management and supply chain stability for CAMPCO. The findings highlight potential risks, including sourcing disruptions and production delays, which can adversely affect overall performance. The report concludes with recommendations for implementing dynamic pricing strategies, such as hedging and futures contracts, to mitigate risks associated with price fluctuations. By addressing these challenges, the study aims to provide valuable insights for CAMPCO and other stakeholders, ultimately contributing to improved operational resilience and profitability in CAMPCO amidst market uncertainties.

Keywords: *Price Volatility, Cocoa, Arecanut, CAMPCO*

 ISBN: 978-93-340-9369-8

A Study on Working Capital Management with Special Reference to ND Sons Engineers Private Limited

Divyashree
IV Semester MBA
Alva's institute of engineering and technology, Mijar, Moodbidri
divyapoojary123kandavara@gmail.com

ABSTRACT

This study explores the working capital management practices at ND Sons Engineers Private Limited, a prominent engineering firm in Mangalore, India. The research examines how the company manages its short-term assets and liabilities to maintain liquidity and ensure operational efficiency. Through a detailed analysis of financial statements and operational strategies, the study identifies key components of working capital, such as inventory management, accounts receivable, and accounts payable. The findings highlight the importance of balancing liquidity with profitability, emphasizing strategies that ND Sons Engineers employs to optimize cash flow, minimize risks, and enhance overall financial performance. The study also discusses the challenges faced by the company in managing working capital, including market competition and fluctuating raw material prices, and suggests measures for improving financial health and sustaining growth in a competitive industrial environment.

Keywords: *Working Capital Management, Financial Efficiency, ND Sons Engineers, Private Limited*

A Study on Challenges faced by Arecanut Growers, Growing in all the Season with reference to Dakshina Kannada District.

[1]Sharanya H V, [2]Sanjuktha Shetty
[12] 1st Year MBA
[12] Alvas MBA College Moodbidre
[1]sharanyahv26@gmail.com,[2] sanjukthashetty58@gmail.com

ABSTRACT

Arecanut cultivation is a vital cash crop in Dakshina Kannada, Employing thousands of farmers who face numerous challenges impacting their livelihoods. Labour shortages, inadequate equipment, poor plant quality, fluctuating market prices and declining plant growth due to soil nutrition deficiency are the some of the key issues. Additional challenges include transportation, storage and unpredictable weather condition. This study investigates this challenges, exploring seasonal variations and recommending strategies for addressing them. To address this challenges we aim to analyse and identify suggestions and also implement measures such as fair market pricing, access to quality equipment and awareness campaigns about government scheme for cultivators. Promote adoption of better technology and methods to enhance yields by this we can ensure a steady income for Arecanut growers fair price for their crops and sustainable growth cycle for Arecanut farms.

Keywords *: Challenges, Cultivation, Quality, Weather*

A Study on the Effect of Russia-Ukraine Conflict on Commodities with Special Reference to Edible Oil: An Event Study

[1]Ashwini ,[2] Dr. Dharmananda M
[1] Assistant Professor, MBA Department, Srinivas Institute of Technology, Mangaluru, Karnataka, India
[2]Associate Professor, MBA Department, Nitte Meenakshi Institute of Technology, Bengaluru, Karnataka, India
[1] ashwinik.mangalore@gmail.com

ABSTRACT

The Russia-Ukraine conflict, initiated in February 2022, has precipitated a global economic and geopolitical disruption. As significant exporters of agricultural commodities, including edible oils, Russia and Ukraine play a crucial role in global food security. This study aims to examine the impact of this conflict on global commodity prices, with a particular focus on edible oils.

Employing an event study methodology, this research quantifies the abnormal returns of edible oil futures prices around the onset of the conflict. By comparing the actual returns to expected returns, derived from a market model, the study assesses the extent to which the conflict influenced price movements. Additionally, the research investigates the persistence of these abnormal returns over time to understand the long-term implications of the conflict on the edible oil market.

This study contributes to the existing literature by providing empirical evidence on the short-term and long-term effects of a geopolitical crisis on a specific commodity sector. The findings are expected to offer valuable insights for policymakers, industry stakeholders, and financial market participants in developing strategies to mitigate the risks associated with supply chain disruptions and price volatility.

Keywords: *Precipitated, Geopolitics, Persistence, Disruptions, Volatility*

The Evolution of Cyber Threats: Investigating the Role of Artificial Intelligence

[1]Gowrish,[2] Pruthvik ,[3] Pranava Narayana B
[123] 1st year MBA Student
[123] Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1] gowrish122020@gmail.com,[2] pruthviknayak17@gmail.com
[3] pranavanarayana15@gmail.com

ABSTRACT

The landscape of cyber threats has evolved significantly over the past few decades, transforming from relatively simple viruses and worms to highly sophisticated, multi-faceted attacks that target a wide range of systems and infrastructures. Initially, cyber threats were largely the domain of individual hackers seeking notoriety or minor financial gain. However, with the advent of the internet and the proliferation of connected devices, cyber threats have grown in complexity and scale, driven by organized crime, nation-states, and hacktivist groups. These entities now deploy advanced techniques such as phishing, ransomware, and Distributed Denial of Service (DDoS) attacks, which are increasingly difficult to detect and mitigate. This evolution has prompted a corresponding growth in cybersecurity measures, leading to an arms race between attackers and defenders.Artificial Intelligence (AI) plays a pivotal role in the investigation and mitigation of these modern cyber threats. AI-driven tools and algorithms enable cybersecurity professionals to identify patterns and anomalies that may indicate a cyber-attack, often before it has fully materialized. Machine learning models can analyse vast amounts of data in real-time, improving the speed and accuracy of threat detection. Additionally, AI is utilized to automate responses to common threats, reducing the burden on human operators and allowing them to focus on more complex and strategic challenges. As cyber threats continue to evolve, the integration of AI into cybersecurity frameworks will be essential for maintaining robust defences against increasingly sophisticated adversaries.

Keywords: *Cyber Threats, Evolution, Artificial Intelligence, Cybersecurity, Threat Detection, Machine Learning, Automation.*

Green Business and Sustainable Urban Development

[1]Bharathi , [2]Chaithra
[1] Research Scholar, [2] Faculty,
[12]Institute of Management & Commerce, Srinivas University, Mangalore
[1]bharatischandra1@gmail.com,[2] kabbinalechaithra@gmail.com

ABSTRACT

This study explores the relationship between green business prospects and sustainable urban development, highlighting the critical role that businesses can play in and the benefits that come with the transition to more environmentally friendly cities. It looks at how public-private partnerships, cutting-edge technologies, and legal frameworks are key factors that propel sustainable urban initiatives. There are prospects for businesses to flourish in these rising countries as key industries including renewable energy, sustainable building, and smart cities are highlighted as having great development potential for green enterprises. The abstract also emphasizes how crucial it is for local governments, community organizations, and other organizations to be involved in the process of developing a cooperative strategy for urban sustainability. Through the integration of sustainable development principles into their strategy, firms can mitigate environmental risks, capture novel market opportunities, and enhance their competitive edge. With a look ahead to sustainable urban development, the conversation ends with a focus on the critical role that green firms will play in creating the cities of the future

Keywords: *Green Business, Sustainable Development, Urban Planning, Environmental Sustainability*

A Study on the Analysis of Revenue and Expenditure at RMX Concrete India, Baikampady, Mangalore.

Rakshith
4th Semester MBA
Post Graduate Department of Business Administration
Alvas Institute of Engineering and Technology
Mijar, Moodbidri, Mangalore, Dakshina Kannada
rakshithrsalian@gmail.com

ABSTRACT

This research paper explores the financial performance of RMX Concrete India's Baikampady plant by analysing its revenue and expenditure over a five-year period. As the construction industry in India grows rapidly, RMX Concrete India has become an important player in the Mangalore region. The study aims to provide a clear understanding of the financial health and operational efficiency of the Baikampady plant by examining historical revenue trends, expenditure patterns, and making future financial predictions. The research focuses on identifying the main sources of revenue and how they contribute to the company's overall financial performance. By looking at historical data, the study reveals patterns in revenue, such as growth trends and seasonal changes, and evaluates key expenditure areas like raw materials, labour, maintenance, and operational costs. The analysis also considers external factors, such as the availability of raw materials and labour market conditions, that affect spending. A key part of this research is to understand the relationship between revenue and expenditure to evaluate how well RMX Concrete India manages its costs. The study examines the connection between these financial elements, analysing profit margins and the factors that impact them. Based on this analysis, the research provides financial forecasts to predict future revenue and spending, helping the company plan strategically and make informed decisions. The findings of this research offer practical insights that RMX Concrete India can use to improve operations and increase profitability. The study provides strategic recommendations for boosting revenue and reducing costs, ensuring sustainable growth and maintaining competitiveness in the concrete construction industry. Although the focus is on the Baikampady plant, the results will be valuable to the company's management, supporting better financial decision-making and enhancing overall financial performance.

Keywords: *Revenue Analysis, Expenditure Analysis, RMX Concrete India, Financial Performance*

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A Study on Financial Performance Analysis of the Power Point Bag Industry, Karkala

Rakshith Shetty
IV Semester MBA
Alva's Institute of Engineering and Technology Mijar, Moodubidire
rakshithshetty1772@gmail.com

ABSTRACT

The bag industry, a significant contributor to the global economy, has witnessed substantial growth in recent years. However, the financial health and stability of this sector, particularly within the Power Point Bag segment (school bags, sports, and tourist bags), remain under-explored. This study aims to assess the financial performance of Power Point Bag companies by scrutinizing key financial metrics such as profitability, efficiency, and debt levels. By employing rigorous financial analysis techniques, the research seeks to understand how these companies manage their resources to optimize profit margins and ensure long-term sustainability. The findings of this study will provide valuable insights for industry stakeholders, including investors, managers, and policymakers, to make informed decisions regarding the performance and future trajectory of the Power Point Bag industry.

Keywords: *Financial Metrics, Financial Performance, Resource Management*

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Impact of Non-Performing Assets Special Reference to Shriram Finance

Dhanush
Alvas Institute of Engineering And Technology

ABSTRACT

This research investigates the impact of Non-Performing Assets (NPAs) on the financial performance of Shriram Finance, a prominent Non-Banking Financial Company (NBFC) in India. NPAs, which arise when borrowers default on their repayment obligations, pose significant challenges to financial institutions, affecting their profitability and operational efficiency. The study gather information from interviews with stakeholders, as well as secondary data from financial statements and industry reports, The findings reveal that rising NPAs have a detrimental effect on Shriram Finance's profitability, leading to increased provisioning requirements and a mismatch between assets and liabilities. The research also highlights the socio-economic factors contributing to the escalation of NPAs and evaluates the effectiveness of current asset management strategies employed by the company. Furthermore, the study assesses the regulatory frameworks in place and their role in mitigating NPA risks.

By analyzing the strategies implemented by Shriram Finance to manage NPAs, including enhanced credit appraisal processes and recovery mechanisms, this research aims to provide insights into best practices that can be adopted by other NBFCs facing similar challenges. The study concludes with recommendations for policy enhancements and community-level interventions to address the root causes of NPAs, ultimately contributing to the financial stability of the NBFC sector, This research underscores the importance of proactive NPA management and strategic planning in ensuring sustainable growth and financial health for institutions like Shriram Finance.

Keywords: *Non-Performing Assets (NPA), Financial Impact, Shriram Finance, Asset Management*

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The Impact of Macro Economic Indicators on the Indian Share Price Movement

Shraddha m
IV Semester MBA
Alva's Institute of Engineering and Technology, Mijar, Moodbidri
shraddhanagara@gmail.com

ABSTRACT

The paper provides the impact of various macroeconomic indicators on the movement of share prices in India. The study examines key variables such as interest rates, exchange rates, inflation, GDP growth, and foreign direct investment (FDI), and their influence on stock prices across different sectors over the past five years, as well as the Nifty50 index's performance over the past twenty decades. Interest rates are crucial as they directly affect investment decisions and stock valuations; lower rates typically boost stock prices, while higher rates have the opposite effect. Exchange rates also play a significant role in India's globalized economy, affecting the competitiveness and profitability of Indian companies, thereby influencing their stock prices. Inflation impacts consumer spending patterns and corporate profitability, making it a vital factor in stock price movements. GDP growth reflects the overall economic health and is often associated with positive sentiment in the stock market, indicating better corporate earnings potential and investment opportunities. FDI flows, indicating international investor confidence, are also considered in the study, as higher inflows usually correlate with rising stock prices, especially in sectors attractive to foreign investors. This analysis provides valuable insights for investors and policymakers, helping them make informed decisions and devise effective economic strategies.

Keywords: *Macroeconomic Indicators, Stock Prices, Interest Rates, Exchange Rates,Gdp Growth*

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EVs: Toward Sustainability With Potential Progress Roadblocks

Anudeep Jain
1 st year MBA Student
Mangalore Institute of Technology & Engineering, Moodabidiri.
Dakshina Kannada, Karnataka, India.
anudeepnp4@gmail.com

ABSTRACT

The global energy shift is driving growth in the electric vehicle (EV) market. The EV market is electrifying, with sales skyrocketing and market share growing exponentially with declining battery costs and increasing model options, the EV market is becoming increasingly competitive. This research aims to identify the future of the EV market's potential, challenges, and opportunities for business growth and geopolitical influence. The data is obtained from secondary sources. The findings reveal that, unlike the 20th century where oil control determined global power dynamics, the 21st century will be shaped by control over EV resources. The analysis shows that the total cost of ownership for EVs is significantly lower than traditional internal combustion engine vehicles, making them an attractive option for costconscious consumers. Governments and companies are investing heavily in EV technology, with funds allocated for EV development and infrastructure in the next five years. Ultimately, the success of EVs will depend on aligning customer desirability, market viability, and technological feasibility, paving the way for a revolutionary shift in the transportation sector.

Keywords: *Sustainability, EV-Market, Global Energy Shift, Future Potential*

Paving the Way for Entrepreneurs: A Bibliometric Study of Education, Intention, And Orientation.

[1]Poojari Nisha Gopal,[2] Dr Beena Dias,
[1]Research Scholar, [2]HOD
Department of management, St Aloysius (Deemed to be University), Mangaluru,
[1]poojarinisha7@gmail.com,[2] beenadias@staloysius.ac.in

ABSTRACT

A key element in promoting innovation and economic success is now recognized to be entrepreneurship education. Policy, curriculum development, and research goals must be informed by an understanding of the field's evolution, major themes, and prominent players. This study conducts a bibliometric analysis of academic literature published between 2004 and 2024 in order to provide a thorough overview of research on entrepreneurship education, intention and orientation. The goals of the study includes- to investigate the relationship between entrepreneurship education and entrepreneurial intention, as well as to unveil the intellectual structure of the area by using advanced bibliometric tools VosViewer to discover new trends. The results obtained from this study will enhance comprehension of the variables affecting entrepreneurial growth and guide further endeavours to establish a strong entrepreneurial environment.

Keywords: *Entrepreneurs, Entrepreneurship Intention, Orientation, Innovation, Education, Bibliometric.*

A Study on Online Shopping Behaviour of Indian Generation Z

[1]K R Vivek , [2]Kotian Likhith Sachindra
[12] 1st Year MBA
[12] Alva's MBA College, Moodubidri
[1]vivekraokr@gmail.com, [2]kotianlikhith96@gmail.com

ABSTRACT

***Purpose**:*

The main goal of this study is to uncover the complex online shopping habits of Generation Z, a group known for its technological expertise and significant market impact. As digital natives, their buying behaviours provide important insights into the changing world of e-commerce. The study aims to analyse the factors that influence Generation Z's online shopping choices and behaviours, helping businesses customize their e-commerce strategies for this crucial consumer group.

***Methodology** :*

This research combines insights from a wide range of secondary data sources, including existing research papers, digital libraries like Google Scholar and ResearchGate, and various reliable websites. The study gathers and examines data from different studies, ensuring a strong and multi-dimensional understanding of Generation Z's online shopping behaviour.

***Findings** :*

The findings show that digital usage is deeply embedded in Generation Z's lifestyle, significantly affecting their shopping habits. Online reviews are a crucial factor in their purchasing decisions, with the perception of quality playing an important role in choosing online retailers. The research emphasizes the need for e-retailers to build trust and ensure a smooth user experience to reduce perceived risks and increase the appeal of online shopping for Generation Z consumers.

***Paper Type** : Review of literature*

***Keywords**: Gen Z , Online Shopping Behaviour , Generational Purchase Behaviour*

Role of Employee Mental Health in Organization

Chinju K Thomas
Assistant professor
Srinivas institute of technology, Valachil, Mangalore
chinjuthomas460@gmail.com

ABSTRACT

The relationship between employee mental health and job performance has been one of the key concerns in workplace. Success at work is measured in many ways and mental health plays important role here, hitting productivity goals, achieving financial gains, and completing projects on time are all ways for a company to know it's doing well. When employees are mentally healthy, they are more likely to be productive and creative, and they may provide more valuable feedback. Mental health disorder in the workplace have increasingly been recognised as a problem in most countries, giving them high economic burden.

According to the State of Mental Health In America report, anxiety has reached the highest level since the Covid-19 pandemic began, and the depression rate has tripled. Depression has become one of America's most costly illnesses, to the tune of over $51 billion in absenteeism and lost productivity. Additionally, it costs over $26 billion in direct treatment costs each year. Even when the issues that cause depression in an employee are unrelated to work, their mental health affects their job performance.

A supportive and constructive workplace can make employees feel valued and accomplished, while a negative environment can be a major source of stress. Research has shown that "the physical environment of the workplace and organizational climate are some of the important aspects of employee well-being." The physical work environment has a significant impact on employee performance, job satisfaction, and overall well-being. A comfortable and supportive physical work environment can enhance employee productivity, focus, and motivation.

Decent work is good for mental health, while poor working environment including discrimination and inequality, excessive workload, low job control and job insecurity pose a risk to mental health. To protect and promote mental health at work, WHO recommends manager training for mental health, training for workers, interventions for individual. WHO recommends three interventions to support people with mental health conditions

gain, sustain and participate in work: reasonable accommodations, return-to-work programmes, supported employment initiatives.

Fostering a positive work environment and making mental health resources available can also help attracting top talents, it can often be difficult to identify practical ways to support your employees and enact meaningful ways to make a difference. Applied psychological research in work setting strongly supports five components that are essential to there efforts, training your managers to promote health and well-being, increase employees' options for where, when, and how they work, reexamine health insurance policies with a focus on employee mental health, listen to what your employees need and use their feedback to evolve, take a critical look at equity, diversity, and inclusion policies.

Keywords *: Employee Mental Health, Workplace Well-being, Organizational Productivity, Employee Engagement*

Financial Challenges For Start-ups

Bhoomika Patil
Student of PG, Department of Business Administration
Alva's Institute of Engineering and Technology, Moodbidri.
bhoomikapatil01@gmail.com

ABSTRACT

Launching a startup is an exciting venture, but navigating the financial tightrope can be daunting. This paper explores the key financial hurdles that startups face, from securing initial funding to managing cash flow and ensuring profitability. It highlights challenges like limited access to capital, competition for funds, unexpected expenses, and the need for strong financial management practices. By acknowledging these roadblocks, startups can develop effective strategies to secure funding, optimize spending, and achieve sustainable financial growth.

Startups require substantial capital investment at the outset. However, securing finance, especially for new businesses, remains a significant challenge. Entrepreneurs can explore various funding sources, including family, friends, venture capitalists, angel investors, and crowdfunding. Regardless of the source, creating a detailed financial plan is crucial. Clearly outline your capital needs and explain how you intend to utilize financial resources to generate future profits.

During the initial years, many startups generate little to no revenue. Some may reach their break-even point within a year, while others take longer. To overcome this challenge, startups must evaluate whether their business idea has the potential to generate profits in the future. Develop a concrete plan that outlines how the startup aims to generate revenue after 4-5 years of operation. While founders need not present detailed projections initially, basic assumptions about fund usage and future monthly revenue are essential.

I conducted a study on the financial problems faced by new start-ups and young entrepreneurs in India. The aim was to understand the challenges they encounter when it comes to securing funding and managing their finances. Through interviews and surveys, I gathered valuable insights into the common financial hurdles faced by these entrepreneurs. Some of the key findings include the difficulty in accessing traditional sources of funding such as bank loans, high interest rates, lack of collateral, and limited credit history.

Additionally, the study highlighted the importance of financial literacy and the need for better access to financial education and resources for young entrepreneurs. Many of them

expressed the need for mentorship and guidance in financial planning, budgeting, and investment strategies. The research paper provides recommendations for addressing these challenges, including the promotion of alternative funding options like venture capital, angel investors, and crowdfunding platforms. It also emphasizes the role of government initiatives and policies in creating a supportive ecosystem for start-ups and young entrepreneurs.

Overall, this study sheds light on the financial problems faced by new start-ups and young entrepreneurs in India and offers insights and recommendations to help them navigate these challenges more effectively.

Keywords: *Start-up Financing, Cash Flow Management, Investment Challenges, Financial Sustainability*

A Study on Impact of Inventory Management Practices on Financial Performance of Switchgear and Control Technics Pvt. Ltd.

[1]Poojary Vinisha Vishwanath , [2]Princy Francis
[1] 4th Semester MBA,[2] Assistant Professor
[12] Post Graduate Department of Business Administration
Alvas Institute of Engineering and Technology, Mangalore, Dakshina Kannada
[1] vinisha.poojary1708@gmail.com ,[2]princyfrancis10@gmail.com

ABSTRACT

The research paper explores how inventory management practices influence the financial performance of Switchgear and Control Technics Pvt. Ltd. (SCTPL). Effective inventory management is crucial for ensuring smooth business operations, minimizing costs, and meeting customer demands promptly. This study examines SCTPL's current inventory strategies, including forecasting, ordering, and maintaining safety stock levels, to determine their impact on key financial metrics such as inventory turnover ratio, return on investment, and cash flow.

The research highlights that inventory is a critical component of a company's assets, significantly affecting its working capital and overall profitability. Poorly managed inventory can lead to excessive costs, reduced cash flow, and diminished financial performance. On the other hand, optimized inventory practices can lead to cost savings, improved cash flow, and better financial outcomes.

Through a detailed analysis of SCTPL's existing inventory management processes, the study identifies areas where improvements can be made. Recommendations are provided to enhance inventory control, reduce costs, and improve the company's financial health. While the research focuses on SCTPL's internal inventory practices and their direct financial implications, it does not consider broader economic factors or external influences.

The findings of this study aim to guide SCTPL in adopting more efficient inventory management strategies that align with its financial goals, ultimately contributing to the company's sustained growth and profitability.

Keywords: *Inventory Management, Financial Performance, Switchgear and Control Technics, Operational Efficiency*

Smart Wallets: The Evolution of Machine Learning in Finance

Abhishek S A
First Year MBA
Department of Management Studies
Mangalore Institute of Technology and Engineering, Mangaluru
abhishekskp147@gmail.com

ABSTRACT

The evolution of machine learning in finance has marked a transformative shift in how financial institutions operate, characterized by the adoption of complex algorithms capable of analysing vast datasets to identify patterns and make predictions. The introduction of machine learning has greatly altered the financial sector, leading to the emergence of "Smart Wallets." The integration of machine learning into smart wallets has further optimized their functionality. Smart wallets are beneficial tools for managing money every day because they provide personalized financial information and prevent unwanted access, which is enabled by this feature. The fusion of cutting-edge technology and conventional financial instruments is best shown by smart wallets. Their blend of structure, safety, and insights from machine learning represents a dramatic change in the way people manage their money and opens the door for more creative solutions in the banking industry. The purpose of this paper was to examine the advancement of machine learning technologies in finance and the effects they have on both individual consumers and financial institutions. By reviewing secondary data from academic journals, industry reports, the research compiles information on the incorporation of machine learning into financial services, such as predictive analytics, fraud detection, and customer segmentation enabling accurate forecasting of market trends and personal financial behaviour. The results indicate that machine learning applications result in increased operational efficiency, better financial forecasting accuracy, and enhanced customer engagement. In summary, the advancement of machine learning in finance supports the concept of Smart Wallets, which not only simplify transactions but also provide tailored financial management insights.

Keywords: *Machine Learning, Banking Technology, Smart Wallets, Fraud Detection, Financial Forecasting*

Impact of Social-Emotional Learning (SEL) Assessment on Educational Planning and Curriculum Development

[1] Dr. S.Sharmila ,[2] Dr. R.Nandhakumar
[12] Assistant Professor
[12] Department of Computer Science NGM College, Pollachi-642 001, India.
[1]mcasharmi2007@gmail.com, [2]nkumarram@gmail.com

ABSTRACT

This study explores the impact of Social-Emotional Learning (SEL) assessments on educational planning and curriculum development in higher education. As SEL competencies—such as selfawareness, self-management, social awareness, relationship skills, and responsible decisionmaking—become increasingly recognized for their role in student success, understanding how assessment data can shape educational strategies is crucial. By analyzing SEL assessment results from college students, this research highlights trends in emotional and social competencies, identifies gaps, and examines how these insights can be used to inform and enhance curriculum design. The findings demonstrate the potential of SEL assessment to create more responsive and supportive educational environments, ultimately fostering both academic achievement and holistic student development. Key findings demonstrate the potential of SEL assessment to create more responsive and supportive educational environments by integrating emotional intelligence and interpersonal skills into academic programs. The study also explores how SEL data can guide the development of targeted interventions, support services, and co-curricular activities that address specific student needs.

Keywords: *Social-Emotional Learning (Sel), Sel Assessments, Educational Planning, Curriculum Development, Student Competencies, Data-Driven Approach*

The Relationship between Global Commodity Prices and Indian Inflation

Srikanth N
Alvas Institute Of Engineering And Technology
sriki24748@gmail.com

ABSTRACT

This research investigates the intricate relationship between global commodity prices and inflation in India, a nation heavily reliant on imports for essential commodities such as crude oil, metals, and agricultural products. The study aims to analyze the extent to which fluctuations in global commodity prices influence domestic inflation rates, identifying specific commodities that exert significant impacts. Utilizing secondary data from reputable sources, the research employs various statistical methods, including Granger causality tests, descriptive statistics, and correlation analysis, to explore both short-term and long-term effects. Findings reveal that certain commodities, particularly Corn and Exchange Rate, demonstrate statistically significant relationships with the Consumer Price Index (CPI), with a notable increase in CPI associated with rising Corn prices and a decrease linked to Exchange Rate fluctuations. The coefficient of determination indicates that approximately 91.99% of the variation in CPI can be explained by the independent variables analyzed, underscoring the strong explanatory power of the model.

However, the study acknowledges limitations, including reliance on secondary data and potential biases in statistical methods, which may affect the validity of the results. The research highlights the need for policymakers to understand the transmission mechanisms through which global price changes affect domestic inflation and suggests actionable policy measures to mitigate adverse effects on price stability and economic growth. Ultimately, this study contributes to a deeper understanding of the complex dynamics between global commodity markets and inflation in India, providing valuable insights for economists, policymakers, and market participants.

Keywords: *Global Commodity Prices, Indian Inflation, Economic Impact, Price Correlation*

The Impact of E-Learning Platforms on the Development of SEL competencies in Higher Education

[1] Dr. S.Sharmila, [2] M. Dhavapriya
[1 2]Assistant Professor
[12]Department of Computer Science
[12]NGM College, Pollachi-642 001, India.
[1]sharmila@ngmc.org [2] dhavapriya@ngmc.org

ABSTRACT

The quick development of e-learning platforms has changed the face of education, especially for those pursuing higher education. This study looks at how these digital technologies affect college students' growth in Social and Emotional Learning (SEL) abilities. The research illustrates how e-learning environments may support SEL by offering creative methods to engage students in self-awareness, emotional regulation, interpersonal skills, and responsible decision-making. It does this by fusing theoretical frameworks and practical investigations. The study reveals both the benefits and drawbacks of promoting SEL by using case analyses and questionnaires from different institutions that have implemented e-learning platforms. Important conclusions show that although e-learning platforms provide adaptable and scalable SEL integration options, their efficacy is contingent upon the deliberate planning of activities and the accessibility of supplementary materials. In order to further assist SEL development, the study ends with suggestions for improving e-learning practices. These ideas offer methods for educators and institutions to maximize the use of digital resources in fostering holistic student growth.

Keywords: *E-Learning Platforms, Social-Emotional Learning (SEL), Higher Education, Digital Tools, Interactive Learning, SEL Integration*

A Study on Consumer Perception towards Online Shopping of Amazon with Reference to Dakshina Kannada District

[1] Shantanu B Poojary, [2]Vighnesh
[12] 1st Year MBA
[12] Alva's institute of engineering and technology, Mijar, Moodbidri, D.K.
[1] Shants754@gmail.com,[2] vighneshjas4@gmail.com

ABSTRACT

This paper is designed to study the perception of the consumer about online shopping, to know the optimistic and pessimistic influence of online shopping on the consumers and to study the consumer behaviour towards online shopping. For the study, we have selected 50 respondents who are familiar with Amazon. It particularly focused on the problems or the benefits availed from online shopping. A common problem faced by the customer while shopping online is quality service. The biggest problem while buying things online is that there is no guarantee of product quality, digital payments failure, unclear returns and guarantee policies, cyber security or more precisely the lack of it is a major problem on the internet today All levels of customers were surveyed by using a questionnaire, and the level of satisfaction or dissatisfaction from the online shopping was studied. Finally, the detailed information about the benefits they had received was also considered. A small attempt has been made to understand the benefits of online shopping, and also the limitation of online shopping was studied concerning AMAZON.

***Keywords**: Cybercrime, Privacy issues, Perception.*

The Impact of Social Media on MBA Students

[1]K Swathi Shenoy,[2] Vaishnavi
[12] 1 st Year MBA
[12] Alva's MBA College Alva's MBA College Moodbidri
[1]swathishenoy2003@gmail.com

ABSTRACT

In the digital age, social media has become a pervasive influence across various aspects of life, including education and professional development. As social media sites continue to grow in popularity, it is our premise that technology is a vital part in today's student success equation. For MBA students, who are navigating a complex landscape of academic demands and career aspirations, social media can play a significant role in shaping their experiences. This study examines how social media impacts MBA students by analyzing its effects on academic performance, social interactions, and career progression. This research employs a mixed-methods approach, combining quantitative surveys and qualitative interviews to assess how social media usage affects students' study habits, networking opportunities, and overall academic engagement. Findings reveal that while social media provides valuable resources for collaboration and professional networking, it also presents challenges such as distractions and potential impacts on academic performance. The study underscores the need for balanced social media use strategies to enhance positive outcomes while mitigating negative effects, offering insights into how MBA programs can support students in leveraging social media effectively for their academic and career goals. By employing a mixedmethods approach, the research aims to provide a comprehensive understanding of how social media is integrated into the lives of MBA students and to identify strategies for maximizing its benefits while mitigating potential drawbacks.

Keywords: *Social Networking Sites, Academic Performance, Social Media, MBA Students*

Effects of Bad Habits on academic Performances of Youth

[1] Ajith, [2] Deepak P Nayak
[12] 1st Year MBA, [12] Alvas Institute of Engineering and Technology Mijar
[1]ajithnaik7421@gmail.com,[2]dpknyk132322@gmail.com.

ABSTRACT

This research paper explores the detrimental impact of various bad habits on the academic performance of youth, with a specific focus on the context of Dakshina Kannada District. For this study we have collected more than 50 responses. In an increasingly competitive and digitalized world, students are prone to habits that negatively influence their educational outcomes. The study states key factors such as substance abuse (including alcoholism and drug addiction), excessive use of social media, poor sleep patterns, skipping meals. Through a combination of surveys, this research identifies a strong correlation between these behaviours and declining academic performance. It was found that students engaged in these habits often exhibit lower grades, reduced concentration, and diminished cognitive abilities. Additionally, the paper discusses the broader societal implications, including the role of peer pressure, parental influence, and the lack of effective intervention programs. The findings underscore the urgent need for awareness campaigns, better support systems in educational institutions, and policies aimed at curbing these habits among the youth to improve their academic and overall well being

Keywords: *Bad Habits, Academic Performance, Youth, Educational Outcomes*

Rolling for Survival: An Analysis of the Socio-Economic and Health Conditions of Beedi Workers

[1]Dr. Parameshwara, [2]Dr. Bhagyalaxmi M [3]Apeksha Bhandary.
[1]Assosiate Professor, , [2]Assistant Professor, 3Lecturer
[123] Dept. of Commerce
[1] Mangalore University, Mangalagangothri, [23]Govinda Dasa College, Suratkal
Mangaluru, India,
[2]bhagya.lakshmi799@gmail.com, 3bhandaryapeksha22@gmail.com,

ABSTRACT

Beedi workers are employed in the production of beedis, a traditional Indian cigarette made by rolling tobacco in a tendu or temburni leaf. Beedies were invented after Indian tobacco cultivation began in the late 17th century. Tobacco workers were the first to create them by taking leftover tobacco and rolling it in leaves. In the 1930s, the commercial Indian beedi sector grew rapidly, aided in part by Gandhi's support for Indian products and industry as well as the development of tobacco cultivation at the time. The work is typically home-based, allowing workers to balance their domestic responsibilities but also making them vulnerable to exploitation. Health issues are prevalent among beedi workers due to prolonged exposure to tobacco dust, repetitive strain from hand-rolling, and the lack of protective measures. Respiratory problems, tuberculosis, and musculoskeletal disorders are common. Despite these challenges, the beedi industry remains a significant source of employment for many, particularly in rural areas.

Keywords: *Beedi Workers, Tobacco, Socio-Economic, Health Conditions.*

A Study on Role of Green Marketing in shaping Sustainable Consumer Behaviour and Societal Well-Being with Reference to Mangalore

[1] Dhanya Poojary ,[2] Prithi Hegde
[12] 1st year MBA
[12]Alvas MBA college, Moodbidre
[1] ddhanya 264@gmail.com,[2] prithihegde72@gmail.com

ABSTRACT

Purpose

The concept of sustainability has gained significant attention in recent years due to the growing concerns about environmental degradation and the need for responsible resource management. As societies recognise the urgent need to address this challenges, there has been a remarkable shift in consumer behaviour towards more environmental friendly choices.

Green marketing refers to the strategic use of marketing techniques and practices to promote products, services and business practices that are environmental friendly and socially responsible. It's primary objective is to educate and inform consumers about the environmental impact of that choices, encouraging them to make inform decisions that align with sustainability goals.

Green marketing place a crucial role in shaping societal welding by promoting responsible consumption patterns. As consumers increasingly demand sustainable products businesses face growing pressure to adopt environmental friendly policies and practices. Green marketing campaigns create awareness about corporate social responsibility and encourage businesses to integrated sustainability into their core values and operations.

Paper Type : Review of literature

Keywords : *Sustainability, Green marketing, Consumers*

A Study on Impact of E- Recruitment in HRM Effectiveness at Quess Corp Ltd., Bangalore

[1] Gayathri K Nambiar,[2] Immaculate Mary
[1] MBA Student, [2]Assistant Professor
[12] KVG College of Engineering, Sullia, Dakshina Kannada, Karnataka
[1] Gayathriknambiar001@gmail.com, [2] deeptiimma@gmail.com

ABSTRACT

Recruitment is a crucial part of Human Resource Management (HRM) as it builds the foundation of an organization's workforce. E-recruitment, or online recruitment, uses technology and the internet to attract, evaluate, and select candidates for job openings. This study examines the impact of e-recruitment on HRM effectiveness at Quess Corp Ltd, Bangalore. With traditional hiring methods being slow and costly, e-recruitment offers a modern, efficient alternative. The research aims to assess the organization's current erecruitment strategies, identify challenges, and analyse how technology improves recruitment efficiency and accuracy. Using a mixed-methods approach, including interviews with HR professionals and analysis of recruitment data, this study seeks to provide a comprehensive understanding of e-recruitment's effectiveness at Quess Corp Ltd, offering actionable insights and recommendations to optimize HR practices and enhance recruitment outcomes.

Keywords: *E-Recruitment, Technology, Effectiveness, Potential Candidates*

Study on New Textile Market Trends on Youth

[1] Harshith Kumar, [2]Tilak
[12] 1st Year MBA
[12] Alvas Institute of Engineering and Technology, Mijar, Moodabidri, D.K
[1]sonupoojaryy@gmail.com, [2]shettythilak02@gmail.com

ABSTRACT

This study investigates the latest textile market trends among young consumers, examining their preferences, attitudes, and behaviours towards fashion and textiles. Through a mixed-methods approach, combining surveys, interviews, and focus groups, this research identifies key drivers of youth textile consumption, including sustainability, technology, and social media influence. The findings provide insights into emerging trends, opportunities, and challenges in the textile industry, enabling stakeholders to develop targeted strategies and products that cater to the evolving needs and desires of young consumers. This study looks at what young people like and don't like about textiles and fashion. We asked them about their thoughts and habits when it comes to buying and wearing clothes. We found out what matters most to them, like being kind to the planet and using technology. We also saw how social media affects their choices. This helps us understand what's next for the textile industry and how to make products that young people will love.

Keywords: *Young Consumers, Textile Market Trends, Consumers Preferences, Textile Industry.*

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A Study on Impact of Artificial Intelligence on Advertising Industry

[1] Sheeka,[2] Nishmitha Shetty
[1 2]1 st year MBA
[1 2]Alvas Institute of Engineering and Technology, Mijar
[1] shettysheeka@gmail.com,[2] nishmithashetty180@gmail.com

ABSTRACT

Artificial intelligence (AI) enables computers to perform tasks and activities that are currently carried out by people in the workplace and across society. AI is gaining popularity due to its application in different industries such as HR, education, and retail to name a few, that are helping humans resolve complex issues and develop credible solutions. With artificial intelligence evolving every day, the advertising industry is also growing. This study focuses on user engagement, personalization, and the influence of AI on purchasing decisions, the study explores the dynamic intersection of technology and marketing strategies. The advertising industry's relationship with artificial intelligence is a mix of excitement and worry. With advances in AI, companies can target ads more accurately and create more engaging content. In comparison to conventional advertisement creation, AI offers several significant benefits, as shown in this research. As artificial intelligence permeated every link in the advertising industry, it plays a positive role in the development of industry, is able to replace inefficient manual labor and improves the overall efficiency of industry. But market still needs to be aware of the disadvantages of artificial intelligence, considering some of the moral risks and privacy concerns. There is a crisis in advertising due to AI, driven by high prices, economic pressure, job reductions, and machines taking over certain tasks. People who make ads are worried about AI's power to copy things and trick people. They also worry about who owns ideas made by AI and how it's being used. Some groups are trying to deal with these concerns.

Keywords: *Artificial Intelligence, Advertising Industry, User Engagement, Privacy Concerns*

 ISBN: 978-93-340-9369-8

A Study on Combatting Social Isolation among Seniors due to the Intergenerational gap between the Young and Old.

[1] Oswin Peter Lewis, Vaishnavi B Shetty
[12] 1st year MBA
[12] Alva's institute of engineering and technology, Mijar, Moodbidri, D.K.
[1]oswinlewis22@gmail.com, [2] vaishnavishettyaishu@gmail.com

ABSTRACT

This study investigates the complex relationship between the intergenerational gap and social isolation among seniors. Through a literature review and survey analysis, the study explores the factors contributing to social isolation, its impact on seniors' well-being, and potential strategies to address this issue.

Key findings reveal that social isolation is a prevalent concern among seniors, primarily driven by limited access to technology, lack of mobility, loss of loved ones, and feeling disconnected from younger generations. The intergenerational gap exacerbates this isolation, as differences in life experiences, values, and communication styles create barriers to connection.

The study highlights the importance of bridging the intergenerational gap to combat social isolation. Effective strategies include fostering intergenerational interactions through social events, volunteer opportunities, and technology training programs. It also emphasizes the need for government support and community involvement to address this pressing societal issue.

Keywords: *Intergenerational interactions, Social isolation*

 ISBN: 978-93-340-9369-8

The Rise of “Finfluencers”: Analysing the Impact of Financial Influencers on Investment Behaviour

Purushothama
Assistant Professor of Commerce
Dr.G.S.GWFGC Ajjarakad Udupi
puru2530@gmail.com

ABSTRACT

The emergence of social media has given rise to a new category of influencers—financial influencers, or "finfluencers"—who have rapidly gained prominence by providing investment advice, market analysis, and financial education to millions of followers. This study examines the influence of finfluencers on investment behaviour, focusing on how their recommendations shape decision-making among retail investors. Through a mixed-methods approach combining surveys, social media analysis, and case studies, this paper explores the demographic profiles of finfluencer audiences, their motivations for following online financial advice, and the extent to which these influencers drive trading activity and market trends.

The research reveals that while finfluencers can enhance financial literacy, they also carry risks, including the spread of misinformation and the potential for conflicts of interest. Additionally, the study discusses the regulatory landscape and the challenges of overseeing financial advice in the decentralized space of social media. By analysing the positive and negative effects of finfluencers, this paper offers critical insights into the evolving dynamics of modern investing and highlights the need for both investors and policymakers to navigate this new terrain with caution.

Keywords: *Finfluencers, Investment Behaviour, Financial Influence, Social Media Impact*

A Study on Impact of FDI and Its Impact on Indian Stock Market Specific to Sensex

Rajendra Prasad K B
II[nd] year MBA
Alva's Institute of Engineering and Technology Mijar, Moodubidire
harishraj6069@gmail.com

ABSTRACT

The study investigates the relationship between Foreign Direct Investment (FDI) inflows and the performance of major Indian stock market indices, specifically the SENSEX and NIFTY 50. It aims to analyze how fluctuations in FDI impact stock prices, thereby influencing overall market performance. Utilizing data from 2014 to 2023, the research analyses statistical methods such as correlation analysis and co-integration tests to establish connections between FDI and stock market indices. The findings indicate a positive correlation, suggesting that increased FDI leads to a stronger stock market performance in India. As FDI inflows increases, both SENSEX and NIFTY 50 tend to experience upward trends, reflecting enhanced investor confidence and economic growth. The study highlights that certain sector, which includes retail, automotive, and manufacturing, benefitted significantly from FDI, resulting in increased stock prices within these industries. This research underscores the importance of developing a supportive environment for foreign investment, advocating for clear regulations to attract more FDI, which could further strengthen the stock market and the broader economy. The insights gained from this study are valuable for policymakers and investors, aiding in informed decision-making in India's dynamic economic landscape.

***Keywords**: Sensex, Nifty 50, FDI, Growth, Stock Market.*

A Study on Effectiveness of Internet Banking in Rural Areas

[1] **Rathan Kumar,[2] Pranay Shetty**
[12] 1st Year MBA
[12] Alva's MBA College, Moodbidri
[1] rathankumar621@gmail.com, [2] spranay488@gmail.com.

ABSTRACT

The effectiveness of internet banking in rural areas is a critical area of study, given the increasing push towards digital financial inclusion. This research paper explores the adoption, usage, and impact of internet banking among rural populations. It examines the challenges faced by rural users, including digital literacy, infrastructure limitations, and trust issues, while also highlighting the potential benefits, such as increased financial accessibility, convenience, and economic empowerment. The study aims to identify the factors influencing the effectiveness of internet banking in rural regions and provides recommendations for enhancing its adoption and usability. Through a combination of qualitative and quantitative analysis, this research contributes to the understanding of how internet banking can bridge the financial divide between urban and rural populations, ultimately fostering greater financial inclusion and economic development in rural areas.

Keywords: *Inter Banking, Financial Inclusion, Rural Areas, Digital Literacy, Security Concern.*

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An Analysis of Savings and Investment Pattern of College Teachers with reference to Mangalore City

[1] Preethi, [2]Sameeksha K.V
[12] Assistant Professor
[12] P.A First Grade College, Mangalore
[1] Preethi94shetty@gmail.com, [2]sameekshanaik.kv@gmail.com

ABSTRACT

Savings involves sacrificing the current consumption in order to enhance the future living standard and meet future needs. Investment, on the other hand, is the process of using saved funds to acquire assets with the expectation of earning return. However not all savers are investors. The growth of an economy relies on its financial system and the rate at which new capital is formed, which can be accomplished by mobilizing savings and following an investment strategy. .The main objective of the Study are to know awareness level and their preferred investment option among college teachers, to know the savings and investment pattern of the college teacher and to evaluate the level of satisfaction with their investment decision. This study relies on primary data collected through questionnaires distributed using the convenience sampling method. With numerous investment opportunities available today, this research aims to analyze the savings and investment patterns of college teachers and examine how they manage their investments.

***Keywords**: Saving, Investment, Income, College Teachers*

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Impact of Social Media on Consumer Behaviour

[1] Shrajan Kanchan,[2] Sankiran
[12] 1st Year MBA
[12] Alvas MBA College, Moodbidre
[1] shrajankanchan19@gmail.com,[2] sankiranthunder@gmail.com

ABSTRACT

The rapid evolution of social media platforms has drastically transformed consumer behaviour, providing a new framework for how people discover, evaluate, and choose products or services. Through the proliferation of platforms like Instagram, Facebook, and Twitter, consumers are increasingly influenced by peer recommendations, online reviews, and social media influencers. This dynamic engagement has allowed brands to foster more authentic connections with their audience, utilizing targeted advertising and personalized content to guide decision-making processes. Social media not only shapes consumer perceptions but also drives spontaneous purchasing decisions, often based on trends and viral content. The integration of real-time interactions has made consumers more informed and empowered, disrupting traditional marketing models. Furthermore, mobile technology's continuous rise has intensified social media's influence, ensuring that consumer behaviour is more interconnected with digital channels than ever before. This profound shift emphasizes the growing need for businesses to adapt to the fast-paced nature of social media to stay competitive in the digital marketplace.

Keywords : *Consumer Behaviour, Social Media Impact , Consumer Perception, Consumer Engagement*

Level of Customer Satisfaction with Respect to Commercial Banks.

[1] Sushan S Shetty ,[2] Channveer ,[3] Jithesh R D
[123]PG Department of Business Administration
A.I.E.T Moodbidri, Mijar
[1]sushanshtt@gmail.com, [2]channuchirade@gmail.com, [3]jitheshdevadigaa1688@gmail.com

ABSTRACT

The study utilizes a modified version of the SERVQUAL model, which includes five dimensions of service quality: Reliability, Responsiveness, Empathy, Assurance, and Tangibles. Customer satisfaction is measured using a nine-item scale adapted from previous research. The research involved distributing 260 questionnaires randomly to customers of thirteen commercial banks in Irbid, Jordan. Multiple regression analysis was employed to assess the impact of service quality on customer satisfaction. The findings indicate that service quality is a crucial factor influencing customer satisfaction in Jordanian commercial banks. The study emphasizes the importance for bank managers to focus on improving service quality to enhance customer satisfaction, loyalty, and retention rates.

Keywords: *Service quality, Customer Satisfaction, Commercial Banks, Customer Trust, Customer Retention*

A Study of Digital Marketing in Promoting Coastal Line as a Tourist Destinations with Reference to Udupi District

[1] Veena Vasudev Bhat, [2] Deepa
[12] Assistant Professor & HOD, Assistant Professor
[12] Department of Commerce
[12] Dr. B. B. Hegde First Grade College, Kundapura
[1] veenabhat@bbhegdecollege.com, [2] deepapoojhary1994@gmail.com

ABSTRACT

In 2023, Karnataka's tourism sector achieved a notable milestone after covid pandemic yet the Udupi District, with its stunning coastal landscapes, rich cultural heritage, and distinctive culinary offerings, remains relatively underexplored on the global tourism stage. Positioned along the Arabian Sea, Udupi is a hidden gem with the potential to captivate a broader audience.

Digital marketing has emerged as a crucial tool in the modern tourism industry, offering extensive reach and engagement opportunities that can significantly enhance a destination's visibility. For Udupi, the strategic use of digital platforms including social media, search engine optimization (SEO), and content marketing can play a transformative role in highlighting its unique attractions and drawing global travelers.

This research investigates how digital marketing can elevate Udupi District's profile as a premier tourist destination. The study involves a comprehensive evaluation of current digital marketing strategies to assess their effectiveness in promoting Udupi's coastal attractions. It also aims to uncover barriers that may impede the success of these strategies, such as limitations in digital infrastructure or content quality. Additionally, the research explores how digital channels influence tourist perceptions of Udupi, examining online content, social media interactions, and search engine presence to understand how potential visitors view the destination. By addressing the identified barriers and leveraging the strengths of digital tools, Udupi can enhance its engagement with potential travelers and improve its global visibility.

The study seeks to offer valuable insights that can help Udupi shine as a prominent

destination, attracting travelers from near and far to experience its boundless beauty and hospitality. Through this exploration, the study contributes to the broader understanding of how digital marketing can shape tourism success and position Udupi as a leading coastal destination on the global stage.

Keywords: *Karnataka Tourism, Udupi District, Digital Marketing, Tourism Promotion, Social Media Marketing, Search Engine Optimization (SEO), Content Marketing, Tourist Perceptions, Coastal Tourism, Digital Strategy Optimization, Tourism Development*

A Study on the Fintech Wave: How Innovation is Overhauling Traditional Banking?

Sinchana
1st MBA
Department of Management Studies, Mangalore Institute of Technology& Engineering, Moodabidri, Dakshina Kannada, India
sinchana4181@gmail.com

ABSTRACT

The banking sector has seen a profound transformation due to the quick development of fintech. The scope of the impact, the difficulties they provide, and the future dynamics between fintech firms and conventional financial institutions are the main topics of this study. The study aims to gauge opinions on how fintech affects traditional banking and awareness of and use of fintech services. This study employs a statistical tool to determine which services respondents utilize most frequently and which aspects of traditional banking have been considerably enhanced by fintech. Fintech has increased financial inclusion through digital platforms and enhanced the client experience by streamlining and simplifying, banking. By providing more accessible options, this innovation has upended established banking income structures and improved risk management using cutting-edge AI and analytics. Traditional banks should embrace open banking, invest in digital transformation, and work with fintech startups to meet these developments. Banks should concentrate on teaching consumers to increase their digital literacy, and regulators should update their frameworks to guarantee security and stability.

Keywords*: Fintech, Traditional Banking And Digital Literacy.*

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Identifying Barriers to Electric Vehicle Adoption among Youths in Dakshina Kannada

[1] Prahith.P.Shetty ,[2] Pavaneeth Kumar
[12] 1st year MBA
shettyprahith@gmail.com

ABSTRACT

Electric vehicles (EVs) are important for reducing pollution and reliance on fossil fuels. However, many young people in Dakshina Kannada are not adopting EVs. This study investigates the reasons behind this by using surveys and discussions with local youths. The findings show that high purchase costs, lack of charging stations, fear of running out of battery, and low awareness of EV benefits are the main barriers. Additionally, social influences and cultural views also play a role in their decision-making. The study suggests that better education, financial incentives, and more charging stations could help increase EV adoption among youths in the region. These recommendations can help policymakers create effective strategies to encourage more young people to choose electric vehicles in Dakshina Kannada.

***Keywords**: Electric Vehicle Adoption, Youth Barriers, Dakshina Kannada, Adoption Challenges*

Sustainable E-Commerce: The Integration of Green Practices and Their Far-Reaching Environmental and Social Implications

[1] Ankitha shetty, [2] Vanitha Shetty, [3] Shreyas Kharvi
[123] 1 year MBA, Mangalore Institute of Technology & Engineering Moodabidiri
Dakshina Kannada, Karnataka
[1] vanithashetty576@gmail.com,[2] ankishetty55@gmail.com

ABSTRACT

The rise of e-commerce has revolutionized global retail business, offering unparalleled convenience and accessibility. At the same, this growth has also raised significant environmental and social concerns. This study delves into the integration of sustainable practices within the e-commerce sector, examining their environmental impacts and social implications. The primary objective of this research was to evaluate the impact of sustainable practices on environmental footprints and to analyze the social implications of ethical sourcing and consumer awareness. The study reviews how sustainable e-commerce practices contribute to environmental conservation. Key practices such as eco-friendly packaging, carbon-neutral shipping, and energy-efficient logistics are examined to determine their effectiveness in reducing the carbon footprint. The analysis highlights the potential of these practices to mitigate environmental degradation, thus supporting global efforts to combat climate change. Secondary data from leading e-commerce companies adopting these practices provide concrete examples of their benefits and challenges, offering insights into their implementation and scalability. The research also explores the social dimensions of sustainability in e-commerce. It investigates how ethical sourcing of products impacts labour conditions and community well-being in sourcing regions. The role of consumer awareness is also examined, emphasizing how informed consumers can drive demand for sustainably sourced products and influence corporate policies. By fostering a culture of sustainability, e-commerce platforms can enhance their social responsibility, leading to positive outcomes for both producers and consumers. The study concludes that sustainable e-commerce practices not only have the potential to significantly reduce environmental footprints but also to promote social equity. It

underscores the importance of a holistic approach that integrates environmental and social considerations into business models. As e-commerce continues to expand, adopting and promoting sustainable practices will be crucial for ensuring long-term viability and ethical responsibility in the digital marketplace. This research contributes to the growing discourse on sustainability in e-commerce, offering valuable insights for businesses, policymakers, and consumers alike.

Keywords: *Sustainable E-Commerce, Environmental Impact, Ethical Sourcing, Consumer Awareness ,Social Responsibility*

Overcoming Barriers: Challenges and Solutions for Youth Investment

[1]K Prakrati Bharadwaj, [2] Greeshma K, [3] Kaushik
[123] 1st year MBA Student
[123] Mangalore Institute of Technology and Engineering, Moodabidri.
Dakshina Kannada, Karnataka, India
[1] bharadwajprakrithi18@gmail.com,[2]-greeshmakkotian55@gmail.com
[3] kaushikpoojary531@gmail.com

ABSTRACT

This study explores the relationship between age groups and investment knowledge, focusing on the challenges faced by youth in starting their investment journeys. In the rapidly changing financial landscape, young people often encounter barriers such as a lack of financial literacy, limited access to resources, which prevent them from engaging in investment activities. This research evaluates how environmental factors, including educational institutions, family influence, and peer groups, contribute to the awareness and understanding of investment among the youth.

This study aims to identify the relationship between age groups and investment knowledge, focusing on how different age demographics understand and engage with investment concepts. It also seeks to uncover the challenges faced by youth when starting investments and proposes practical solutions to help initiate their investment journeys. Furthermore, the research examines the role of environmental factors, such as educational institutions, family influence, and peer groups, in influencing investment awareness and behavior among young people. Through this comprehensive approach, the study aims to develop targeted strategies that enhance investment knowledge and encourage early investment practices among younger demographics.

Keywords: *Investment Knowledge, Youth Investment Challenges, Financial Literacy, Investment Barriers And Awareness, Investment Behavior.*

Future of Green Business Ventures: A Review

[1]Aneena V George, [2]Dr Florin Shelomith Soans
[12]Student, Research Supervisor and Assistant Professor
[12]Department of PG Studies and Research in Economics
[1]St Aloysius (Deemed to be University), Mangalore
[2]florin@staloysius.edu.in

ABSTRACT

As sustainability continues to rise globally, we can expect a significant shift in the future of green business initiatives within the business landscape. The global economy is increasingly incorporating green business practices, driven by a commitment to environmentally friendly methods. This trend is largely fuelled by changes in consumer demand for sustainable products, government policies, and advancements in technology. Green business initiatives focus on maximizing resource efficiency and reducing waste to optimize the use of limited resources. This study examines how energy-efficient manufacturing techniques and biodegradable materials are transforming the industrial sector. It sheds light on the potential impact of green business practices in a global economy increasingly concerned with climate change and environmental degradation. The research explores why addressing environmental challenges is essential for promoting economic growth. Additionally, it investigates the growing consumer preference for eco-friendly products and how businesses are leveraging green strategies to meet sustainability standards. The study also highlights how companies can gain a competitive edge in this era of increasing environmental and financial accountability. It is anticipated that the trajectory of green business efforts will undergo significant changes, driven by evolving economic, technological, and social factors. Companies that proactively embrace and integrate these innovations will not only contribute to environmental preservation but also position themselves competitively in a rapidly changing economic environment.

Keywords: *Social Media Marketing, Investor Behaviour, Mutual Fund Industry*

 ISBN: 978-93-340-9369-8

The Impact of Social Media Marketing on Investor Behaviour: A Study on Mutual Fund Investors of Coastal Karnataka.

[1]Reshma , [2] H. N. Ramesh
[1] Research Scholar, [2] Professor
[12]Kuvempu University, Shankarghatta, Shivamogga

ABSTRACT

The majority of consumers used to base their investing decisions on a combination of elements, which included reading newspapers, analysing information, graphs, and other visual aids, before making an investment a decade ago. A common practise for novice investors is to consult friends and relatives who have experience with mutual funds, stock markets, and investing in general. This pattern has altered due to technological improvements. These days, information that is digitally accessible—including social media platforms—is used to conduct research on stocks. Today, social media is used for most forms of communication, from influencers sharing news on Instagram to CEOs of companies tweeting on Twitter. Today's smartphone user is active on at least one social media platform. These days, social media is so strong that it may affect our daily decisions about everything from investing in an upcoming IPO to purchasing a particular cosmetic product. This study looks at how social media marketing has changed the mutual fund business and how it has affected investor behaviour. Mutual fund providers have adopted social media channels to interact with current investors and draw in new business as the digital landscape continues to swiftly expand. This also looks into how the industry and investor decision-making processes have been influenced by these digital techniques.

Keywords: *Social Media Marketing, Investor Behaviour, Mutual Fund Industry*

A Study on the Customer Satisfaction towards Amazon Company

[1] Dheeraj, [2] Rohith
[12] 1st Year MBA
[12] Alva's institute of engineering and technology, Mijar, Moodbidri, D.K.
[1]Poojarydheeraj17@gmail.com, [2] rohithkulal75@gmail.com

ABSTRACT

This study investigates the factors influencing customer satisfaction with Amazon, the world's largest online retailer. With the exponential growth of e-commerce, understanding customer satisfaction has become paramount for businesses to thrive in the digital marketplace. The objective of this research is to assess the various dimensions contributing to customer satisfaction with Amazon's services and products. Employing a mixed-methods approach, data was collected through surveys and interviews from a diverse sample of Amazon customers. Findings reveal several key factors impacting satisfaction, including product quality, pricing, delivery speed, customer service, and website usability. Customer loyalty is one of the most over used phrases in business today. For fulfilling these objectives descriptive research design has been used. The data from 100 respondents have been collected from the area of South Chennai city. Shoppers can visit web site and shop just sitting in form of computer. Ability of the internet contains wide range of collecting information, supplying a service or purchasing a product Amazon should work towards them so that it can increase its customers and finally profit.

Keywords: *Customer Loyalty, Website Usability, Customer Perception.*

 ISBN: 978-93-340-9369-8

E- Wallets as Catalyst for Sustainable Digital Transformation in Mobile Commerce Business: A Study on Consumer Perception in Selected Taluks of Dakshina Kannada District

[1] Dr. Vijaya Saraswathi B,[2] Shwetha J Rao
[1] Assistant Professor , [2] Lecturer
[12] PG department of Commerce
[12] Vivekananda College (Autonomous) Puttur

ABSTRACT

Digitalization has significantly reshaped the commerce landscape, particularly with the rise of digital wallets (e-wallets) within the mobile commerce ecosystem. India's digital payments market driven by mobile commerce is expected to grow to $1 trillion by 2026, this spotlights emergence of e-wallets as a crucial tool that enable seamless, secure, and efficient transactions, thus enhancing the functionality and sustainability of m-commerce platforms. This study investigates consumer behavior and preferences regarding usage of e wallets among differentiated age groups and delves into the role of digital wallets in promoting a cashless economy by fostering contactless, secure transactions, enhancing consumer convenience, and supporting environmentally sustainable business practices. Furthermore, the study highlights current trends in mobile commerce, emphasizing how e-wallet integration is vital for the deployment of advanced technologies such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT). These technologies are transforming digital commerce by enabling more intelligent, personalized, and responsive shopping experiences. The findings offer valuable insights into the potential of e-wallets to support sustainable growth, drive digital transformation, and meet the expanding objectives of Industry 4.0 and look ahead to the capabilities of Industry 5.0, positioning e-wallets as integral to future of m-commerce business and contribute to the evolving digital economy.

***Keywords**: E-Wallets- M-Commerce- Digitalization – Sustainable Business- Economy*

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A Review of AI Systems Influencing Business Communication in Today's World

Latha Mohan Shetty
Department of Humanities
Vivekananda College of Engineering & Technology, Nehru Nagar
lathashetty22@gmail.com

ABSTRACT

In the rapidly evolving digital landscape, Artificial Intelligence (AI) has emerged as a transformative force in business communication, reshaping the ways organizations interact internally and externally. This paper provides a comprehensive review of the current AI systems influencing business communication, exploring their applications, benefits, challenges, and future implications. By examining a range of AI-driven tools—from natural language processing and chatbots to sentiment analysis and automated content generation—this study highlights how these technologies enhance efficiency, personalization, and decision-making in communication processes. The review also delves into the ethical considerations and potential risks associated with AI integration, including issues of privacy, transparency, and the diminishing role of human intuition in communication. The findings suggest that while AI presents significant opportunities for innovation and efficiency, careful consideration of its implications is essential to harness its full potential in a responsible and effective manner.

***Keywords**: Artificial Intelligence (AI), Business Communication, Digital Transformation.*

Examining Cultural Impact: A Comparative Study of New Advertising Media and Traditional Advertising Strategies in Selected Taluks of Dakshina Kannada District

[1]Rahul P.R, [2]Thanuja B.
[12]II M. Com
[1 2]Vivekananda College of Arts, Science and Commerce (Autonomous) Puttur
[1]rahulpr3421@gamil.com, [2]thanujabalakrishna@gmail.com

ABSTRACT

Culture is the "Sum total of knowledge, benefits, art, morals, customs and other capabilities and habits acquired by humans as members of societies". It profoundly influences human behaviour, shaping interactions, spending habits, and lifestyle choices. Given its pervasive impact, culture inevitably affects how consumers respond to advertising. This abstract examines the role of culture in shaping consumer behavior and its implications for advertising strategies. By recognizing cultural influences, advertisers can better tailor their messages to resonate with diverse audiences, enhancing the effectiveness of their campaigns. Understanding cultural context is crucial for creating impactful and relevant advertising that aligns with the values and behaviours of target consumers. Advertising has long played a pivotal role in shaping cultural norms, values, and consumer behavior. As societies evolve and technology advances, the advertising landscape continually transforms, introducing new media channels and innovative strategies that redefine the relationship between advertisers and consumers. This research paper delves into the cultural impact of advertising strategies, comparing the effects of new digital media with traditional advertising approaches. By examining the evolution from traditional media such as television, radio, and print to the digital realm, this paper highlights the transformative power of technology and changing consumer habits. The research provides valuable material for understanding advertising media's rolein modern marketing and offers brands an analysis of advertising communication characteristics. In an era where advertisements are ubiquitous, this paper underscores the importance of adapting strategies to align with current trends, ensuring both individual product promotion and overall brand success.

***Keywords**: Culture and Consumer Behavior, Advertising Influence, Consumer Response, Target Audience, Cultural Context.*

"A Study on Gender Gap in Financial Literacy and Investment" - With Reference To Dakshina Kannada

[1]Sujan M P, [2]Akshay K Poojari
[12]AIET - Mijar
[1]sujan.mp07@gmail.com, [2]akshaykp20535@gmail.com

ABSTRACT

India has a promising outlook for long-term growth because of the country's substantial savings and investment rates. In this modern era, women are equal to men in working desire. Women play a vital role in contributing to the overall development of the family including the economic growth of the family. They work, earn, save income, and support their family. Indian working women invest on their own or with other family members or their partners. Usually on a regular basis; money used to buy stocks, contribute to a group investment plan, or buy any asset where a certain amount of capital risk is involved is considered an investment. The main goal of their investments is safety and financial independence.

Financial literacy is purely to realize the way in which money works. It implies examining how one makes money, spends it, manages it, and invests it. Investment awareness refers to individual awareness to carry out investment activities. Investment behavior is related to the activities of individual investors regarding searching, evaluating, acquiring, reviewing and, if necessary, disposing of such investment products. It reveals how individual investors allocate the excess financial resources to various instruments available. Demographic and non- demographic factors influence like income of the individual, their expenditure structure, reliable source of information, investment tenure, risk-taking capability, investment objectives influence the investment decision of individual. The investment behavior varies from each other depending upon their investment requirements. Satisfaction is a happy situation one feels after the occurrence of a certain event. Investment satisfaction is the satisfaction one receives after investing in any of the avenues. This research paper explores the investment behavior of Indian working women, focusing on their financial literacy, investment awareness, and the demographic factors influencing their decisions. By examining how women manage, invest, and allocate their financial resources, the study aims to understand the role of financial literacy in shaping their

investment satisfaction. The findings will shed light on the growing contribution of women to India's economic growth and the importance of promoting financial literacy to enhance their investment outcomes and financial independence.

***Keywords**: Gender gap, financial literacy, investment, Dakshina kannada, investment awareness.*

Green Business Practices: A Study on Retailers level of awareness in Dakshina Kannada District

Dr.Ravikala.
Assistant Professor, Department of Commerce
Vivekananda College of Arts, Science and Commerce (Autonomous), Puttur.
Dakshina Kannada, Karnataka
ravikalaa77@gmail.com

ABSTRACT

Green business practices are those that promote conducting business in a way that is environmentally friendly by using natural resources effectively to accomplish desired goals. The usage of natural resources is rising dramatically along with corporate expansion, which has a detrimental effect on the environment. Therefore, implementing green business practices is imperative for every businessman in order to preserve the environment and to ensure long-term viability. Furthermore, using green practices in business activities helps businesses to save expenses significantly, increasing profits and enhancing their standing in the community. Retailers play a significant role in the expansion of the Indian economy. Retailers are specialists in both consumer knowledge and sales. Their primary goal is to satisfying client requests. They don't give consideration to social and environmental issues. However, each and every person must contribute in order to safeguard the environment and save the natural resources. Thus, the purpose of this article is to ascertain retailers level of understanding of green business and the steps they have taken to implement green business practices. The study is analytical and descriptive in nature. Primary and secondary sources have both contributed data to the study. Statistical tools are used for data analysis and interpretation.

Keywords*: Corporate expansion, Environment,, Green business, Green business practices*

"Predicting Financial Distress: A Systematic Review of Financial and Non-Financial Indicators"

[1]Maya Korath, [2]Dr. Surekha Nayak
[1]Ph.D. Scholar, [2]Associate Professor
[1 2] School of Business and Management, Christ (Deemed to be university),
Bengaluru, Karnataka, India,
[1]maya.korath@res.christuniversity.in, [2]surekha.nayak@christuniversity.in

ABSTRACT

The assessment of corporate financial viability has long relied on financial ratios as key indicators, crucial for maintaining a competitive edge and ensuring stable growth in a dynamic market environment. This study seeks to systematically review and compare the role of financial and non-financial indicators of financial distress. By examining variables such as profitability, liquidity, leverage, and cash flow, alongside non-financial indicators related to macroeconomic and corporate governance, this paper analyses the available bankruptcy prediction models developed since the 1960s. The findings highlight that the selection of explanatory variables varies across countries, reflecting diverse preferences and economic contexts. This review provides a comprehensive analysis of the variables employed in bankruptcy prediction models, offering insights into the key factors influencing financial distress prediction.

***Keywords**: Financial distress, Prediction models, Financial indicators, Non-financial indicators, Systematic review, Bankruptcy prediction*

A Study on Financial Performance of Eicher Motors Ltd.

[1]Pramod, [2]Dr. Vishnu Prasanna KN
[1]4 th semester MBA, [2]Professor
[12]Alva's institute of engineering and technology, Mijar, Moodbidri
[1]poojarypramod38@gmail.com

ABSTRACT

The paper titled "A Study on Financial Performance of Eicher Motors Limited" provides a comprehensive analysis of the company's financial performance over a five-year period, from March 2019 to March 2023. It examines key financial metrics such as profitability, liquidity, solvency, and operational efficiency through various financial ratios. The study reveals that Eicher Motors consistently maintained a gross profit margin above 40%, demonstrating strong cost control and production efficiency. However, operating profit margins fluctuated before recovering to 25% in 2023, signaling improvements in operational efficiency and cost management strategies. The net profit margin also saw a recovery, reaching 17.86% in 2023, indicating a positive trend toward higher profitability. In addition to profitability, the study highlights concerns in liquidity, as both the current ratio and quick ratio declined toward the end of the assessment period. Despite these liquidity challenges, Eicher Motors maintained a robust solvency position, with a low debt-to-equity ratio and an interest coverage ratio that improved significantly, reflecting the company's minimal reliance on debt. The report concludes that while Eicher Motors demonstrated resilience in maintaining profitability and financial stability, there is a need to address liquidity concerns and enhance asset utilization to ensure sustained growth and competitiveness in the dynamic automotive industry.

***Keywords**: Financial Performance Analysis, Profitability Ratios, Eicher Motors Ltd., Automobile Industry Financials*

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Bridging the Skills Gap in Higher Education: Preparing Students for the Evolving Job Market

[1]Abhishek, [2]Disha Puthran, [3]Anushree
[1]Assistant Professor, [23]Lecturer
[123]Yenepoya institute of Arts, Science, Commerce and Management

ABSTRACT

In today's competitive job market, post-graduation studies have become increasingly common, with 30% of bachelor's degree holders pursuing further education immediately after graduation. However, despite the crucial role of higher education in national development and economic growth, a significant disconnect exists between industry needs and graduate skills. According to the FICCI-EY Higher Education report, 93% of MBA and 80% of engineering graduates in India are deemed unemployable due to inadequate preparation for industry requirements. This study investigates the current job market landscape and explores whether post-graduation is the sole determinant of career opportunities. It also examines the relative importance of formal education versus skill acquisition in securing career advancement. The findings highlight the need for higher education systems to adapt and emphasize life skills and analytical thinking to bridge the skills gap and prepare students for success in the ever-changing job market.

***Keywords**: Education, Job Market, Skilled Workforce, Industry Needs, Career Advancement.*

 ISBN: 978-93-340-9369-8

Emerging trends of Business Scenario in Singapore

Ambica Kudva
Citibank, Singapore

ABSTRACT

With its favorable taxation policies and strategic position within Southeast Asia, Singapore offers foreign investors competitive and unprecedented access to the Asian market. Businesses can enjoy over 80 double taxation avoidance agreements, significant tax deductions, and numerous free trade agreements with neighbouring Asian nations, the EU, the US China and India. In addition to its political and economic stability, the city-state stands as a prominent financial center within the ASEAN region.

For investors with an international business scope, Singapore offers direct access to the global market. It's highly developed infrastructure, stringent Intellectual Property protection, skilled and English-speaking workforce, and political stability make the city-state a global hub for businesses. Geographically, the country is positioned amongst several thriving Southeast Asian economies, as well as the markets of China and India. The city-state has sought to mirror international business and trade standards, such as those presented by the World Trade Organization and the Organization for Economic Cooperation and Development. However, doing business in Singapore does have some challenges, including rising business costs, labour shortages, and strict adherence to regulatory compliance.

***Keywords**: Business, Singapore*

ICT Sector in Canada: Innovation and Growth

Dominic Parker
IT Consultant, Canada

ABSTRACT

The Information and Communication Technology (ICT) sector in Canada is a dynamic and rapidly growing industry, driving innovation across various domains. This sector encompasses a wide range of activities, including software development, telecommunications, cyber security, and digital services. Canada's ICT industry benefits from a strong infrastructure, skilled workforce, and supportive government policies. Key trends include the adoption of emerging technologies such as artificial intelligence (AI), cloud computing, and the Internet of Things (IoT). The sector's growth is also fuelled by increasing demand for digital transformation and smart technologies in various industries. Challenges include addressing cybersecurity threats, ensuring data privacy, and fostering talent development.

Keywords*: ICT sector, Artificial Intelligence (AI)*

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Impact of Artificial Intelligence on Future Jobs: A Research Perspective

[1]Vandana Shankar, [2]Dr. Robin Manohar Shinde
[1]Head – Placements & Admissions, [2]Director – MBA Department
[12]Vivekananda College of Engineering & Technology, Puttur

ABSTRACT

Artificial Intelligence (AI) is reshaping the future job landscape by automating tasks, creating new roles, and transforming skill requirements across industries. This research examines the dual impact of AI on job displacement and creation, highlighting the sectors most affected, such as manufacturing, finance, and healthcare. Using a mixed-method approach, including surveys, interviews, and secondary data analysis, the study explores the perceptions of workers, managers, and experts on AI's impact and the potential for reskilling. The findings provide insights into how organizations and policymakers can prepare for an AI-driven workforce transformation.

Keywords: *Artificial Intelligence, Future Jobs, Automation*

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Healthcare In Industry 4.0: Revolutionizing Patient Care

Heather Cardin
Head of Training, Govt eHealth NSW, Sydney, Australia

ABSTRACT

Healthcare in Industry 4.0 leverages advanced digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analytics, robotics, and cloud computing to transform patient care, diagnostics, and treatment. This revolution enables real-time monitoring through connected devices, personalized medicine using AI-driven insights, predictive analytics for early disease detection, and robotic-assisted surgeries for enhanced precision. The integration of electronic health records (EHRs) with AI facilitates efficient data management and improved decision-making, leading to better patient outcomes. However, challenges such as data privacy, cybersecurity, and the need for digital literacy among healthcare professionals remain critical.

Keywords*: Industry 4.0, Healthcare*

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Effectiveness of placement training program in enhancing employability skills among students

[1]Megha, [2]Sheethal S K
[12]MBA Department
Vivekananda College of Engineering & Technology, Puttur

ABSTRACT

The most effective placement training programs are built following a systematic, step-by-step process. Standalone or one-off training initiatives are more likely to fall short of meeting organizational objectives and participant expectations due to their lack of continuity. Without ongoing support, students may struggle to retain and apply new skills, leading to decreased productivity and frustration. Hence, without follow-up resources or reinforcement, students might forget key concepts or find them difficult to apply. To achieve lasting impact, organizations need to invest in continuous, integrated training approaches. This paper examines factors that students should develop to improve employability competences supporting them in obtaining the necessary expertise and skills to facilitate their transition to the labour market and to address the requirements of their new jobs. Employability competences are considered to contribute to students' wellbeing and economic prosperity.

Keywords: *Placement Training, Employability*

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Sustainability and Environmental Management in Kuwait's Oil Sector

Vinitha Margaret Pinto
ICT Co-ordinator
Martyr Asrar Al-Qabandi Bilingual School, Dasma Kuwait

ABSTRACT

Kuwait's oil sector is increasingly focusing on sustainability and environmental management to address ecological impacts and align with global environmental standards. This abstract highlights the sector's initiatives to reduce carbon emissions, enhance energy efficiency, and invest in green technologies. Key strategies include implementing advanced pollution control systems, adopting renewable energy sources, and promoting corporate social responsibility (CSR) practices. The sector faces challenges such as balancing economic growth with environmental protection and complying with stringent regulations. Ongoing efforts aim to achieve sustainable development while mitigating environmental risks associated with oil production.

***Keywords**: Sustainability, Environmental management, Corporate Social Responsibility(CSR).*

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TRACK 2

ADVANCED TECHNOLOGIES IN COMPUTING AND COMMUNICATION

An Approach to Counterfeit Product Detection Using Blockchain Technology

[1] Dr. R J Prathibha, [2] Aroop Ghosh, [3] Harshit Pandey, [4] Ojesvi Behal, [5] Prabhat Mishra

[1] Associate Professor, [2 3 4 5] Students

[1 2 3 4 5] Department of Information Science

JSS Science and Technology University, Mysuru, Karnataka

ABSTRACT

Counterfeiting of products is a significant challenge in the retail market. These fraudulent products are low-quality imitations of genuine brands, posing risks to consumers and affecting the reputation and value of manufacturers. Various methods, such as RFID tags, artificial intelligence, machine learning, and QR code-based systems, have been employed to combat counterfeiting. However, these methods still exhibit limitations, including QR code copying and resource-intensive operations. In this paper, we propose an enhanced fake product detection system that leverages the security and functionality of blockchain technology to overcome these limitations. This paper proposes a blockchain-based system for detecting counterfeit products using QR codes and storing transaction hashes in blockchain network. The approach ensures product information integrity, enables easy verification by consumers, and offers enhanced security, transparency, and scalability compared to traditional methods.

***Keywords**: QR code, Scalability, RFID tags.*

Robust Data Protection: Combining Quantum Key Distribution, Blockchain, Honeypots, TDE and AES Encryption

[1] Akshatha Kamatha, [2] Priya K, [3] Risshab Srinivas Ramesh
[1 2 3] Department of Computer Science and Engineering
Ramaiah Institute of Technology Bangalore, India
[1] akshathakamath@msrit.edu, [2] priyak@msrit.edu, [3] risshabsrinivas@gmail.com

ABSTRACT

Ensuring the protection of sensitive information stored within databases is paramount in today's data-driven landscape. Data can be secured from various cyber threats by utilising Quantum Key Distribution (QKD), Blockchain technology, Honeypots, Transparent Data Encryption (TDE), and Advanced Encryption Standard (AES). QKD leverages quantum mechanics for unconditional security, while Blockchain technology provides an immutable and decentralized record of transactions. Honeypots serve as decoys to lure and identify attackers, and TDE encrypts data at rest. AES offers strong encryption algorithms for data transmission and storage. The integration of these technologies enhances the security posture of databases by providing robust security, immutability, and transparency. This paper provides a comprehensive review of these technologies in enhancing the security posture of databases against various cyber threats.

Keywords: *QKD, Blockchain Technology, Honeypot, AES, Transparent Data Encryption, DLT.*

Enhancing Q&A Systems with Multilingual Text Conversion and Speech Integration: Harnessing the Power of LangChain and Large Language Models

[1]Priya K, [2]Akshatha Kamath, [3]Chandan K M, [4]Praveen C, [5]Omkar S N, [6]Aaditya S J
[1 2 3 4 5 6] Department of Computer Science and Engineering
Ramaiah Institute of Technology, Bangalore, India.
[1] priyak@msrit.edu, [2] akshathakamath@msrit.edu

ABSTRACT

Searching through URLs and PDFs can be tedious and time-consuming due to the unstructured nature of these documents and the challenge of finding accurate, relevant information. LangChain addresses these issues by using advanced natural language processing algorithms to extract pertinent data from URLs and PDFs. With its user-friendly search interface, customizable filters, and efficient indexing and retrieval mechanisms, LangChain significantly enhances the search experience. Users can annotate important sections, store queries, and create bookmarks, making information retrieval from URLs and PDFs more efficient and improving overall productivity. Traditional text analysis systems often struggle with interactivity, flexibility, and data integration, making it difficult for users to gain meaningful insights from diverse data sources such as websites and PDFs. Our research combines state-of-the-art technologies, including Dash, LangChain, Google Generative AI, and FAISS, to provide a comprehensive solution for extracting, analyzing, and interacting with textual data from various sources. This includes handling both PDFs and data uploaded via URLs. Our research demonstrates significant improvements in the efficiency and accuracy of information retrieval, paving the way for more complex applications such as text summarization and question-answering. Our system is also capable enough to convert the text into speech and to translate text to 10 different languages.

Keywords: *LangChain, ChatGPT, OpenAI, Deep Learning, Google Generative AI, Vector Embeddings, FAISS, Semantic Search.*

Machine Vision Based Non-Invasive Quality Assessment Techniques for Local Agricultural Commodities Considering Physical and Chemical Properties

Manjunath Kammar
Department of Computer Science & Engineering (Data Science)
Ballari Institute of Technology & Management
principal@bitm.edu.in, bitmbly@gmail.com

ABSTRACT

India is the world's second largest producer of several fruits, agriculture-based textile raw materials, roots and tuber crops, pulses, farmed fish, eggs, coconut, sugarcane, and numerous vegetables. The fruit and vegetable processing industry in India is highly decentralized.

A large number of units are in the cottage / home-scale and small-scale sector, having small capacities up to 250 tonnes / annum though big Indian and multinational companies have capacities in the range of 30 to 50 tonnes per hour or so. It ranks 2nd in fruits and vegetable production in the world, behind China. As per capita of National Horticulture Database printed by NHB, during 2015-16, India manufactured 90.2 million metric tons of fruits and 169.1 million metric tons of vegetables. India is one of the largest producers of all deciduous fruits such as apple and pear, peach and plum, Berry and cherry, mainly grown in the Indian States of Jammu and Kashmir, Nagaland, Himachal Pradesh and Maharashtra.

In agriculture science, automation increases the quality, economic growth and productivity of the country. The export market and quality evaluation are affected by assorting of fruits and vegetables. The crucial sensory characteristic of fruits and vegetables is appearance that impacts their market value, the consumer's preference, and choice. During the harvesting season the grading and sorting pose problems for growers. Since it is a labour intensive and time-consuming process, it delays the post harvesting operations which costs them dearly. The grading and sorting are a repetitive process. In practice, it is carried out by humans manually through visual inspection. The manual inspection poses further problems in maintaining consistency in grading and uniformity in sorting. To speed up the

process as well as maintain the consistency and uniformity Various algorithms for sorting and grading are done by various researchers using computer vision. We need to design and implement grading and sorting system.

***Keywords**: Automation, Processing industry, Grading and sorting system.*

Boosting Agricultural Efficiency in Hassan: AI Altrair Rapid Miner and GIS

Ajith Mali Patil
Department of Agriculture Engineering
Alva's Institute of Engineering and Technology, Mijar

ABSTRACT

Data analytics plays a pivotal role in deriving insights from complex datasets characterized by high volume, velocity, and variety. This paper assesses Rapid Miner, an open-source analytics tool, focusing on its data handling capabilities, response time, usability, cost-effectiveness, algorithmic functions, and overall performance. Applied to the agriculture sector in Hassan district, Karnataka, the study addresses challenges related to diverse soil types and fluctuating crop demand. Comprehensive soil data from the Soil Health Card website was analyzed and additional data on tomato, onion, and potato cultivation was collected from individual farmers using Geographic Information Systems (GIS) and Altair Rapid Miner for spatial and predictive analysis. By combining traditional agricultural knowledge with modern technologies, including strategic crop rotation and data analytics, the research aims to enhance production efficiency and align with market dynamics. The paper also demonstrates Rapid Miner's utility in sentiment analysis of online trading platform comments, highlighting its ability to extract actionable insights from user-generated content. The findings underscore the potential of data analytics to improve agricultural productivity and market responsiveness through tools such as decision trees, Naive Bayes, and Random Forest algorithms.

Keywords: *Decision tree, Naive Bayes, Random Forest, Rapid Miner, Altair, Data Analytics, Agriculture, Crop Optimization, GIS, Soil Dataset, Market Dynamics, Predictive Modeling.*

Enhancing Underwater Images: A Comparative Study of Image Enhancement Techniques

[1] Dr.Arun Anoop M, [2]K R Vivek [3] Manish, [4] Nandana P Aghera
[1] Associate Professor, [2 3 4] 4 [th] year B.Tech
[1 3 4] Department of Computer Science & Engineering
Vivekananda College of Engineering & Technology, Puttur, Karnataka, India
[2] Department of AIML
Alvas Institute of Engineering & Technology, Mijar, Moodubidire
[1] arunanoopm@gmail.com

ABSTRACT

Underwater images often suffer from degradation due to light absorption and scattering, leading to poor visibility and color distortion. This presents challenges for various underwater applications, such as marine research, underwater robotics, and recreational photography. To tackle this issue, we propose a novel fusion-based underwater image enhancement technique that utilizes illumination-aware CIS (Chromatic-Illumination-Saliency) Weight maps. This study includes a comparative analysis of several image enhancement techniques designed for underwater imagery, focusing on fusion-based methods that utilize different weight maps. Our approach begins with the generation of hybrid weight maps that integrate information from illumination, chromatic, and saliency maps. These maps effectively identify areas requiring varying degrees of enhancement. Subsequently, these weight maps guide a fusion process that blends the original image with an enhanced version obtained using an underwater image dehazing algorithm. This adaptive enhancement strategy preserves details in well-lit areas while improving visibility in darker regions. We investigate the effectiveness of illuminance, chromatic, saliency, and hybrid weight maps (with an alpha value of 0.7 or other threshold values) in guiding the enhancement process. These weight maps are combined with established enhancement algorithms, including Retinex-based methods (SSR, MSR), Underwater Dark Channel Prior (UDCP), histogram prior, blurriness-based enhancement, and Gray-World Dark Channel Prior (GDCP). A comprehensive evaluation is conducted to assess the performance of these techniques in enhancing the quality of underwater images. This research aims to contribute to the development of robust and efficient solutions for

improving underwater visibility and enabling accurate visual perception in challenging underwater environments

***Keywords**: Underwater Image Enhancement Benchmark(UIEB) dataset, Underwater Image Enhancement, Fused CIS(Chromatic-Illumination-Saliency) Weight maps, Image dehazing, Significant Image Enhancement algorithms.*

Enhancing Fetal Health Monitoring through Advanced Machine Learning Techniques: A Survey on Recent Methodologies and Applications

Madhusmita Mishra
Assistant Professor
K S School of Engineering and Management, Bengaluru

ABSTRACT

This survey paper delves into the emerging machine learning techniques and their applications in fetal health monitoring. It encompasses an analysis of recent research efforts, focusing on diverse methodologies ranging from deep learning architectures to advanced feature selection techniques. This survey provides a comprehensive overview of the current state-of-the-art in this critical field. The paper highlights key findings and contributions, underlining the potential of machine learning in revolutionizing prenatal care and diagnostics. The advent of machine learning (ML) and deep learning (DL) in healthcare has opened new frontiers in prenatal care, particularly in fetal health monitoring. This topic is of paramount importance due to the critical need for early detection and intervention in fetal health issues. Accurate and timely monitoring can lead to significant improvements in perinatal outcomes, reducing risks for both the mother and the fetus. The incorporation of ML techniques in analysing complex medical data, such as cardiotocography (CTG) and imaging, represents a transformative shift in obstetric care, offering novel insights and enhanced diagnostic capabilities.

Keywords: *Cardiotocography, ML techniques, Deep learning.*

A Deep Learning Approach to Image-Based Fall Prediction

L. Manjula
Assistant Professor
Computer Science Engineering
The Oxford College of Engineering, Visvesvaraya Technological University,
Bommanahalli, Bengaluru- 560068

ABSTRACT

Fall prevention in older individuals requires early identification of high fall risk. Wearable sensors have the potential to offer significant insights into everyday activities. Research has demonstrated that biomechanical parameters derived from inertial data can be particularly useful in assessing fall risk. Accelerometers and other body-worn sensors can give important information about the danger of falls. The current method for determining fall risk is to use biomechanical parameters that are obtained from accelerometer data. Here, we investigated the suitability of deep learning methods derived from Deep learning to automatically create characteristics that evaluate fall risk from raw accelerometer data. The demonstration of three convolutional neural network (CNN) deep learning model architectures was compared.

Keywords: *Fall prediction, Deep learning, Camera, sensor, IoT.*

Detecting Pneumonia from Chest X- Ray Images Using Deep Learning

[1] S. Visalini , [2] Dr. R. Kanagavalli
[1] Research scholar, [2] Professor
[1 2] Department of ISE
The Oxford College of Engineering Bengaluru-68
[1] visaliniphd@gmail.com

ABSTRACT

Pneumonia continues to be a major worldwide health concern, and prompt treatment and better patient outcomes depend on an early and precise diagnosis. The Pneumonia diagnosis has been completely transformed by recent developments in diagnostic imaging combined with the potency of deep learning techniques. One common and potentially fatal respiratory illness is Pneumonia, which is frequently identified via chest X-ray imaging. This work proposes a method for automatically detecting the disease Pneumonia from chest X-ray pictures. It emphasizes the value of image processing techniques and describes how deep learning might improve the precision and effectiveness of Pneumonia identification. Chest X-rays and computed tomography scans are two of the imaging modalities that are frequently used to diagnose pneumonia. By the use of learning strategies and convolutional neural networks, our model performs well in recognizing pneumonia patients. High sensitivity is attained through the training remarking the specificity of the model and attaining validation using a sizable dataset of annotated chest X-ray pictures. In this research, convolutional neural networks (CNNs) and its modifications, among other cutting-edge deep learning techniques for pneumonia diagnosis, are thoroughly reviewed. Moreover, it delves into preprocessing techniques, data augmentation strategies, and transfer learning methods utilized to enhance model performance. Furthermore, it addresses challenges such as interpretability, model robustness, and real-world deployment, offering insights into potential solutions and future research directions. These results imply that deep learning- based methods have potential to boost the precision and efficiency of pneumonia diagnosis, which could help doctors make treatment decisions on time.

***Keywords**: Medical imaging, transfer learning, preprocessing techniques, deep learning, accuracy.*

A Review on Air Quality Monitoring System Using Machine Learning

Amisha Salian
UG Student
Mangalore Institute of Technology and Engineering, Moodabidri

ABSTRACT

The combination of Internet of Things (IoT) sensors and machine learning algorithms has revolutionized the monitoring of air quality, offering more precise and up-to-date data for better environmental management. This study examines current advancements in this field, focusing especially on the development and implementation of Internet of Things (IoT)-based air quality monitoring systems that employ a range of sensors to detect pollutants such as particulate matter, CO, NO2, and CO2. These systems forecast pollution levels and look at trends in air quality using machine learning models like XG Boost, Random Forest, Support Vector Regression, and Linear Regression. They also collect data in real time via wireless sensor networks. Notable advancements include low-cost sensors and wireless networks for industrial air quality prediction, Internet of Things platforms for continuous environmental monitoring, and real-time in-car monitoring systems to ensure driver safety. The examined studies highlight some problems with power consumption, data latency, and sensor accuracy but also demonstrate how IoT and machine learning may be utilized to increase the precision and effectiveness of air quality monitoring. Future directions point towards the integration of artificial intelligence, improved sensor technologies, and renewable energy solutions to further improve air quality management and forecasting capacities. This in-depth analysis provides recommendations for developing more dependable and scalable air quality monitoring systems, as well as highlighting the potential of IoT and machine learning technologies in addressing the issues related to global air pollution.

Keywords: *XG Boost, Random Forest, Support Vector Regression, Linear Regression*

IoT-Powered Smart Self-Defensive Device for Women's Safety

[1] Angel Donny F, [2] Chaitrashree S, [3] Dhinesh Kumar K S, [4] Shilpashree U

[123] Assistant Professor, [4] Research Scholar

[1 2] Computer Science and Engineering, The Oxford College of Engineering, Bangalore

[3]Artificial Intelligence and Data Science, Saveetha Engineering College, Chennai

[4]Computer Science and Engineering, B.M.S. College of Engineering Bangalore, India

[1] pangeldonnypaul@gmail.com, [2] chaitrashree1805@gmail.com,

[3] dhineshkumarks@saveetha.ac.in, [4]ssshilpashree4@gmail.com

ABSTRACT

The use of robots in cleanrooms is intrinsic to attaining the required levels of contamination and general working productivity in semiconductor manufacturing plants. These are very restricted environments which is why there are very high demands for a clean environment for the production of semiconductor devices. Robotic systems reduce the amount of human interaction; the reduction of particulate contamination is an important factor that can undermine intricate generation processes. These robots are created to maintain the 160 ISO cleanliness level, they use HEPA filters and do not carry any particles on their surfaces. The use of robots also enables a delicate touch when it comes to largely fragile semiconductor wafers so that errors due to human handiness as well as fatigue are significantly reduced. Integration of robotics in cleanrooms increases overall productivity by executing delicate and time-consuming functions in a precise and fast-paced way, key functions include; wafer transfer, photomasking, and etching. This optimization results in the form of increased throughput and yield for the fabrication of semiconductor devices hence offering a cheaper and highly reliable. In addition, the integration of robotics in association with sophisticated control systems and feedback opens up the possibilities of steady enhancements of the process and variability in production. This functionality makes production with robots more flexible because the robots can be taught various sequences and tasked to manage change. The use of robotics contributes to the enhancement of Industry 4. 0 principles that are standardized in industries but they may include principles like, Predictive maintenance, and data analytics

among others. In this way, robotic operations' data enables the identification of possible maintenance requirements and the corresponding decrease in downtime, leading to performance enhancement.

***Keywords**: Robotics, etching, industry 4.0, ISO cleanliness level, semiconductor device*

Advanced Robotics in Semiconductor Etching- Enhancing Process Control and Consistency in Fabrication

[1] Akanksha, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath,
[1] 2nd Sem M.Tech., [2] Associate Professor, [3] Professor,
[1 2 3] Department of Electronics & Communication Engineering,
Dayananda Sagar College of Engineering,
Bangalore, Karnataka, India
[1] akankshaingaldals111@gmail.com ,[2] dr.pavithrag.8984@gmail.com ,
[3] tcmanju@iitbombay.org

ABSTRACT

To create high-performing and dependable electronic devices, the semiconductor industry requires accuracy and consistency in the fabrication process, particularly at the key etching stage. To improve process control and uniformity, this research investigates the integration of advanced robots in semiconductor etching. Robotics can be used to increase the precision of the etching process by using adaptive control mechanisms and real-time monitoring. This study assesses how robotic systems affect overall process efficiency, defect reduction, and etching uniformity. Automated wafer handling, accurate chemical delivery, and in-situ diagnostics are some of the major advancements. The outcomes highlight the potential of robotics to transform semiconductor manufacturing by showing notable gains in yield and device performance.

Keywords*: Defect reduction, Process control, Robotics*

Advanced Robotics in Metrology – Improving Measurement Accuracy and Speed in Semiconductor Quality Control

[1] Adarsh.B, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath,
[1] 2nd Sem M.Tech., [2] Associate Professor, [3] Professor,
[1 2 3] Department of Electronics & Communication Engineering,
Dayananda Sagar College of Engineering,
Bangalore, Karnataka, India
[1] adarsh123bs@gmail.com , [2] dr.pavithrag.8984@gmail.com ,[3] tcmanju@iitbombay.org

ABSTRACT

Because semiconductor devices are so precise and detailed, it is imperative that the semiconductor industry maintain strict quality control requirements. In metrology, advanced robots has become a vital tool for improving speed and accuracy of measurements, meeting the growing needs of semiconductor manufacturing for increased precision and throughput. The integration of cutting-edge metrology methods, including atomic force microscopy (AFM), optical inspection systems, and coordinate measuring machines (CMMs), with modern robotic systems is examined in this work. We talk about how robotics can help with measurement process automation, human error reduction, and uniform, fast inspections. Moreover, real-time data collection and analysis made possible by the usage of robotic systems promotes quicker decision-making and flexible manufacturing procedures. Case studies demonstrating how robotic metrology is used in defect.

Keywords*: Automation by Robots, Measurement without contact, Metrology of Optical, Metrology, Sensor Integration, Defect Detection, Machine Learning, 3D Profilometry, Wafer Inspection, Nanometrology, Advanced Robotics, Quality Control*

Advancements in Robotic Prosthetics - Improving the Quality of Life for Amputees

[1] Bharat Kumar K S, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath,
[1] 2nd Sem M.Tech., [2] Associate Professor, [3] Professor,
[1 2 3] Department of Electronics & Communication Engineering,
Dayananda Sagar College of Engineering,
Bangalore, Karnataka, India
[1] ksbk6869@gmail.com , [2] dr.pavithrag.8984@gmail.com ,[3] tcmanju@iitbombay.org

ABSTRACT

Robotic prosthetics have undergone remarkable advancements in recent years, significantly enhancing the quality of life for amputees. This abstract explores key areas of progress: improved functionality, enhanced sensory feedback, and better human integration. Modern prosthetics now feature advanced motors and actuators for precise movements, AI algorithms for adaptive learning, and enhanced battery technology for prolonged use. Sensory feedback innovations include integrated sensors for touch and pressure, as well as direct neural interfaces for real-time sensation. Integration advancements involve myoelectric control for intuitive use and improved materials for comfort and durability. These technological innovations are complemented by improvements in rehabilitation techniques and support systems. Comprehensive rehabilitation programs, including physical therapy, occupational therapy, and psychological support, play a crucial role in helping amputees regain independence and confidence.

Keywords*: Robotic prosthetics, Amputees, Quality of life, Advanced motors, Actuators, Artificial intelligence (AI), Adaptive learning, Battery technology, Sensory Feedback, Integrated sensors, Neural interfaces, Myoelectric control, Comfort, Durability, Mobility*

Automated Material Handling System in Semiconductor Manufacturing

[1] Chandana K R , [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath,
[1] 2nd Sem M.Tech., [2] Associate Professor, [3] Professor,
[1 2 3] Department of Electronics & Communication Engineering,
Dayananda Sagar College of Engineering,
Bangalore, Karnataka, India
[1] chandanakabbur@gmail.com , [2] dr.pavithrag.8984@gmail.com ,
[3] tcmanju@iitbombay.org

ABSTRACT

Improving material logistics' accuracy, dependability, and efficiency, Automated Material Handling Systems (AMHS) have completely changed the semiconductor manufacturing industry. The importance of AMHS in semiconductor factories is examine in this abstract, with a focus on how they help to maintain the integrity of critical materials and optimize production procedures. Automated guided vehicles (AGVs), robotic arms, sophisticated conveyor systems, and automated storage and retrieval systems (AS/RS) are some of the essential parts of AMHS[1]. Wafers, components, and completed goods can be seamlessly moved between manufacturing stages, storage facilities, and inspection stations thanks to these technology. The precise control over material flow that is made possible by the integration of AMHS with Manufacturing Execution Systems (MES) and real-time monitoring systems reduces cycle times and operational downtime. Additionally, AMHS improves traceability and reduces contamination concerns, all of which are critical for upholding high standards in semiconductor production.

Keywords: *Advanced, Efficient, real time process in semiconductor manufacturing using AMHS .*

Robotics in Cleanroom Environments - Ensuring Contamination Control and Efficiency in Semiconductor Fabrication Facilities

[1] Vishwas A.R., [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath,
[1] 2nd Sem M.Tech., [2] Associate Professor, [3] Professor,
[1 2 3] Department of Electronics & Communication Engineering,
Dayananda Sagar College of Engineering,
Bangalore, Karnataka, India
[1] vishwasar85@gmail.com , [2] dr.pavithrag.8984@gmail.com ,[3] tcmanju@iitbombay.org

ABSTRACT

The use of robots in cleanrooms is intrinsic to attaining the required levels of contamination and general working productivity in semiconductor manufacturing plants. These are very restricted environments which is why there are very high demands for a clean environment for the production of semiconductor devices. Robotic systems reduce the amount of human interaction; the reduction of particulate contamination is an important factor that can undermine intricate generation processes. These robots are created to maintain the 160 ISO cleanliness level, they use HEPA filters and do not carry any particles on their surfaces. The use of robots also enables a delicate touch when it comes to largely fragile semiconductor wafers so that errors due to human handiness as well as fatigue are significantly reduced. Integration of robotics in cleanrooms increases overall productivity by executing delicate and time-consuming functions in a precise and fast-paced way, key functions include; wafer transfer, photomasking, and etching. This optimization results in the form of increased throughput and yield for the fabrication of semiconductor devices hence offering a cheaper and highly reliable. In addition, the integration of robotics in association with sophisticated control systems and feedback opens up the possibilities of steady enhancements of the process and variability in production. This functionality makes production with robots more flexible because the robots can be taught various sequences and tasked to manage change. The use of robotics contributes to the enhancement of Industry 4. 0 principles that are standardized in industries but they may include principles like, Predictive maintenance, and data analytics

among others. In this way, robotic operations' data enables the identification of possible maintenance requirements and the corresponding decrease in downtime, leading to performance enhancement.

***Keywords**: Robotics, etching, industry 4.0, ISO cleanliness level, semiconductor device*

Robotics in Biomedical Engineering - Enhancing Precision and Efficiency in Surgical Procedures, Diagnostics, and Rehabilitation

[1] Varun Raj C R, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1] varunrajcr487@gmail.com, [2] dr.pavithrag.8984@gmail.com, [3] tcmanju@iitbombay.org

ABSTRACT

Robotics has revolutionized biomedical engineering by augmenting precision and efficiency across critical healthcare domains. In surgical procedures, robotic systems enable unparalleled accuracy, facilitating minimally invasive techniques and intricate operations that surpass human capabilities. Diagnostic applications benefit from enhanced imaging precision and automated analysis, aiding early detection and precise localization of medical conditions. In rehabilitation, robotics supports tailored therapy regimens through controlled movements and real-time feedback, optimizing recovery outcomes. Despite challenges such as cost and integration complexities, robotics promises to reshape healthcare delivery, offering safer, more effective interventions that advance patient care worldwide.

Keywords: *Robotics, biomedical engineering, surgical procedures, diagnostics, rehabilitation, precision, efficiency, minimally invasive techniques, patient outcomes, healthcare delivery.*

Robotic Innovations in Chip Design Streamlining Design Verification Testing and Prototyping in the VLSI Industry

[1] Varun K , [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1] varunk7103@gmail.com, [2] dr.pavithrag.8984@gmail.com, [3] tcmanju@iitbombay.org

ABSTRACT

Recent advancements in robotics have significantly transformed the field of chip design, driving innovation through increased automation, precision, and efficiency. Traditionally, chip design required extensive manual effort and was constrained by human limitations in accuracy and speed. However, the integration of robotic systems into the design and manufacturing processes has introduced groundbreaking improvements. Robotic innovations in chip design encompass a range of technologies, including automated design tools, precision robotics for component placement, and advanced testing mechanisms. Automated design tools, powered by artificial intelligence, facilitate the rapid generation and optimization of chip layouts, reducing design time and enhancing performance. Precision robotics are employed in the placement and soldering of microscopic components, ensuring alignment accuracy, and reducing the risk of defects. Furthermore, robotic systems equipped with high-resolution imaging and real-time feedback capabilities enable comprehensive testing and quality assurance, identifying potential issues early in the design process. This proactive approach minimizes the likelihood of costly errors and improves the overall reliability of the final product. The integration of robotics in chip design not only accelerates the development cycle but also enhances the scalability and complexity of designs that can be achieved. As technology continues to evolve, ongoing innovations in robotics are expected to further revolutionize the field, driving the next generation of semiconductor technology.

***Keywords**: semiconductor industry, Articulated robots, SCARA robots, Delta robots, Cartesian robots, image processing.*

Robotic Applications in Semiconductor R&D- Accelerating Innovation and Development in New Chip Technologies

[1] Varshith Raj C R, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1] vaj72944@gmail.com , [2] dr.pavithrag.8984@gmail.com, [3] tcmanju@iitbombay.org

ABSTRACT

The rapid evolution of semiconductor technology necessitates continuous innovation and development to meet the increasing demands for performance, efficiency, and miniaturization. Robotic applications in semiconductor research and development (R&D) have emerged as a pivotal factor in accelerating this innovation. This paper explores the integration of advanced robotics into semiconductor R&D processes, highlighting their role in enhancing precision, reducing human error, and increasing throughput. Key applications include automated wafer handling, precision alignment, and defect inspection, which significantly streamline the fabrication and testing phases of new chip technologies. Additionally, robotics facilitate high-throughput experimentation and data collection, enabling more efficient exploration of novel materials and device architectures. By leveraging robotics, the semiconductor industry can achieve faster prototyping cycles, lower production costs, and improved product reliability. This study underscores the transformative potential of robotics in semiconductor R&D, paving the way for the next generation of chip technologies.

The semiconductor industry is at the forefront of technological advancement, continuously pushing the boundaries of performance and miniaturization. To sustain this momentum, research and development (R&D) processes must evolve rapidly, a challenge that is increasingly being met through the application of robotics. This paper examines the critical role of robotics in semiconductor R&D, focusing on how they expedite innovation and development in new chip technologies. By automating repetitive and precision-dependent tasks such as wafer handling, alignment, and defect inspection, robots significantly

enhance accuracy and efficiency while minimizing human error and contamination risks. Furthermore, robotics enable high-throughput experimentation and comprehensive data acquisition, which are essential for the exploration of new materials and device architectures. The integration of robotics into semiconductor R&D not only accelerates prototyping cycles but also reduces production costs and enhances the reliability of final products. This study highlights the transformative impact of robotics on the semiconductor industry, emphasizing their importance in driving the next wave of technological breakthroughs in chip development.

***Keywords**: Robotics, Semiconductor R&D, Chip technologies, Automation, Wafer handling, Defect inspection, High-throughput experimentation, Data acquisition, Prototyping cycles, Production costs, Product reliability.*

Optimizing Semiconductor Supply Chains - The Role of Robotics in Inventory Management, Logistics, and Distribution

[1] Varsha M Hammigi, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1] varshahammigi@gmail.com, [2] dr.pavithrag.8984@gmail.com, [3] tcmanju@iitbombay.org

ABSTRACT

The semiconductor sector, which is crucial to contemporary technology, must contend with issues like shifting consumer demand, quickening technological progress, and interruptions in the worldwide supply chain. Supply chains for semiconductors must be optimized in order to increase productivity, cut expenses, and guarantee on-time product delivery. Because they can operate in dangerous environments and provide accuracy and dependability, robotics is essential to this improvement. Robotic automated storage and retrieval systems (AS/RS) improve stock accuracy, lower human error rates, & maximize storage capacity in handling inventory. Stock outs and the excess are reduced when robots with machine learning and artificial intelligence features enhance demand forecasting, optimize inventory levels, and automate reordering procedures. Drones and automated guided vehicles (AGVs) in logistics reduce labor costs and increase throughput by enabling fast inventory checks, efficient material handling, and transportation. Robotic arms and conveyors with sensors and vision systems in distribution control small parts precisely, minimizing damage and guaranteeing product quality. Real-time tracking is made possible by automated technologies, which improve visibility and agility in the event of supply chain problems. Robotics integration improves resilience, efficiency, and flexibility throughout the semiconductor supply chain, helping the sector to stay competitive and adapt to changing consumer expectations.

***Keywords**: AS/RS, AI, Machine Learning, AGVs, Drones, Industrial Robots, Efficiency, Semiconductor Supply Chain, Inventory Management, Logistics, Distribution, Robotics.*

Nanorobotic Systems for Biosensing - Improving Sensitivity and Accuracy in Disease Detection and Monitoring

[1] Siri H. H, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1] sirihh2001@gmail.com, [2] dr.pavithrag.8984@gmail.com, [3] tcmanju@iitbombay.org

ABSTRACT

Nanorobotic systems are revolutionizing biosensing by significantly enhancing the sensitivity and accuracy of disease detection and monitoring. This review examines the role of nanorobots in improving biosensing technologies, focusing on their ability to detect very low levels of biomarkers with high precision. By utilizing nanoscale sensors and advanced materials, these systems can provide earlier diagnosis and better tracking of diseases. The paper highlights key innovations in nanorobot design, their operational principles, and their applications in clinical settings. It also addresses the challenges faced in this field and explores future prospects, including integration with wearable technology and personalized medicine.

Keywords*: Nanorobotic Systems, Biosensing, Sensitivity Enhancement, Accuracy Improvement, Disease Detection, Disease Monitoring, Nanoscale Sensors, Biomarkers, Clinical Diagnostic.*

Microbots and Nanobots in Environmental Health Applications in Water Purification, Pollution Detection and Bioremediation purposes

[1] Rakshitha C, [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1]rakshitha.csreddy@gmail.com, [2]dr.pavithrag.8984@gmail.com, [3]tcmanju@iitbombay.org

ABSTRACT

Water is an essential resource for all life, yet its scarcity and pollution have become pressing global issues. Contaminants such as plastic waste, metals, industrial toxins, pharmaceuticals, pesticides, and oil are significant environmental threats as they affect less than 1% of Earth's accessible freshwater. Micro and nanobots provide new methods for water purification, pollution identification, and bioremediation by utilizing their compact size and special characteristics to effectively eliminate contaminants. Light-responsive microbots and nanobots offer unique benefits by using light for both propulsion and breaking down pollutants through photocatalysis. Furthermore, enzyme-facilitated bioremediation and processes involving microorganisms are acknowledged as sustainable approaches to tackling newly arising pollution concerns. Microbots and nanobots improve these processes by transporting substances that kill bacteria, disintegrating bacterial biofilms, and offering accurate cleaning with little harm to the environment. Their ability to operate independently, adjust to different situations, and monitor in real-time ensures effective and affordable clean-up of the environment. Microbots and nanobots, advanced technological innovations, offer hope for reducing water pollution and protecting ecosystems, leading to a healthier environment for present and future generations.

***Keywords**: Microbots, nanobots, Bioremediation, Water purification .*

Integrating Robotics in Semiconductor Packaging - Enhancing Speed, Accuracy, and Reliability in Advanced Packaging Technologies

[1] Prajwal Prasad R, [2] Dr Pavithra G, [3] Dr T C Manjunath
[1] Second Sem PG Student, M.Tech, [2] Associate Professor,[3] Professor
[1 2 3] Dept. of Electronics &Communication Engineering,
Dayananda Sagar College of Engineering, Bangalore
[1] prajwalspice007@gmail.com , [2] dr.pavithrag.8984@gmail.com,
[3] tcmanju@iitbombay.org

ABSTRACT

The semiconductor industry is at the forefront of technological innovation, demanding ever-increasing precision, speed, and reliability in manufacturing processes. Advanced packaging technologies, which involve the assembly and interconnection of semiconductor devices, have become crucial in meeting these demands. Integrating robotics into semiconductor packaging represents a significant leap forward, offering numerous advantages over traditional manual and semi-automated methods. This paper explores the integration of robotics in semiconductor packaging, highlighting how robotic systems enhance speed, accuracy, and reliability. Automated robotic systems streamline the packaging process, reducing human error and increasing throughput. Precision is achieved through advanced sensors and control algorithms, ensuring consistent and defect-free packaging of delicate semiconductor components. Furthermore, robotics provides unparalleled reliability, with robust systems capable of operating continuously under stringent conditions, minimizing downtime and maintenance needs. This paper also examines case studies and real-world applications, showcasing the impact of robotics on yield improvement and cost reduction in semiconductor packaging. Challenges associated with robotic integration, such as the need for specialized equipment and training, are discussed alongside potential solutions and future trends

Keywords*: Robotics, Semiconductor packing, Advanced packing technologies, Automation, Precession manufacturing, Yield improvement, Manufacturing efficiency, Reliability, Process Optimization, Industrial Automation*

Future Trends in Space Exploration Robotics - Facilitating Long Term Human Presence on Other Planets

[1] Pooja Nashipudi , [2] Dr. Pavithra G, [3] Dr. T.C. Manjunath
[1] 2nd Sem M.Tech.(VLSI Design & Embedded Systems), [2] Associate Professor, [3] Professor
[1 2 3] Department of Electronics & Communication Engineering, Dayananda Sagar College of Engineering, Bangalore, Karnataka, India
[1] poojanashipudi960@gmail.com,[2]dr.pavithrag.8984@gmail.com,[3]tcmanju@iitbombay.org

ABSTRACT

The goal of this article is to facilitate human presence on other planets for an extended period of time by investigating future developments in space exploration robots. It looks at the state of technology, ongoing projects, and potential uses of robotic systems in space exploration in the future. The talk focuses on how these developments will help with important issues like building habitats, extracting resources, and maintaining a sustainable lifestyle on other worldly bodies, eventually opening the door for human habitation beyond Earth.A significant step forward in space exploration is being made with the NASA Artemis program and the Lunar Gateway, which will help build a sustained human presence on the Moon by the end of this decade and lay the groundwork for upcoming trips to Mars. A number of progressively challenging missions are part of the Artemis program, which aims to test new technology, investigate the lunar surface, and gather vital experience for manned deep space missions. An orbiting station called the Lunar Gateway, which will serve as a staging area for astronauts, research, and technology testing, is at the centre of this endeavour. The Artemis missions will carry out scientific study, resource utilization, and habitat construction on the Moon by utilizing advanced space exploration robots and human-robot collaboration. The initiative seeks to lessen dependency on Earth-based resources by utilizing autonomous systems and in-situ resource utilization (ISRU), allowing for more environmentally friendly operations. Because of its modular design, the Gateway will be able to be assembled and expanded gradually, supporting a range of mission profiles and global alliances.

Keywords*: Space Exploration robotics, Artificial intelligence, Habitat Construction, 3D printing, In-situ resource utilization (ISRU), Mars rovers, Lunar exploration, Space missions, Space engineering challenges.*

Underwater Robotics in Marine Research- Contributions to Deep – Sea Ecosystem Studies and Underwater Archaeology

[1] Nandini H S , [2] Dr Pavithra G, [3] Dr T C Manjunath
[1] Second Sem PG Student, M.Tech, [2] Associate Professor,[3] Professor
[1 2 3] Dept. of Electronics &Communication Engineering,
Dayananda Sagar College of Engineering, Bangalore
[1] nandininandinihs@gmail.com , [2] dr.pavithrag.8984@gmail.com,
[3] tcmanju@iitbombay.org

ABSTRACT

Underwater robot technologies are crucial for marine resource exploration and autonomous manipulation, and many breakthroughs have been achieved with key indicators (e.g., dive depth and navigation range). However, due to the complicated underwater environment, the state-of-the-art sensing technologies cannot handle all the needs of underwater observations. To improve the independent operating capabilities of underwater robots, underwater sensing technology must be developed quickly. Therefore, in this paper, we first introduce the development of underwater robot platforms. We next go over various important detecting technologies, like underwater acoustic sensing, underwater optical sensing, underwater magnetic sensing, and underwater bionic sensing. Finally, we discuss the challenges of underwater sensing technology and future directions for overcoming these challenges, such as underwater bionic sensing, new underwater material development, multisource information fusion, and the development of generic test platforms.

Keywords*: Underwater robot; Underwater robot sensing, Acoustic sensing, Optical sensing, Magnetic sensing, Bionic sensing.*

Enhancing Precision and Efficiency - The Role of Robotics in the Semiconductor Industry's Manufacturing Processes and Quality Control Systems

[1] Mohan Kumar R , [2] Dr. Pavithra G, [3] Dr. T C Manjunath
[1] Second Sem PG Student, M.Tech, [2] Associate Professor,[3] Professor
[1 2 3] Dept. of Electronics &Communication Engineering,
Dayananda Sagar College of Engineering, Bangalore
[1] rmohankumar1609@gmail.com, [2] dr.pavithrag.8984@gmail.com,
[3] tcmanju@iitbombay.org

ABSTRACT

The semiconductor industry is a cornerstone of modern technology, driving advancements across various sectors. As the demand for higher performance and miniaturization of semiconductor devices continues to grow, the industry faces increasing challenges in manufacturing precision, efficiency, and quality control. Robotics has emerged as a pivotal solution in addressing these challenges, offering unparalleled accuracy, consistency, and productivity. This paper explores the integration of robotics into the semiconductor manufacturing processes and quality control systems, examining the types of robots utilized, their roles in key processes, the benefits they bring, and the challenges faced. Through detailed analysis and case studies, we illustrate how robotics is revolutionizing the semiconductor industry, paving the way for future innovations and developments.

Keywords*: Robotics in the Semiconductor, Manufacturing Processes, Quality Control Systems.*

Biomedical Nanorobots - Exploring Their Potential in Cancer Treatment, Infection Control, and Genetic Therapy

[1] Jonathan Vishwas , [2] Dr. Pavithra G, [3] Dr. T C Manjunath
[1] Second Sem PG Student, M.Tech, [2] Associate Professor,[3] Professor
[1 2 3] Dept. of Electronics &Communication Engineering,
Dayananda Sagar College of Engineering, Bangalore
[1] jonathanvishwas@gmail.com, [2] dr.pavithrag.8984@gmail.com,
[3] tcmanju@iitbombay.org

ABSTRACT

The application of nanotechnology with the new electronic materials led to the development of nanorobots. Nanorobots, in the nano scale region are capable of entering the cell for diagnosis, treatment and surgery. Due to its wide range of applications, nanorobots are designed with specific materials and design technologies. Since the biocompatible materials are used in the design of nanorobots, they are chemically inert and the problem of toxicity is avoided. The nano scale size allows the targeted delivery of drugs to the specific site without affected the normal surrounding cells. Nanorobots can move freely in the bloodstream due to the Brownian motion. This review clearly explains the various biomedical applications of the nanorobots.

Keywords*: Nanorobots, diagnosis, treatment, surgery*

Automation in Semiconductor Fabrication - The Impact of Robotics on Yield Improvement and Production Scalability in Fab Labs

[1] Harish T, [2] Dr. Pavithra G, [3] Dr. T C Manjunath
[1] Second Sem PG Student, M.Tech, [2] Associate Professor,[3] Professor
[1 2 3] Dept. of Electronics &Communication Engineering,
Dayananda Sagar College of Engineering, Bangalore
[1] harish9071677938@gmail.com , [2] dr.pavithrag.8984@gmail.com,
[3] tcmanju@iitbombay.org

ABSTRACT

The semiconductor industry continually seeks innovations to enhance yield rates and production scalability in fabrication labs. This project investigates the transformative role of robotics in achieving these objectives. Robotics, with their precision and adaptability, are increasingly integrated into semiconductor manufacturing processes to streamline operations and minimize human error. This study explores how robotic systems contribute to yield improvement by optimizing wafer handling, enhancing process uniformity, and reducing contamination risks. Additionally, the scalability of production lines is examined through the deployment of robotic automation, which allows for flexible reconfiguration and efficient scaling of manufacturing capacity. Through a comprehensive review of existing literature and case studies, this research provides insights into the tangible benefits of robotics in semiconductor fabrication, highlighting their potential to revolutionize manufacturing efficiency and product quality

.***Keywords***: *Robotics, Semiconductor Fabrication, Yield improvement, Production scalability, Automation*

Automated Optical Inspection Systems -Leveraging Robotics for Defect Detection and Quality Assurance in Semiconductor Manufacturing

[1] Gowthami G R, [2] Dr. Pavithra G, [3] Dr. T C Manjunath

[1] Second Sem PG Student, M.Tech, [2] Associate Professor,[3] Professor
[1 2 3] Dept. of Electronics &Communication Engineering,
Dayananda Sagar College of Engineering, Bangalore
[1] gowthamig443@gmail.com, [2] dr.pavithrag.8984@gmail.com,
[3] tcmanju@iitbombay.org

ABSTRACT

One of the sectors with the most innovation, competitiveness, and rate of change is electronics. The items' quality requirements need to be upheld if electronics components are to fulfill the increasing consumption needs. One method for non-destructive quality testing of different products is automatic optical inspection (AOI). This method is regarded as reliable and can take the position of human inspectors, who suffer from boredom and exhaustion when carrying out inspection duties. Electronics is one of the sectors with the most innovation, competitiveness, and change rate The goods' quality requirements must meet the enormous expectations placed on electronics components. Nowadays, many businesses use automated optical inspection systems for printed circuit board assembly inspection, however, the majority of these systems have limited functionality, are enormous, come at a high cost, etc.

Keywords*: Automated optical inspection solution, Printed circuit board inspection, Micro-sized defect, Machine vision. Manufacturing process.*

Optimizing Text Summarization through Pre-Trained Transformer Models

[1] Apoorva Prabhu, [2] Prajwal Achar T, [3] Sumita V Shetty, [4] Padma Prasada
[1 2 3] UG Students, [4] Associate Professor
[1 2 3 4] Department of Artificial Intelligence and Data Science, Sri Dharmasthala Manjunatheshwara Institute of Technology, Ujire-574240, Karnataka, India
[3] sumitashetty19@gmail.com

ABSTRACT

Text summarization is regarded as an essential task in Natural Language Processing (NLP) for shortening long text bodies into concise summaries while retaining necessary information. The importance of summarization has been raised by the expanding universe of digital content for information seeking and decision making. In this paper, extractive and abstractive summarization methods are examined. Extractive methods focus on selecting important sentences through linguistic elements, while original sentences are generated by abstractive approaches. Improvements in these models have been driven by breakthroughs in machine learning, including work on Transformers, CNNs, and RNNs. Hybrid solutions employing both methods are also explored, along with the introduction of evaluation metrics and associated complications. The latest NLP summarization techniques, their implications, and ethical considerations are summarized in detail.

Keywords: *Text Summarization, Natural Language Processing, Deep Learning, T5 Transformers, Ethical Considerations.*

Zone Routing Protocol (ZRP) Based Effective Cluster Based Re-Broadcasting (ECR-B) to Control Broadcast Storm for Driver Safety in VANET

Dr. R. Shiddharthy
Assistant Professor
Nallamuthu Gounder Mahalingam College, Pollachi
gurushiddharthy@gmail.com

ABSTRACT

The development of networks and technology has prompted the integration of safety systems into automobiles. Vehicular Ad-hoc Networks (VANET) is one among the rising area to alert dangerous situations among roads, as road safety is a concern for everyone. VANET connecting vehicles to broadcasting messages with one another for safety purposes. VANET broadcast messages in dense area, therefore it can lead to message retransmission, transmission failures, which in turn can cause collisions. The rebroadcast of messages led to broadcast storm. The main aim is to reduce the redundant data transmission by sending the packets to the appropriate node. The proposed Effective Cluster based Re-Broadcasting (ECR-B) clustering the vehicle based on Zone Routing Protocol (ZRP) and transmit packets from a single node to every node within their transmission range with ensure highest throughput and Packet Delivery Ratio (PDR).

Keywords*: VANET, Broadcast Storm, ZRP, PDR .*

ARTIFICIAL INTELLIGENCE

Exploring the Frontiers...

[1] Nikhitha C, [2] Mohammed Junaid Raza
[1] Assistant Professor, [2] 2nd year UG student
[1 2] Dept. of E&C, Bearys Institute of Technology, Innoli, Mangalore.

ABSTRACT

Artificial Intelligence emerged as a transformative force across various domains, revolutionizing industries, and reshaping societies. This abstract delves into the Multifaceted landscape of AI, encompassing its diverse applications, methodologies and implications. From machine learning algorithms that learn data to deep neural networks inspired by human brain. AI continues to push boundaries in understanding and replicating complex cognitive processes. Furthermore, it explores societal impacts of AI-driven automation, Job displacement and the need of upskilling in the workforce.

***Keywords**: Artificial Intelligence, Human brain, Automation.*

Deepfake Detection Using Deep Learning

[1] Pradhyumna T S, [2] Rahul A Dodamani, [3] Tejas J, [4] Veeranna Kotagi
[1 2 3] Students, [4] Assistant Professor
[1 2 3 4] Dept. of Information Science and Engineering ,
Nitte Meenakshi Institute of Technology , Bengaluru, India
[1] pvradhyu@gmail.com , [2] dodamani5593@gmail.com , [3] tejasjuturu@gmail.com,
[4]Veeranna.ak@nmit.ac.in

ABSTRACT

Advances in machine learning have led to the creation of deepfake videos, which are a serious threat to the integrity and authenticity of online audiovisual content. This research responds to this by presenting a novel method of detecting deepfake movies by combining AlexNet with Long Short-Term Memory (LSTM), Recurrent Neural Networks (RNN), and Convolutional Neural Networks (CNN). In order to improve detection accuracy, the suggested system makes use of the discriminative ability of CNNs to extract spatial features, RNNs to capture temporal relationships, and AlexNet with LSTM to integrate both spatial and temporal information. We achieve state-of-the-art performance in deepfake detection by extensive experimentation on benchmark datasets, demonstrating the efficacy of our approach. Additionally, we shed light on how the model's decision-making process may be understood, which will increase confidence and openness in the detection [1].

Keywords*: CNN, RNN, LSTM*

Performance of GLCM Algorithm in Extracting Features from Radiographic Images for Lung Disease Detection

[1] C. Keerthana , [2] Dr. B. Azhagusundari
[1] Research scholar, [2] Associate Professor
[1 2] Department of Computer Science
Nallamuthu Gounder Mahalingam College, Coimbatore, India
[1] keerthanasabari24@gmail.com , [2] azhagumithra78@gmail.com

ABSTRACT

Feature extraction plays a essential role in image analysis. This study primarily aims to utilize the T-test algorithm to detect lung anomalies based on X-ray images. This approach could be valuable for the early detection of lung anomalies, allowing for treatment before they progress into tumors or cancer. The dataset for this study includes 50 images, with 25 representing normal lungs and 25 depicting abnormal lungs. Two methods are employed in this research: the T-test for lung image classification and the Grey Level Co-occurrence Matrix (GLCM) for feature extraction. To enhance image brightness, lung images are converted to Graycomatrix prior to feature extraction. The final step involves image classification using the T-test algorithm. In this study, 50 test results were analyzed, and the GLCM method successfully extracted 8 features that effectively differentiate between normal and abnormal lung images. The T-test algorithm showed that each feature had a P-value of less than 0.05, indicating that these features are suitable for further classification of lung abnormalities. Therefore, this research framework, which incorporates both the GLCM method and the T-test algorithm, has the potential to aid in the early diagnosis of lung diseases.

***Keywords**: Feature Extraction, GLCM, Lungs, Image Classification.*

Predicting Autism Spectrum Disorder in the Early Stage Using Various Hyperparameter-Tuned Machine Learning Classifiers

[1] M. Murali Anand, [2] S. Kanchana

[1] Department of Computer Science and Applications, Faculty of Science and Humanities, SRM Institute of Science and Technology, Vadapalani, Chennai, Tamil Nadu, 600026, India

[2] Department of Computer Science, Faculty of Science and Humanities, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, 603203, India

[1] muraliam@srmist.edu.in, [2] drkanchanas20@gmail.com

ABSTRACT

Autism affects both the social and personal lives of individuals and can affect the development of society as a whole. Therefore, early detection of autism spectrum disorder (ASD) is a critical need for humanity. Although considerable research has been conducted on ASD diagnosis using machine learning (ML) techniques, there is a substantial gap in the pre-processing of raw datasets. In this study, we conducted a comparative analysis of various traditional and ensemble Machine Learning (ML) classifiers while maintaining well-structured data preprocessing steps. We proposed a model to predict autism spectrum disorder (ASD) using two datasets of all age groups obtained from the UCI Machine Learning Repository. We used six traditional ML classifiers: Naive Bayes (NB), Support Vector Machine (SVM), Logistic Regression (LR), Random Forest (RF), Extra Tree (ET), and Decision Tree (DT). Additionally, we used packing and boosting classifiers to improve performance, with traditional classifiers acting as baseline estimators. Their performance was evaluated using various statistical estimation measures. We also used a 10-fold randomized cross-validation (RandomizedSearchCV) technique to identify optimal hyperparameters. The study concludes that DT (boosting), LR (conventional) and SVM (boosting) are the best performing models for adolescent, child and adult datasets, respectively. These models effectively preserved the predicted properties while minimizing biases.

Keywords: *Autism Spectrum Disorder, Hyper-parameter Tuning, Ensemble Learning, Machine Learning, Classification.*

Blood Test and Scanning Report Analysis Using AI

[1] Dr. Ugranada Channabasava, [2] Raghu Nandan R
[1] Associate Professor, [2] Assistant Professor
[1] Department of Information Science, Don Bosco Institute of Technology, Bengaluru, India
[2] Department of Artificial Intelligence and Data Science, Navkis College of Engineering
[1] channasan11@gmail.com, [2] raghu.siet@rediffmail.com

ABSTRACT

This paper integrates cutting-edge computer vision techniques used to enhance the medical diagnostics by simultaneously addressing two critical aspects of healthcare—blood sample analysis for leukemia and brain hemorrhage classification in MRI images. Leveraging the YOLO (You Only Look Once) algorithm, our system employs deep learning to efficiently detect and classify various stages of leukemia in blood samples. YOLO's real- time object detection capabilities enable swift identification of abnormal cells, facilitating early diagnosis and intervention. The model is trained on a comprehensive dataset, ensuring robust performance across diverse cases. In parallel, Convolutional Neural Networks (CNNs) are employed for the intricate task of brain hemorrhage classification in MRI scans. The CNN model learns complex hierarchical features from brain images, enabling it to accurately differentiate between different types and stages of hemorrhages. This dual-faceted approach aims to provide a comprehensive diagnostic tool, facilitating healthcare professionals in timely and accurate decision-making.

Keywords: *YOLO (You Only Look Once), Convolutional Neural Networks (CNN), hemorrhages, leukemia.*

A Comprehensive Study of Datasets for Research Works in IOT Networks

[1] Suparna N, [2] Manjaiah D H
[1] Research Scholar, [2] Senior Professor
[1 2] Department of PG studies in Computer Science and Research, Mangalore University.

ABSTRACT

Internet of Things is a trending subject in the field of Computer Science and Information Technology. When a research scholar tries to find a problem statement in the arena of IoT, he or she probably Google the phrase "Security Issues in Internet of Things". On this day August 22, 2024, when we searched the Google with this phrase, we got about 48,40,00,000 results in 0.46 seconds. When we searched Google Scholar with the same phrase, we got about 40,70,000 results (0.52 sec). This shows that lakhs of researchers are toiling to find solutions for Security Issues in IoT. There are mainly 3 ways to conduct research in the field of security issues in IoT. First one is setting up working projects in real world with actual sensors, actuators, gateways, storage devices and internet connections. This is expensive and the maintenance of the entire set up is tedious. But the advantage is, the researchers can accumulate or create original and highly reliable datasets. The second method is setting up a lab model using micro controllers, sensors and one or two appliances/things. This method is economical and easier to install. But the disadvantage is we cannot expect large quantity of data, and the dataset created may not be accurate. The third method is to use simulators and create virtual environments of IoT networks. This method is more feasible and inexpensive as there is no need of buying any devises. Moreover, the codes written in simulators can be directly written onto the actual devices represented in the simulators. The datasets generated using this set up depend on the performance of the computer system in which the simulator is running. Hence these datasets cannot be standardized. There is new and trending way of research that is finding solutions for issues in IoT using Machine Learning and Deep Learning Models. ML and DL algorithms need large sets of Data to train and test the algorithms. This made us to take up a study on available Datasets for this research topic. When we made review of literature, in this arena of study, we found that researchers are working on only a few

datasets, though numerous datasets are available on the internet freely for academic purposes. Hence in this paper we made a comprehensive study of Datasets available for research works in Internet of Things.

***Keywords**: Internet of Things, Deep Learning Models, Machine Learning.*

A Deep Learning Approach for Human Segmentation

[1] Dr. N. Balakumar, [2] S. Tharani, [3] V. Kalaivani
[1] Head and Assistant Professor, [2] Assistant Professor
[1 2 3] Department of Computer Science, United College of Arts and Science, Coimbatore
[1] balaucas@uit.ac.in, [2] tharaniucas@uit.ac.in , [3] kalaivaniucas@uit.ac.in

ABSTRACT

Human segmentation is a fundamental task in computer vision that aims to accurately identify and delineate human objects or regions within an image. This method is essential for many applications, including image editing, object recognition, and human-computer interaction. Deep learning technology has proven its ability in recent years great potential in solving segmentation challenges. One popular architecture for human segmentation is U-Net, a fully convolutional neural network (CNN) designed for semantic segmentation. U-Net's unique architecture, consisting of an encoder pathway for capturing contextual information and a decoder pathway for precise localization, allows it to effectively extract features and generate accurate segmentation masks. By leveraging U-Net's encoder-decoder structure, the model effectively captured contextual information and achieved precise localization. This allowed for accurate and reliable identification and delineation of human objects or regions within images. U-Net's ability to handle complex spatial relationships, occlusions, and variations in pose or appearance enabled robust human segmentation in diverse image scenarios. The integration of U-Net facilitated the automatic extraction of relevant features and the generation of accurate segmentation masks, contributing to the success of the human segmentation task.

Keywords: *Segmentation, U-Net, convolutional neural network.*

An Algorithmic Approach to a Class of Graceful Cyclic Digraph

[1] Kumudakshi, [2] Ancy Dsouza
[1] Associate Professor, [2] Research Scholar
[1] Department of Mathematics, NMAM Institute of Technology, NITTE (deemed to be university), Nitte – 574110, Udupi Dist., Karnataka, India
[2] Research Center, NMAM Institute of Technology, NITTE (deemed to be university) (Visvesvaraya Technological university (VTU), Belagavi) Nitte – 574110, Udupi Dist., Karnataka, India
[1] skumudakshi@nitte.edu.in, [2] ancydsouza@atharvacoe.ac.in

ABSTRACT

In a digraph D, which consists of m vertices and n arcs, each vertex l is given a distinct whole number g(v) chosen from the range {0, 1, 2, ..., n}. Subsequently, each arc ((p,q)) is assigned a value g(p,q) , such that g(p,q) = (g(q) - g(p)) mod (n+1) . If all the resulting values for the arcs are unique, then such a labeling can be referred to as a graceful type labeling of the directed graph. In literature, one can see, how these graceful digraphs are related to some of the algebraic structures. This paper examines specific variations of partition problems to demonstrate graceful nature of certain categories of directed or oriented cyclic graphs.

***Keywords**: Oriented graphs, Graceful digraph, partition problem.*

Enhancing Underwater Images: A Hybrid UDCP-GDCP with Weight Maps Proposed Approach

[1] Dr. Arun Anoop M , [2] Sharad Shandhi Ravi
[1] Associate Professor , [2] Assistant Professor
[1] Department of Computer Science & Engineering,
Vivekananda College of Engineering & Technology, Puttur, Karnataka, India.
[2] Dept. of CSE(AIML), AJ Institute of Engineering & Technology, NH-66, Kottara Chowki, Mangaluru, Karnataka
[1] arunanoopm@gmail.com

ABSTRACT

Underwater images often suffer from degradation due to light absorption and scattering, leading to poor visibility and color distortion. This presents challenges for various underwater applications, such as marine research, underwater robotics, and recreational photography. To tackle this issue, we propose a novel fusion-based underwater image enhancement technique that utilizes illumination-aware UDCP-GDCP with CIS (Chromatic-Illumination-Saliency) Weight maps. This study includes a comparative analysis of several image enhancement techniques designed for underwater imagery, focusing on fusion-based methods that utilize different weight maps. GDCP (Gradient Domain Color Preservation) enhances the color and contrast of underwater images by preserving the gradient information. It operates in the gradient domain, adjusting the image's gradients to enhance visibility while maintaining color fidelity. UDCP (Underwater Dehazing Color Preservation) focuses on removing haze and improving clarity in underwater images. It utilizes atmospheric scattering models to estimate and remove haze, enhancing the overall quality of the image. Main investigation is added with primer evaluation based on different image operations and a utilization of different methods used and added a hybrid approach of UDCP and GDCP methods with different weight maps in guiding the enhancement process. For significant journal comparison, Retinex-based methods (SSR, MSR), Underwater Dark Channel Prior (UDCP), histogram prior, blurriness-based enhancement, and Gray-World Dark Channel Prior (GDCP) evaluation also added. A comprehensive evaluation is conducted to assess the performance of these techniques in enhancing the quality of underwater images. This research aims to

contribute to the development of robust and efficient solutions for improving underwater visibility and enabling accurate visual perception in challenging underwater environments.

***Keywords**: Underwater Image Enhancement Benchmark(UIEB) dataset, Underwater Image Enhancement, Fused CIS(Chromatic-Illumination-Saliency) with hybrid UDCP and GDCP Weight maps, Image dehazing, Significant Image Enhancement algorithms*

Plant Disease Prediction using Machine & Deep Learning with Pharmacy Factors

[1]Dr.Arun Anoop M, [2] Dr. Karthikeyan P, [3] Chaithanya A P, [4] Shankarprasad K S
[1] Associate Professor, [2] Professor, [3] PhD research scholar, [4] 2nd year BE Student
[1 4] Department of Computer Science & Engineering, Department of Computer Science & Engineering, Vivekananda College of Engineering & Technology, Puttur, Karnataka, India
[2] Department of Electronics & Communication Engineering, Velammal College of Engineering and Technology, Viraganoor, Madurai, Tamilnadu, India
[3] Department of pharmaceutics, BIHER(Deemed-to-be University), Chennai, India

ABSTRACT

The role of machine learning based artificial intelligence methods is more important in the case of agricultural fields. The importance of crop protection is required in agriculture field, to help farmers. Corn_(maize), Potato, Tomato, Cotton, Cassava Leaves have considered for this work, as we know that crop diseases are the major threat to food security. Primer evaluation processes based on 'crop_recommendation.csv' with the help of different supervised machine learning methods. Evaluation processes based on deep learning and it mainly focus on pooling, optimizers and different learning rates based on with or without data augmentation processes. And the prediction process focuses on train, test pair and without these pairs also considered. The proposed algorithm has been evaluated with the crop diseased, healthy images and accuracy detection performed to get efficient prediction using DL and the results compared with the other significant journals. Using a public dataset, which consists of images of corn, potato, cotton, cassava and tomato. In the case of tomato, classification accuracy achieved is 66%, cassava is 77%, together of corn, potato and tomato, the achieved classification accuracy is 99% with the help of feature scaling before CNN model creation. Finally model stacking method used for processing the best classification method among the different parameters of pooling and optimizers. In the case of large image dataset, we faced frequent system crash issue in entire google colab system, to avoid that, we may process feature selection methods in future. The paper done based on fine tuning measures by utilizing machine learning and deep learning techniques exclusively used for plant disease prediction. The paper highlights the crop diseases they focus on, the models employed, sources of data used and

overall performance according to the performance metrics employed for plant disease prediction. Fine tuning based proposed findings indicate that Deep Learning provides the highest accuracy, outperforming existing commonly used disease identification techniques and this high accuracy is required to localize the images accurately.

***Keywords**: Image processing, Machine Learning based Plant disease prediction, CNN based Plant disease prediction*

Intelligent Green Infrastructure for Water Management Based on Analysis of Internet of Things

[1] Sushmitha Vadone V, [2] Dr. Sibi Shaji, [3] Dr. B. Meenakshi Sundaram
[1] Research Scholar, [2] Assistant Professor, [3] Professor
[1 2] School of Computational Sciences and Information Technology, Garden City University, Bangalore
[3] Department of CSE NHCE, Bangalore
[1] sushmithavadone@gmail.com, [2] sibi.shaji@gardencity.university,
[3]Bmsundaram@gmail.com

ABSTRACT

Green Infrastructure plays a vital role in civic areas which contribute to sustainable development. With green infrastructure, Internet of Things (IoT) technology uses real time data and thus helps for water management more efficiently. To manage and regulate the water pressure in the pipelines, sensors are used as intelligent solutions which collects real time data.

Keywords: *Green Infrastructure (GI), Internet of Things (IoT)*

Bore Well Site Selection by Using Artificial Neural Network (ANN) Model

[1] Dr. R. SenthilKumar, [2] Dr. A. Bharathi
[1 2] Professor
[1] Alva's Institute of Engineering and Technology, Mangalore, Karnataka.
[2] Bannari Amman Institute of Engineering and Technology, Sathyamangalam, Tamilnadu.
[1] senthil2481@gmail.com, [2] bharathia@bitsathy.ac.in

ABSTRACT

The increasing reliance on groundwater for agricultural, industrial, and domestic purposes has intensified the need for efficient and accurate bore well site selection. Traditional methods largely dependent on geological surveys and expert judgment, are often costly, time consuming, and prone to uncertainties. This study explores the application of Artificial Neural Networks (ANNs) to predict suitable bore well locations based on soil characteristics and geospatial data. By integrating soil parameters such as texture, moisture content, permeability, and nutrient composition with topographical features and historical bore well success rates, we aim to develop a robust predictive model. The ANN model was trained on a comprehensive dataset [1] and validated using real-world data [2]. The model achieved a prediction accuracy of 85%, significantly outperforming conventional methods. Performance evaluation metrics, including precision, recall, and F1-score, were used to assess the model's effectiveness. Our results demonstrate that the ANN-based approach enhances prediction accuracy, reducing the risks and costs associated with bore well drilling. This research not only offers a scalable solution for sustainable groundwater management but also provides a framework for integrating AI-driven predictions into existing bore well planning and management systems.

***Keywords**: Soil selection, moisture content, ANN model, F1 score.*

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TRACK 3

SUSTAINABLE PRACTICES IN ENGINEERING AND SCIENCE

Experimental Study on Strength of Concrete Using Recycled Aggregates and Manufactured Sand

[1] Raghav Ravi Naik,[2] Ajith B T, [3] Arun Kumar H

[1]M.Tech student, [2]Assistant Professor, [3]AssosiateProfessor
[1 2 3] Department of Civil Engineering, K.V.G.C.E, Sullia, D.K, Karnataka, India
[1] raghavnaik0@gmail.com, [2] ajithbt85@gmail.com, [3] arunkumarh446@gmail.com

ABSTRACT

The study was conducted to evaluate the feasibility of using recycled coarse aggregates (RCA) and manufactured sand (M-sand) in place of natural coarse aggregates and natural river sand to make concrete. Due to the drastic growth in construction activities worldwide, there has been an increase in demand for construction materials such as natural coarse aggregates and natural river sand which in turn damages the environment and natural habitats. To overcome this problem, recycled coarse aggregates (RAP) and artificially made manufactured sand is utilized effectively. In this experimental study natural coarse aggregates (NCA) were substituted with recycled coarse aggregates at replacement rates of 0%, 25%,50%,75% and 100% respectively by weight and natural river sand was replaced by manufactured sand completely i.e 100 %. The developed concrete was tested for compression strength, split tensile strength, flexural strength and water absorption rate. The results of the laboratory study show that the hardened properties of concrete using 50 % recycled coarse aggregates and manufactured sand had the best optimum strength among all mixes and was greater than the control mix. Though, there was a reduction in strength for the 75 % and 100 % substitution of recycled coarse aggregates than the control mix. The combined use of recycled coarse aggregates and manufactured sand in concrete can be used as a replacement of natural coarse aggregates and natural river sand. While the RCA decreases the strength, the manufactured sand makes up by increasing the strength to achieve the optimal strength. The adoption of recycled coarse aggregates and manufactured sand provides benefits such as environmental sustainability through resource conservation, cost efficiency and reduction of construction wastes and landfill burdens

Keywords: *Recycled coarse aggregates, manufactured sand, concrete, replacement, optimum strength, compression strength.*

Use of microbially induced carbonate precipitation (MICP) in repairing concrete cracks: A review

[1] Ashwini H D, [2], Sneha Prabhakar
[1 2] Department of Civil Engineering
Bangalore Institute of Technology
[1] ashwinihd@bit-bangalore.edu.in, [2] drvpkn@aiet.org.in

ABSTRACT

Concrete cracking is a significant threat to the long-term safety and durability of structures. Recently, microbially induced calcium carbonate precipitation (MICP) has been increasingly used for concrete crack repair through biomineralization. Microbially induced calcium carbonate precipitation (MICP) is a bio-cementation technique that uses specific bacteria to catalyze calcium carbonate formation, enhancing cementitious composites. MICP offers a sustainable method to improve concrete permanence and strength. This technology could revolutionize construction and materials science, providing new solutions for infrastructure maintenance and repair. Cement Concrete crack repair using MICP involves biomineralization, with microbial concrete adding microorganisms during preparation for self-healing properties, and microbial healing agents filling cracks with bacteria and culture medium for repair. Concrete crack repair involves early prevention (e.g., prestressed steel bars, concrete curing) and later restitution using chemical agents like epoxy resin, which can be ineffective due to thermal mismatch and environmental factors. These agents may also cause secondary damage and pose environmental and health risks.

This work summarizes the state-of-the-art research on MICP technology, taking experimental investigations into account, and provides an explanation of the microbial mineralization mechanism through a comparison of different MICP types. The study explores the useful applications and limitations of these techniques, offering insights on the possibilities of MICP in sustainable building in the future. The goal of this thorough study is to improve knowledge and purpose of MICP in concrete rehabilitation.

***Keywords**: Microbially induced calcium carbonate precipitation (MICP), crack repair, biomineralization, infrastructure, maintenance.*

Monitoring the LULC Changes of Puttur Taluk, Using GIS

[1] Dhanya, [2] Dr.Sowmya N J
[1] PG Student, [2] Professor
[1] PG Student, Dept. of Marine Geology, Mangalore university
[2] Professor, Dept of Civil Engg. VCET, Puttur
[1] dhanyaptr2002@gmail.com

ABSTRACT

Land use and land cover are key indicators of regional environmental changes. Puttur taluk is located in the belt of the Western Ghats, where urbanization due to increasing population varies greatly from year to year. It would be useful to investigate land use and land cover of the area to know the rate of expansion and its effects on agriculture and water bodies. In this study change detection in LULC of Puttur taluk is done during the 21 years using the software ArcGIS and ERDAS Imagine. Unsupervised classification helped to find the change detection using satellite imagery acquired from 2003 to 2024. The study area is classified as water bodies, forests, areca nut, coconut, cashew, open land/paddy fields, and river beds. The study revealed that built-up area and areca nut land increased by approximately 47 sq. km. and 11 sq. km., respectively. Forest land, Paddy fields/ open land decreased and major changes were found in built-up areas, agriculture, and forest areas. The study shows that the region requires appropriate government efforts to address potential environmental and ecological issues caused by increased built-up land.

Keywords: *LULC, Built-up areas, Agriculture, Forest areas.*

Sustainable Aviation Fuels (SAF)

Divyanshi Arya
B.Tech ECE (Rail Specialization)
Gati Shakti Vishwavidyalaya (GSV)
divyanshi7.875@gmail.com

ABSTRACT

Roadways, Railways, Waterways and Airways are the 4 major components of any nation's transportation sector. Traditionally, the use of conventional fossil fuels was the driving force of these domains however, with the recent rise in environmental concerns there is a need to shift to other alternatives.

Based on recent reports aviation fuels in particular reins out as one of the biggest contributors to the high rising rates of carbon and particulate emissions. This has led to policies like Zero Carbon Emission till 2050 by IATA and an interest in the research and development of potentially more environment friendly aviation fuels named SAF (Sustainable Aviation Fuels).

This paper incites the creation of such a fuel takes into consideration factors starting with sourcing the origins of the fuel and going up to ensuring the physical and chemical properties like viscosity, density, ignition temperature are efficiently optimised. Another very important factor of consideration is the initial investments which will aid the research and development along with new infrastructure tailored to suit the parameters of this new fuel.

Changes to adapt this new fuel will also take place over a long period of time as the older technologies transition into the newer and more sustainable ones.

Currently the main area of research is focused on blending conventional fuels with SAF to produce a product which can be a fuel that closely resembles the properties of the former but better due to the reduced carbon emissions impact it can have.

The production of SAF has also undergone a series of developments and the sourcing of every possible method is biodegradable. Some of these fuels are also sourced from waste products which are no longer capable of human utilization and thus neither compete for resources with humans and nor accumulate to be dumped off to mountains of garbage.

The reason why fuels like SAF work is linked to its chemical composition which is mainly packed with alkanes and high non saturated components which ignite on lower ignition temperatures and don't leave unburned residue. In comparison conventional fuels are mainly comprised of cyclo/iso alkanes and aromatics which possess better stability and are also more likely to leave behind higher levels of unburned residue outside of ideal ignition conditions.

This explains the 80% carbon emissions drop, minimum 10% drop in particulate matter (PM) and other components. For example, an SAF called SPK (Synthetic Paraffinic Kerosene) is very popular and commonly used in blending.

To conclude with one can, say that SAF clearly has immense developmental potential and given that it's supported with the required research & development and support it will soon become an accessible reality for the field of aviation.

***Keywords**: Aviation , Carbon Emission ,Environment Friendly , Blending.*

An Experimental Investigation on Influence of Domestic Treated Waste Water on Fresh and Hardened Properties of Concrete – A sustainable Approach

[1] Bipin K , [2] Dr. Lekha B M , [3] Dr. Chandrashekhara A
[1] M.Tech student , [2] Professor, [3] Professor
[1 2 3] Department of Civil Engineering
KVGCE, Sullia, DK, Karnataka, India
[1] bipingowda7@gmail.com , [2] lekhabm@gmail.com, [3] acsnitk@gmail.com

ABSTRACT

The world's population will be facing water shortage problems by 2050. Recycling and treatment of residual/industrial waste water and reusing it in real life applications may help to solve the scarcity of water. However, the total cost of the treatment processes is estimated to be moderate when it comes to domestic treated waste water. This process may also reduce the consumption of drinking water, which is used by default in concrete fabrication and for washing purposes in concrete plants. This study mainly focuses on reuse of treated domestic waste water and compared with potable water for M40 grade concrete and evaluates its influence on their fresh and hardened properties. An experimental program is conducted by using 2 different types of waste water viz Portable water and domestic treated waste water. Fresh properties of concrete like slump and compaction factor tests are performed as per Indian standard IS:1199-1959. Likewise, mechanical properties of concrete like compressive strength, split tensile strength and flexural strength tests are performed for all the three mixes at 3, 7, 28, and 90 days curing period respectively Indian standard IS:516-1959. Similarly, durability properties of concrete water absorption, sorptivity, and rapid chloride penetration tests are performed for all the three mixes at 28 and 90 days curing period. Likewise, this experimental program also covers ultrasonic pulse velocity test to investigate the quality of concrete as per Indian standard IS:13311-1992.This study presents a promising sustainability key either for elimination of treatment cost or for water shortage that threatens many regions in the world.

Keywords: *Concrete, Potable water, Domestic treated waste water, Fresh properties, Hardened properties, Ultrasonic Pulse velocity.*

Seismic Analysis and Design of Bearys Pharmacy College Building for Adequacy and Recommending Suitable Retrofitting

[1] Dr. Purushothama C T , [2] Mohammad Hashim M
[1] Professor , [2] Engineer
[1] Bearys Institute of Technology Mangalore
[2] New Bharath Infratech Mangalore

ABSTRACT

Important existing buildings like hospitals, administrative buildings, heritage buildings, school buildings, college buildings, high-rise commercial buildings etc which are not designed for earthquake force should be analyzed and designed for earthquake force for the present strength and recommend suitable retrofitting if it is required. For this purpose validity of STAAD Pro has been done for a problem (21.2) from text book "Earthquake Resistant Design of Structures" by Pankaj Agarwal & Manish Shrikhande. The structure is a four story (G+3) RC Framed and is in Zone IV seismic analysis (equivalent static method)-confirming to IS1893-2002. Seismic force for each story from text book and STAAD Pro results are compared. Comparative results showed by graphs and table for validation. Existing Bearys Pharmacy College Building was taken to assess its structural adequacy for earthquake force. Structure was modeled, analyzed and designed by STAAD Pro for earthquake force with all load combinations and tabulated some of the important columns analysis and design results. Comparison of STAAD Pro design results has been made with existing design results and found deficiency in some of the columns, recommended suitable retrofitting for deficient columns.

Keywords: *Important buildings, Earthquake force, Seismic Design, Equivalent Static Method, STAAD Pro, Adequacy, Retrofitting.*

Developing A Bicycle Path By Joining The Existing Inner Lanes

[1] **Dr. Suman Kundapura ,** [2] **Deeksha Anand ,** [3] **Vamshavahini G**
[1 2 3] Civil Engineering Department
A J Institute of Engineering and Technology Mangaluru, India
[1] sumankundapura@yahoo.com

ABSTRACT

As urban centers face mounting issues such as traffic congestion, environmental pollution, and road accidents, promoting non-motorized transportation (NMT) has become an essential solution. This study investigates the development of a comprehensive bicycle pathway network designed to seamlessly integrate existing inner lanes and provide an eco-friendly, congestion-reducing national highway alternative for urban mobility. Focusing on connecting the AJIET campus, the project encompasses several objectives: designing the bicycle pathway, assessing soil strength characteristics, analyzing yearly vehicle emissions associated with the campus, planning and surveying for effective lane integration, estimating construction materials, and evaluating the pathway's energy efficiency. The study emphasizes a holistic approach that includes safety measures, ecological balance, community engagement, and regular maintenance to ensure usability and sustainability. By employing eco-friendly materials and integrating effective safety features, the project aims to enhance urban environments, promote active transportation, and foster healthier, more connected communities.

Keywords: *Bicycle pathway, Cyclist safety, eco-friendly materials, Data collection, Inner lanes.*

Analysis of Different Slope Failures Along the Road Section of Sakaleshpur Karnataka

[1] **H G Umeshchandra ,** [2] **Yogesh D S ,** [3] **Vinay Shivamurthy**
[1 3] Alva's Institute of Engineering and Technology
[2] Mysore College of Engineering & Management,
Mysore, India

ABSTRACT

Slope failures along road sections pose significant risks to infrastructure and public safety. In the Sakaleshpur region of Karnataka, India, such occurrences are frequent due to the complex geological and topographical features. This study presents analysis is of various slope failures along a specific road section in Sakaleshpur, employing a combination of rock mass classification and kinematic analysis approaches. The study begins with a comprehensive survey of the geological and topographical characteristics of the area, including rock types, structural features, and slope angles. Rock mass classification systems such as the Rock Mass Rating (RMR) and Geological Strength Index (GSI) are utilized to assess the stability of the slopes and identify potential failure mechanisms. By integrating field observations with these analytical methods, the study aims to provide insights into the underlying causes of slope failures in the Sakaleshpur region. The findings of this research will contribute to a better understanding of slope stability in similar geological settings and assist in the development of effective mitigation measures to minimize the risk of future slope failures along road sections in Sakaleshpur and other regions facing similar challenges.

Keywords: *Rock mass classification, slope stability, slope failures*

Experimental Investigations on Flexural Behaviour of Mortarless Interlocking Stabilized Mud Blocks

[1] Guru Prasad H S, [2] Shivapreran M, [3] H G Vivek Prasad
[1 2] Postgraduate Student, [3] Assistant Professor
[1 2 3] Department of CTM, JSS STU Mysuru
[1] pguru1288@gmail.com, [2] shivpreran15@gmail.com, [3] hgvprasad@sjce.ac.in

ABSTRACT

Stabilized mud blocks (SMBs) are units which are being produced soil, cement as stabilizer and with suitable amount of water, the mixture mixed into poured compacting equipment. Interlocking in stabilized mud blocks can be produced by making some modifications in the compacting machines. Providing interlocking in stabilize mud block technology has potential advantages such as construction of mortarless masonry structures which reduces the cost, time of construction. In this study an attempt has been made to study the flexural behaviour of mortarless interlocking stabilized blocks of size 230x190x80mm, by providing an interlocking effect of 20mm compared to conventional stabilized, mud blocks. In this analysis flexural strength of mortarless masonry is assed by testing both parallel and perpendicular bed joint masonry. The main findings indicate that the interlocking design significantly enhances the flexural strength and stiffness of the blocks, providing greater resistance to bending and cracking compared to traditional noninterlocking blocks with mortar. The study reveals that mortarless interlocking stabilized blocks can achieve high flexural performance without the use of mortar, thus making them a reliable option for sustainable construction. Additionally, the research identifies optimal stabilization ratios and interlocking configurations that maximize the blocks flexural behaviour. However, further research is needed to address the challenges of large-scale implementation and to refine the production process for consistent quality and performance.

***Keywords**: Stabilized Mud Blocks, Interlocking stabilized Mud Blocks, Mortarless Interlocking Stabilized Mud Blocks, Flexural strength.*

Study On Shear And Axial Behaviour of Masonry Prisms Using Cementitious Mortar

[1] Kishore N , [2] H G Vivek Prasad , [3] Dr D B Nirmala
[1] Postgraduate student , [2 3] Assistant Professor
[1 2 3] Department of CTM, JSS STU Mysuru
[1] kishorekarthik254@gmail.com, [2] hgvprasad@sjce.ac.in, , [3] nirmaladb@sjce.ac.in

ABSTRACT

The most commonly used fine aggregate in the world is river sand, currently it is out of occurrence and not cost effective and its depletion has vigorous effect on environment. At the same time production of wastes from industries which produces granite dusts which pollute both land and atmosphere is very high. Because of these, the reuse of wastes generated by granite industries came into pitcher to minimize the effects of dumped granite dusts and to overcome the scarcity of depletion of natural sources. At present there was huge demand for masonry units still the unreinforced masonry wall construction is famous India. Hence burnt bricks were most commonly used masonry units, which requires high energy consumption and cost for its production, such that it is essential to utilize alternative type of masonry unit which require less energy consumption and cost effective for the current demand. This paper focuses on analyzing use of locally available granite dust as a complete replacement for fine aggregate to produce rich cementitious paste. In these experimental investigations the characteristics strength properties for rich cementitious paste are determined by testing it for flexure, modulus of elasticity and compression strength. The test results shows that rich cementitious paste with granite dust combination of proportion 1:1, as beneficial effect on strength parameters as that of conventional cement mortars. The stabilized mud blocks were produced and casted for masonry prism with the as thin joints, 1:1 mix of cementitious paste with granite dust, cured for 28 days and tested for, shear and axial behaviour. Based on the results obtained from this study, it was concluded that cementitious paste can be employed with complete replacement of fine aggregate with granite dust as a substitute for a sand it can be used for masonry purposes.

Keywords: *Rich Cementitious Paste, Masonry Prism, Granite Dust, Complete Replacement.*

Meteorological Dynamics At Jezero Crater: A Comparative Study Of Perseverance Rover Data And Mars Climate Models During Dust Storm Season

[1] Manasa M.J, [2] B.R. Manjunatha
[1 2] Department Of Marine Geology
Mangalore University, Mangalagangothri Konaje-574199, Karnataka, India
[1] manasa964@gmail.com

ABSTRACT

Rovers and landers on Mars have experienced local, regional, and planetary-scale dust storms. The Perseverance rover landed on the Jezero crater on Mars. The Modeled data and processed mission data focused on diurnal meteorological observation with dust storm maximum solar scenario. MCD has more than 90 variables to study Mars and in rover we can study local meteorological studies. But this rover collects actual 5-6 data from this we can study meteorology. Mars commonly has local and regional dust storms, some of which grow into global dust storms. Dust is the key factor on Mars Climate. Observational data and modelled data almost similar values. In local suite on lander and rovers damage because of wind, dust storms then we get error data or sometimes it didn't collect data. Finding for best suite for landing and other scientific al study.

Keywords: *Mars, MCD, Dust, lander and rovers.*

Interface Fracture Studies In Recycled Coarse Aggregate Concrete (RAC) In Flexure With Digital Image Correlation Method

[1] Prashanth V P, [2] Suhruth S
[1] Assistant Professor, [2] Post Graduate Student
[1 2] Department of CTM,JSS STU Mysuru
[1] prashu.cvl@gmail.com, [2] suhruthrawson@gmail.com

ABSTRACT

Concrete interfaces are crucial in the stability, longevity and performance of concrete structures especially in situations like in mass concrete structures such as bridges, dams, and nuclear plants. Mechanical properties like compressive strength, split tensile strength and flexural strength are greatly affected by crack formation and growth within interfaces created between old and new layers of concrete. Consequently, the use of recycled aggregates results in additional ITZs that affect fracture properties. Despite comprehensive studies on RAC fracture properties, 100% replacement scenarios have not been fully explored. In this context, the current research is aimed at characterizing physical and mechanical properties of recycled aggregates as well as studying how they behave during flexure crashes subjected to predefined cracks. Three different RAC mixes with different water cement ratios were prepared using commercially available demolished aggregates. The specimens underwent three-point bending tests based on self-similar configurations within controlled CMOD rates. Interface conditions under investigation include intact interface, normal horizontal interface and grooved horizontal interface. Experimental results are calibrated using Digital Image Correlation (DIC) measurements, and stress and energy criterion methods are employed to predict the peak load required for interface failure. The study provides insights into the impact of concrete interfaces on fracture properties in RAC, contributing to the understanding of sustainable concrete materials and structural design practices.

Keywords: *Concrete, Fracture, Flexu•re, Strength, Digital Image C•o-relation.*

Study of Rainwater Harvesting in Puttur Taluk

[1] Prashantha , [2] Sandeep J Nayak
[1] Assistant Professor , [2] Visiting faculty
[1] Department of Civil Engineering, V.C.E.T, Puttur, D.K
[2] Research Mentor, Maharaja Institute of Technology, Tandavpur, Mysore.
[1] pkpura@gmail.com, [2] sandeejn1@gmail.com

ABSTRACT

In India, agriculture uses around 83% of the water that is available. As a result, it's essential to save and retain the water that remains after the rainy season. Here, we must install rainwater harvesting structure. A check dam is a temporary building constructed from loose stones and mud that is readily available nearby. Usually, they are constructed over little rivers and streams. The water flow is slowed by these check dams, which also store a lot of water during the dry months. The water that has accumulated slowly seeps into the ground, raising the water level in surrounding wells and water sources. They also reduce the amount of freshwater that enters the sea in coastal areas. Check dams are a common, low-cost, and straightforward technique in rural settings. For this reason, check dams are very useful in water management. Another method for keeping fresh water on hand during the rainy season is to create artificial ponds, which are then used for daily tasks like irrigating plants during the dry season. It is mostly built with impermeable materials like geomembrane and geosynthetics at high locations. When needed, a large amount of water can be pumped from artificial ponds or stored by gravity. In recent times the groundwater has been getting depleted due to various reasons. This research work aims at augmenting the groundwater recharge and effective usage of stored water in Puttur. Groundwater recharge mainly depend upon infiltration capacity of the soil. Infiltration is the movement of water into the soil from the surface. The water is driven into the porous soil by force of gravity and capillary attraction. Eight locations in the Puttur regions of Dakshina Kannada District, Karnataka state, underwent infiltration testing. The infiltration rates were measured using the double ring infiltrometer method. The findings demonstrated that temperature, bulk density, porosity, type of soil, and antecedent moisture content affect the infiltration rate. Core cutter method used to demine in-situ density of soil. A permeability test is performed on soil samples from each of the nine Puttur area sites to determine the soil's ability to permit vertical water

percolation. Determined the precise yield of each well for each of the four check dam locations in the Puttur area of the Dakshina Kannada District in the state of Karnataka by performing Drawdown and Recuperation tests.

***Keywords**: Check dam, Rainwater harvesting, Groundwater Recharge, Infiltration rate.*

Assessment of Industrial Effluents and Its Impacts in Coastal Water Quality in Tuticorin Area Using Remote Sensing Technique

Shaamlie Devi
Assistant Professor
Department of Civil Engineering, AMC Engineering College, Bengaluru, Karnataka.
shaamliedevi.tr@gmail.com

ABSTRACT

Coastal environment plays a main role in nation's wealth by asset of the resources, productive habitats and rich biodiversity. The marine environment mainly contaminated by waste disposal and accelerated industrial activities. The wastes of society can be placed on land or in the water. It also penetrates directly to the marine environments. The present study is to assess the industrial effluents and its impact in coastal water quality. Tuticorin coast has a major port and it is rapidly developing area. The study area falls in the latitudinal and longitudinal extensions of 8°40'- 8°55' N and 78°0' -78°15' E on the Tamil Nadu; India has a coastline of about 7,500 kms. The coastline of Tuticorin has a length of about 163.5 km. Tuticorin is port town with several industries and saltpan activity, its population is around 0.4 million. The town generates an estimated 17.5 MLD of sewage. Industries around Tuticorin include a refinery, aquaculture, chemicals and fertilizers, caustic soda and a thermal power plant. Major Industries such as Southern Petrochemical Industrial Corporation, Thermal Power Plant, Tuticorin Alkali Chemicals and Heavy Water Plant are also present in this area. The industry locations were marked on the base map. Map has been digitized using Arc GIS version 9.3software. Physical-Chemical parameters of the samples are analyzed and created the attribute database of the study area. Water quality parameters like pH, Temperature, Total Suspended Sediments, Biological Oxygen Demand, Dissolved Oxygen analysis are done and the graphs are created. The various pollution parameters reading are compared with General Coastal Cater Quality Standard. Effective planning are needed to control coastal pollution and protect the marine environment and their effects on marine ecosystem.

Keywords: *Coastal environment, Industry Effluents, ArcGIS , Pollution.*

A Study on Self Curing Efficiency Considering SAP as Additive in Conventional Cement Concrete Matrix

[1] Vinay H S , [2] Suhruth , [3] Prashanth V P
[1 2] Postgraduate Student , [2] Assistant Professor
[1] Department of CTM, JSS STU Mysuru
[1] vinusrinivas.hs@mail.com, [2] suhruthrawson@gmail.com

ABSTRACT

Concrete well know mankind stone and its proven engineering properties, stands as [13] the most widely used construction material. Proper curing is essential for concrete to achieve its desirable attributes. Curing techniques and duration significantly impact curing efficiency, crucial for ensuring the strength, durability, and longevity of concrete structures. However, current standards often lack clear guidance on effective curing methods, further complicated by practical constraints like water availability and logistical difficulties. To address these challenges, [1] self-curing agents such as super absorbent polymers (SAP) or natural materials have emerged. These agents [29] reduce water evaporation from concrete, enhancing water retention and promoting proper hydration. Incorporating self-curing agents into concrete mixes offers potential for more consistent and reliable curing results, even under adverse conditions. Ongoing efforts aim to optimize their use by determining appropriate dosages for desired properties such as workability and compressive strength. Experimental approaches, including quantifying absorbent material based on evaporation rates and conducting microstructural analyses using techniques like scanning electron microscopy (SEM), help assess the effectiveness [32] of self-curing agents in facilitating proper concrete hydration. The development and integration of self-curing agents signify a promising advancement in concrete technology, providing a sustainable solution to curing challenges in construction while ensuring resource efficiency. Self-curing agents (SAP) as additive holds the potential to revolutionize concrete construction practices, leading to more resilient and environmentally friendly infrastructure.

Keywords: *SAP, Self Curing, Integral Absorbents, Heat of Hydration, SEM.*

An Experimental Investigation on Pervious Concrete

[1] Babitha B , [2] Impana , [3] Karthik H
[1 2 3] Civil Engineering Department
A J Institute of Engineering and Technology Mangaluru, India
[1] babitha.bolna@gmail.com

ABSTRACT

The impervious layers have reduced the groundwater recharge and increased the frequency of runoff. One of the engineered ways to reduce the effect of impervious layers is by adopting pervious concrete suitability.

Pervious concrete helps to increase the groundwater recharge, and the frequency of runoff. Pervious concrete is a special type of concrete that does not have fine aggregates like conventional concrete. It consists of cement, coarse aggregates, water and admixtures if required. As there are no fine aggregates in the concrete matrix, the void content is more which introduces porosity, hence also called as permeable concrete and porous concrete.

Pervious concrete has been increasingly used all over the world to reduce the amount of runoff water and improve the water quality near basements and parking lots. This project provides the review of improving the mechanical properties of pervious concrete through different factors like using different size of aggregates. In this project we are aiming at increasing the ground water level by using pervious concrete for parking lots and basement areas where the water level is low.

Keywords: *Pervious concrete, Mix proportion, permeability, groundwater recharge .*

Geospatial Analysis of Urban Road Network: A Case Study of Mysuru City, India

[1] Sinchana T. H, [2] Sanjith S. Anchan , [3] Palakshappa K
[1] UG Student , [2] Assistant Professor , [3] Professor
[1 2] Department of Civil Engineering, The National Institute of Engineering, Mysuru
[3] Department of Civil Engineering, P.A. College of Engineering, Mangalore
[2] sanjithsanchan@nie.ac.in

ABSTRACT

Road network analysis is a critical component in urban planning, disaster management, and transportation logistics. However, various issues such as road condition, traffic congestion, road blockage, and accidents often hinder the effectiveness of a road network. Digitizing and analyzing the road network can offer an effective solution to these problems. This paper attempts to digitize the current road network of Mysore City for thorough analysis. The study presents a comprehensive methodology for analyzing road networks through the application of Quantum GIS (QGIS), open-source Geographic Information System (GIS) software. The approach involves extracting road networks from Open Street Map (OSM) as the base, then enhancing and adjusting these networks using satellite imagery from Google Earth Pro. The city limits of Mysuru were delineated by the boundaries set within the ring road. The geospatial analysis has revealed that the road network of Mysuru city spans approximately 3516 kilometers in total length. The findings of this study and their practical application could assist urban planners, transportation engineers, administrators and decision-makers in developing a sustainable road network management and optimization. Future research will examine the impact of land use variations on black spot formation.

Keywords: *Geospatial analysis, urban road network, QGIS, city traffic, Mysuru.*

Utilization of Plastic Pet Bottles Characteristics to Develop Eco-Friendly Plastic Paver Blocks

[1] Shravan Kumar D , [2] Dr.Rajesha R
[1] UG Student, [2] Assistant Professor
[1 2] Dept of Civil Engineering, VCET, Puttur
[1] kumarshravan70905@gmail.com, [2] rm.madhura@gmail.com

ABSTRACT

Due to their non-biodegradable nature, plastics—especially polyethylene terephthalate (PET) bottles—pose a serious environmental risk when used excessively. The purpose of this project is to investigate the possibility of using PET plastic waste as the main raw material for making environmentally friendly plastic paver blocks. By adding PET bottles to both fine and coarse aggregates, it hopes to create a construction material that is less plastic-based, less wasteful, and a competitive substitute for traditional paver blocks. PET bottles are gathered, cleaned, and shredded into small flakes as part of the approach. The flakes are then combined with different amounts of fine and coarse aggregates. A battery of tests is performed on the mixes to assess their influence on the environment, durability, and compressive strength. To evaluate, comparisons with conventional paver blocks are made.

Keywords: *PET plastic, plastic paver blocks, environmentally friendly.*

Review on Silicon Carbide Coating for High Temperature Corrosive Environment

[1] Manvith Devadiga, [2]AkashYadav , [3] Kiran Prakasha A. , [4] Dr. Mruthunjaya. M.
[1 2] Student, Dept. of Mechanical Engineering, SCEM, Mangaluru
[3]Assistant professor, Dept. of Mechanical Engineering, SCEM, Mangaluru
[4] Associate Professor, Dept. of Mechanical Engineering, JSSATE Bengaluru

ABSTRACT

Metals and metallic alloys require high performance in a wide range of environments as technology advances, so ceramic coatings are widely used as protective coatings in industrial applications and since they are capable of protecting the base alloy from corrosion and oxidation while also reducing the wear damage[1]. With the rapid growth of aerospace industry one of the key technologies used in their development is the reinforced ceramics-ceramics matrix composite. In general, ceramic matrix used is of silicon carbide which has high strength, high temperature resistance and high toughness to the reinforcing material when fiber and nano-material reinforcements are added[2]. Silicon carbide is a ceramic material which is widely used because of its good mechanical, thermal, and chemical properties. It also has good tribological properties and wear resistance in corrosive and abrasive environments. Thermal spraying is the most cost effective and most efficient method if producing metallic and ceramic coatings[3].In nuclear development silicon carbide coating is used due to its excellent performance under different conditions such as oxidation resistance, radiation tolerance, oxidation resistance, creep[4].Some of the key aspects in choosing the protective coating material is the selection of appropriate coating for the metallic surface and proper selection of coating technology and its chemical compatibility[5].The silicon carbide coatings are mainly used for low friction and high wear resistance applications. The main reason for corrosion in metals is mainly due to the metal reacting to one another, presence of air and moisture content in the air, and also due to gases like sulfur dioxide and carbon dioxide which are present in the air and also due to the presence of electrolyte are some of the main causes of corrosion[6]. The sole purpose of coating the surface of any metals, materials with silicon carbide coating is to increase its lifetime accordingly due to the changes in the environments.

***Keywords**: Silicon Carbide, tribological properties , environmentally friendly. sulfur dioxide and carbon dioxide*

Effect of ABS as filler material in Eglass reinforced Epoxy based composites

[1] Kishan G S, [2] Dr. Manujesh B J
[1] Research Scholar, Dept of Mechanical Engineering VCET Puttur
[2] Professor and Head, Dept of Mechanical Engineering, VCET Puttur

ABSTRACT

Plastics being the integral part of modern life due to their versatility in offering superior toughness and resistance to breaking or shattering under impact and ensuring longevity have a criticality in the significant development of more sustainable and improving recycling processes. The present study describes the development of Eglass reinforced Epoxy based composites with 1st grade ABS scrap as filler material in varied weight percentage of up to 10% and their investigation on low impact resistance. The laminates are produced to the thickness of 3mm satisfying the requirements of car bumpers that absorb impact load and dissipate energy. Laminates produced with ABS material as filler addition exhibited an incremental result of around 1.5% in impact strength compared to plain eglass epoxy laminates remarking in its adaptation in low grade applications. The Izod test revealed better results up to 6% addition of ABS validating the toughening aspects and further lead in the drop in chemical interaction between thermoplastic and thermoset interface.

***Keywords**: Recycling, Eglass, Epoxy, ABS, Scrap, Filler, Impact strength, Toughening*

Fabrication And Characterization Of Polyvinyl Alcohol/Gelatin Nanocomposites Via Electrospinning

[1] Kirankumar B, [2] Narasimha Marakala , [3] Ramis M K
[1] Research Scholar
[1 2] Dept. of Mechanical Engg., NMAMIT, Nitte, Karkala
[3] Dept. of Mechanical Engg., P.A College Of Engineering, Mangaluru.
[1] kiran.mech@pace.edu.in , [2] nmarakala@nitte.edu.in, [3] ramismk@pace.edu.in

ABSTRACT

Electrospinning technique is able to create nanofibers with specific orientation. Polyvinyl alcohol have good mechanical stability but poor cell adhesion property due to the low affinity of protein. In this work, extracellular matrix, gelatin is incorporated into PVA solution to form electrospun PVA-Gelatin nanofibers membrane. Both randomly oriented and aligned nanofibers are used to investigate the topography-induced behavior of fibroblasts. Surface morphology of the fibers is studied by optical microscopy and scanning electron microscopy (SEM) coupled with image analysis. The effects of the different concentration of Gelatin on the solution properties of PVA/Gelatin/GA blends and on the morphology of the resultant nanofibers were studied. The surface morphology and the average diameter of the blend nanofibers are dependent on initially added Gelatin Powder. The effects of the glutaraldehyde on the morphology and mechanical properties of the PVA/Gelatin nanofibers were examined. The PVA/Gelatin/GA nanofiber mats were characterized by scanning electron microscope (SEM), and tensile test.

***Keywords**: Electrospinning technique, PVA/Gelatin/GA blends, scanning electron microscope (SEM), and tensile test.*

Evaluation of Tensile Strength and Flexural Strength of Polylactic acid fabricated using 3D Printing

Mohan G
Assistant Professor
Dept. of Mechanical Engineering
Sai Vidhya Institute of Technology, Bengaluru

ABSTRACT

Because Polylactic Acid (PLA) is easily processed, Biodegradable, and Biocompatible, it has become a popular material for Additive Manufacturing in recent years. This study assesses the Tensile and Flexural strength of PLA made using the widely used additive manufacturing method known as Fused Deposition Modelling, or FDM. While ASTM D790 guidelines were followed for flexural testing, ASTM D638 guidelines were used for tensile testing. The findings showed that the printed PLA specimens' tensile and flexural strengths are highly influenced by the infill density and layer height. The mechanical properties were generally improved by higher infill densities and lower layer heights; specimens with 100% infill density showed the maximum tensile and flexural strength. Furthermore, Scanning Electron Microscopy (SEM) was used to investigate the composite's fracture section.

Keywords: *Polylactic Acid(PLA), Additive Manufacturing, FDM, Tensile Strength and Flexural Strength*

Evaluation of Mechanical Properties of Epoxy Based PMC with Cast Iron Powder Filler

[1]Midhun K C, [2]Prashanth Pai M, [3]Maruthi Prashanth B H,
[4]Pujar C V, [5]Navaneeth I M, [6]Kirankumar B
[1] UG Scholar, [2 3 4] Associate Professor, [5 6] Assistant Professor
[3] Dept. of Mech. Engg. AGMR College of Engg. and Technology, Hubli, Karnataka, India
[1 2 4 5 6] Dept. of Mech. Engg., P.A.College of Engineering, Mangalore, Karnataka, India.
[1]4pa21me009@pace.edu.in, [2]prashanth_mech@pace.edu.in, [3]bhmprashant@gmail.com

ABSTRACT

In the plastics industry polymers are compounded with fillers to bring down the manufacturing cost and to receive desired properties. By combining different fillers with various polymer matrices, polymer composites can be tailored to achieve property combinations which cannot easily be obtained from either the polymer matrices or the reinforcements alone. In the past decades different metallic and ceramic fillers have been used as reinforcements in composite preparation because of their effectiveness in reinforcing polymers. This research work involves the fabrication and study of the mechanical properties of epoxy resin composites filled with cast iron powder filler. Epoxy composites filled with cast iron powder are prepared using casting technique. Data on neat epoxy is also included for comparison. All the tests are conducted at room temperature and as per ASTM standards. Hardness, impact and flexural tests are conducted and the data are analyzed with the help of statistical charts. It is observed that inclusion of cast iron filler affected the mechanical properties of neat epoxy. Hardness, Impact strength and Flexural strength of the developed composites exhibited a varying trend with respect to cast iron content. The increase in cast iron content showed significant improvement in hardness and impact strength of the composites. Flexural strength was observed to reduce with the raise in cast iron content.

Keywords: *Hardness, impact strength, flexural strength, reinforcement, neat epoxy.*

Stress Analysis of Motorcycle Swing Arm Using ANSYS

[1] Ajith K, [2] Raghavendra Prasad
[1 2] Assistant Professor, Dept. of ME, VCET Puttur

ABSTRACT

The swing arm is a critical component in various vehicles and machinery, playing a vital role in connecting the rear wheel to the frame while enabling vertical movement and suspension. This project focuses on optimizing the swing arm design to enhance cornering stability and overall vehicle efficiency. Current swing arm designs are constructed from materials such as aluminium alloys, steel each offering unique properties in terms of strength, weight, and durability. The geometry of the swing arm, including its length, angle, and pivot position, significantly influences vehicle dynamics and manoeuvrability. Suspension systems integrated into swing arms, such as mono-shocks or multi-link setups, absorb shocks and vibrations, ensuring better traction and a smooth ride. To improve cornering stability and vehicle efficiency, this project aims to reduce the overall length of the swing arm. A shorter swing arm will decrease the moment arm, resulting in reduced lateral forces and improved stability during cornering. Additionally, a shorter swing arm will reduce the weight of the component, contributing to overall weight reduction and enhanced vehicle efficiency.

Keywords: *Vehicle dynamics, weight reduction, optimization, stress analysis.*

An analytical study on heat transfer performance of radiator using distilled water

[1]Manujesh B. J., [2]Raghavendra Prasad S. A., [3]Pavithra Kumar, [4]Ajith K.
[1] Professor & HOD, [2 4] Assistant Professor
[1 2 4] Dept. of ME, VCET Puttur

ABSTRACT

The project focuses on the design and development of a radiator test rig to evaluate the heat transfer performance of different working fluids. The study aims to determine the rate of heat transfer using distilled water, individual nanofluids, and composite nanofluids as working fluids within the test rig. Distilled water was used as the baseline working fluid to establish a reference for heat transfer performance. Subsequently, individual nanofluids, including aluminum oxide (Al_2O_3) and titanium oxide (TiO), were tested to evaluate their impact on heat transfer enhancement. Furthermore, composite nanofluids, which combine nanoparticles, were examined to explore potential synergistic effects on thermal conductivity and heat dissipation. The experimental results reveal significant variations in the heat transfer rates among the different fluids. Nanofluids, both individual and composite, demonstrated superior heat transfer capabilities compared to distilled water, with composite nanofluids showing the highest enhancement.

Keywords: *Nanofluids, heat transfer, thermal conductivity, radiator.*

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Waste heat recovery from IC engine exhaust using Thermo-electric generators

[1] Rolvin D'Silva, [2] Binu K G
[1 2] Department of Mechanical Engineering
[1 2] St Joseph Engineering College, Mangaluru

ABSTRACT

The increasing demand for energy efficiency and reduced emissions in diesel engines has led to the exploration of innovative waste heat recovery technologies. This study investigates the potential of harnessing waste heat from diesel engine exhaust using thermoelectric modules based on the Seebeck effect. The Seebeck effect enables the conversion of thermal energy into electrical energy, offering a promising solution for waste heat recovery. The proposed system utilizes thermoelectric modules composed of p-type and n-type semiconductors to generate electricity from the exhaust heat. The modules are designed to withstand high temperatures and optimize heat transfer. Experimental results show a considerable amount of electrical power can be generated from the waste heat, leading to improved fuel efficiency of the engine. The study demonstrates the feasibility of thermoelectric waste heat recovery from diesel engine exhaust and highlights its potential as a supplementary power source.

Keywords: *Seebeck effect, p-type and n-type semiconductors, thermoelectric waste, diesel engine.*

A study on the Mechanical Characteristics of E-glass/Epoxy Hybrid Composites using Recycled Rubber as a Filler Material

[1]Harish S R, [2]Aman Naik, [3]Swasthik P D, [4]Satheesha Kumar K
[1 4] Assistant Professor, [3]UG Student
[1 3 4] Dept. of Mechanical Engg., Vivekananda College of Engineering & Technology, INDIA
[2] Graduate Student, Master of Mangement, University of Windsor CANADA
[4] skkvcet@gmail.com

ABSTRACT

Composite materials can be formed by combining two or more materials with different properties together at macroscopic level to get enhanced properties as a combined effect. his paper describes the fabrication and mechanical characterization of A hybrid composite material prepared using recycled rubber as filler, epoxy resin as matrix with 400 gsm E-glass fibre woven fabric as reinforcement. Composites with four different composition of filler material (0%, 5%,10%, 15%) are fabricated by simple hand layup technique. The newly fabricated composites were characterized for their mechanical properties such as Tensile strength, Impact strength & Bending strength as per ASTM standards to find the influence of rubber as filler material on mechanical properties of glass reinforced epoxy composites.

Keywords: *Impact strength, Recycled Rubber, Epoxy composites, Glass-Fibre reinforcements.*

Annealing effect and property variation in Ni-Mn Quinary Heusler alloy

[1]Sandeep Nambiar S, [2]Vinod Kumar, [3]Vasantha Kumar [4]Murthy BRN
[1 2 3]Dept. of Mechanical Engineering Bearys Institute of Technology, Mangalore
[4]Dept. of Mechanical and Industrial Engineering Manipal Institute of Technology, Manipal
[1]sandeep.nambiar@bitmangalore.edu.in, [3]vasantha@bitmangalore.edu.in
[4]murthy.brn@manipal.edu

ABSTRACT

The work focuses on NimFeMnSn1sInz alloy, and its characteristic changes on subjecting to varying annealing temperatures for potential application with a particular focus on the martensitic transformation (MT). A 100°C temperature change from 650 to 850°C was considered for the study and the optimal structural, microstructural and mechanical properties of the alloy in these varying temperature zones are studied. The X-ray diffraction (XRD) results indicate the occurrence of gamma phase of the alloy while for the as-cast alloy it was significantly low. Gamma phase is indicative of occurrence of structural change in the alloy with the use of heat treatment process. Near room temperature transformation occurrence of the alloy was also visible by combining the results obtained by XRD and differential scanning calorimetry (DSC) data. The DSC measurements further confirmed that alloys subjected to higher annealing temperatures exhibited clearer martensitic transformation peaks compared to the as-cast alloy. The improved mechanical properties re- sulting from heat treatment make the alloy more robust and durable, which contributes to reducing material waste and extending the lifecycle of components made from this alloy. Additionally, the alloy's unique properties, such as its martensitic transformation characteristics, can be harnessed in refrigeration applications.

Keywords: *Heusler alloys; Smart Memory Alloys; Annealing.*

Influence of Laser Peening on Microstructure of AISI 304 Stainless Steel Weldment

[1] Pavithra Kumara M , [2] Manujesh B J, [3] Raghavendra Prasad S A
[2] Professor, [3] Assistant Professor
[1] Karnataka (Govt.) Polytechnic, Mangaluru
[2 3] Vivekananda College of Engineering and Technology, Puttur
[1] mpkumar.ksd@gmail.com, [2] manujesh@gmail.com, [3] 07raghu@gmail.com

ABSTRACT

Laser peening is an innovative surface enhancement technology for introducing compressive residual stresses in metallic materials. The purpose of this study is to examine the changes at the laser peened weld zone of AISI 304 stainless steel.

The specimen was prepared by slicing the weldment into one inch square samples having weld zone of about 1cm width at the centre. Laser peening without protective coating was performed on AISI 304 austenitic stainless steel weld using Nd-YAG laser of 532nm wavelength, 7ns pulse duration and pulse rate of 5 pulses/second. The peening was done with laser beam of different energies in air as well as using a thin layer of water as a confinement layer.

The peened specimen was characterized with scanning electron microscope. Microstructural changes were observed on the surface as well as cross section of the sample after laser peening. The analysis on laser peened region reveals deformation at the surface.

***Keywords**: laser peening, microstructure, scanning electron microscope.*

Airborne Hybrid Power Generation System For Electric Vehicle Charging Station

[1] Ajith Kumar, [2] Prathap, [3] Yashwitha N , [4] Kushi,
[5] Apeksha U Saadhana, [6] Shetty Sanath Sadananda
[1] Senior Assistant Professor , [2 3 4 5 6] Student
[2 3 4 5 6] Department of Aeronautical Engineering
Mangalore Institute of Technology & Engineering,Mangalore, India
[1] aijthkumar@mite.ac.in , [2] prathapnayak84@gmail.com, [3] yashwitha0406@gmail.com,
[4] shettykushi91@gmail.com , [5] apekshaus2@gmail.com ,
[6] apekshaus2@gmail.com

ABSTRACT

Airborne Wind and Solar Energy Converter (AWSE) is "the conversion of wind energy and solar energy into electricity using tethered flying devices". The transition toward electric vehicles is a promising strategy towards green and clean transportation. The charging infrastructure is very important to accommodate the rapid public adoption of electric mobility. In India there is a big opportunity in developing robust charging stations. Considering the energy requirements there is a need for renewable energy-based charging infrastructure.

An airborne hybrid power generation system is proposed to utilize the wind and solar energy to meet the power requirements of EV charging stations. The new power generation system employs tethered helium balloons with a small wind turbine and covered with flexible monocrystalline photovoltaic panels therefore generates electricity from both wind and solar energy.

The major advantages of this type of airborne hybrid power generation system are the requirement of big towers and space can be eliminated and also small wind turbines can operate at minimum wind velocity. At high altitudes wind speed is more which can be tapped using the proposed system. Design of a lightweight generator, tethered balloon, control system for stabilizing the balloon and environmental effects on the proposed system are the major challenges to overcome.

An airborne hybrid power generation system has been developed. Performance Analysis of Horizontal axis small wind turbine is carried out using QBlabe software. The feasibility of using an array of airborne hybrid power generation system to meet the power requirement of EV Charging stations is presented. Potential applications of the proposed system for the power generation in coastal regions, workplace charging, home charging and cost effectiveness is discussed

***Keywords**: DC generator, Gears, Propeller, Ballon, Wooden Frame, Clamps..*

Distance Magic Labeling of Cycles

Chaithra K
Department of mathematics
NMAM Institute of Technology (NMAMIT), Nitte, Karkal

ABSTRACT

In this paper, we study D-distance magic labeling (D-DML) of simple undirected cycles for a distance set $D \subseteq \{0,1,2, \ldots d\}$, where d is a diameter of graph G. A D-DML of G with n vertices is a bijection g from a vertex set V(G) to {1, 2, …, n} such that for any $v \in V(G)$, $\sum_{u \in ND(v)} g(u)$ is constant, say k which is called as magic constant (where $ND(v) = \{u \in V / d(u, v) \in D\}$. We study D-DML of join of cycles, union of cycles, power of cycle. We also study D- DML of mirror graph of cycle.

Keywords: *magic labelling, mirror graph, distance magic labelling, cycle.*

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Sustainable production of ZnO: Eu^{3+} nanophosphors: An analysis of their structural features and luminescence

D. Kavyashree
Associate Professor
Department of Physics
Acharya Institute of Technology, Bangalore, India
d.kavya.shree@gmail.com

ABSTRACT

A series of Eu^{3+} (1-11mol%) activated ZnO nanophosphors were prepared by low temperature solution combustion method using Aegle marmelos (bilwa or bael) seeds extract as a fuel. The obtained nanophosphors were characterized by X-ray diffraction (XRD), scanning electron microscope (SEM) and photoluminescence (PL). The average crystallite sizes were estimated by Debye-Scherrer formula and Williamson-Hall plots and found to be in the range of 45-69nm. The photoluminescence (PL) spectra were observed in violet blue and orange red region in the spectrum. Hence the obtained sample can be used for blue and orange light LED applications.

Keywords: *Aegle marmelos (bilwa or bael), combustion method, photoluminescence.*

Activity Concentration and Uptake of Radionuclides from Soil to Medicinal Plants around Sullia Taluk

[1]Deepali C K, [2]Krithika D J, [3]Sujith S, [4]Vipin Naik N S, [5]Ranjan B Shetty
[1 2 3 4]Department of PG studies and research in Physics, St Philomena college, Puttur.
[3 5]Department of Physics, Mangalore University, Mangalaganotri, Mangaluru.

ABSTRACT

The study of activity concentration and uptake of radionuclides from the soil to medicinal plants around Sullia taluk. This work reports concentration of natural radionuclides Radium-226, Thorium-232, and Potassium-40 and Transfer factor in six medicinal plants by using NaI(Tl) detector in its leaves and soil . Out of the measured activity concentrations, the concentration of ^{40}K was maximum, both in case of leaves and soil. The activity concentration with the mean values 40.64Bqkg^{-1} for ^{232}Th, 47.54Bqkg^{-1} for ^{226}Ra and 188.3 Bqkg^{-1} for ^{40}K for soil. The soil-to-plant transfer factors (TF) for radionuclides were calculated, showing that ^{40}K had the highest mean TF, followed by ^{226}Ra and ^{232}Th. A dose rate of about 54.37nGy h^{-1} indicates a safe and typical level of environmental radiation, implying that medicinal plants grown in this environment are not contributing to significant radiological health risks. The AACED due to ingestion of medicinal plants was estimated for different radionuclides and reported below the world average of 0.3mSvh^{-1}. This low AACED value suggests these plants are safe for consumption and within the recommended safety limits set by international health guidelines.

Keywords: *Medicinal Plants, Natural radionuclides, Soil to Plant Transfer Factor (TF), Dose rate, Average Annual Committed Effective Dose (AACED).*

Assessment of Radionuclides in Soils and Plants in Outskirts of Puttur

[1] Joyson Emmanuel Dsouza, [2] Shreya K H, [3]Sujith S, [4] Deeksha K C, [5] Reshma S, [6] K Chandrashekar, [7]Poojashree V Rai1, [8] Y Narayana

[1 2 3 4 5 6 7]Department of PG studies and research in Physics, St Philomena college, Puttur.

[2 8]Department of Physics, Mangalore University, Mangalaganotri, Mangaluru.

ABSTRACT

This study investigates the activity concentrations of naturally occurring radionuclides, specifically Radium-226, Thorium-232, and Potassium-40 in soil and plant samples collected from various locations. The primary objective is to understand the distribution of these radionuclides in the environment and their transfer from soil to plants, which are critical components of the ecosystem. The activity concentrations in samples were measured using Gamma ray (NaI(Tl)) spectrometer, which provided reliable data on the radionuclide levels. The study revealed that mean activity concentrations for ^{226}Ra, ^{232}Th and ^{40}K was 39.73 Bq kg^{-1}, 33.77 Bq kg^{-1}, and 283.77 Bq kg^{-1} respectively in soil and 4.35 Bq kg^{-1}, 7.95 Bq kg^{-1}, and 574.1 Bq kg^{-1} respectively in plant samples. The transfer factor (TF), which is the ratio of radionuclide concentration in plant tissue to that in the corresponding soil, has been calculated for each radionuclide. The observed average transfer factor was obtained to be 2.07 for ^{40}K, 0.25 for ^{232}Th and 0.11 for ^{226}Ra. Furthermore, the Average Annual Committed Effective Dose (AACED) was determined for individuals consuming these plants. The obtained AACED values were compared with global limits to evaluate potential health risks.

Keywords: *Naturally occurring radionuclides, Activity concentration, Transfer Factor (TF), Average Annual Committed Effective Dose (AACED).*

Impact of Hydrogen Ions on Lexan Polycarbonate Films

[1]Raveesha P.M , [2]Ganesh Sanjeev , [3]Nabhiraj P.Y , [4]Ranjini Menon
[1]Department of Physics, Vivekananda College of Engineering & Technology, Nehru Nagar, Puttur-574 203
[2]Microtron Centre, Department of Studies in Physics, Mangalore University, Mangalagangotri-574 199
[3 4]ECR Section, Variable Energy Cyclotron Centre, Kolkata-700 064
[1]raveesh659@gmail.com

ABSTRACT

The prime objective of the present work is to study effect of the electrical and optical behaviour of Lexan polycarbonate films in the environment of low energy Hydrogen (H^+) ions from an Electron Cyclotron Resonance Ion Source (ECRIS). Low energy H^+ ions were made to fall on thin, transparent Lexan films and characterized using UV-Visible Spectroscopy, Keithley Source Measure Unit (SMU) and Fourier Transform Infrared (FTIR) Spectroscopy and Atomic Force Microscopy (AFM). The colorless pristine Lexan film changes to darker brown after irradiation. The UV-Visible study shows increase in the optical absorbance and number of carbon atoms in carbonaceous clusters. The optical energy gap was found to decrease with irradiation. The Current-Voltage (I-V) characteristics show decrease in the electrical resistance and increase in the surface conductivity after irradiation. The reduction in the peak intensity of C=O, C-O, C-C stretching were observed in FTIR spectra. The changes in the surface morphology and increase in the surface roughness were observed for irradiated films using AFM technique. The obtained results in this study would help to enhance the use of Lexan films in the field of optoelectronics, surface modification techniques and other associated material technologies.

Keywords: *Lexan films, Irradiation, optical properties, electrical properties.*

Irreversible k- conversion on corona product of graphs

[1]Reshma, [2]M. Jayalakshmi, [3]B. Sooryanarayana
[1]Assistant Professor, [2]Associate Professor, [3]Professor
[1 2 3]Department of Mathematics
[1]Vivekananda College of Engineering and Technology, Puttur
[2 3]Dr. Ambedkar Institute of Technology, Bengaluru
[1]reshu.bhat@gmail.com, [2]jayachatra@yahoo.co.in, [3]dr bsnrao@dr ait.org

ABSTRACT

In day-to-day life, we come across Spreads like spread of disease, spread of gossips, opinions among the people who are in interactions; virus spread, error spread in computer networks and so on. These spreads can be modelled by conversion process of graphs. For a graph G and an initially chosen set of colored vertices, an irreversible k- conversion process of G is a process of conversion of its vertices from uncolored to colored permanently, where the criteria for this conversion is a uncolored vertex becomes colored at time interval t, if it has k or more colored neighbours at time interval $t-1$, for discrete time intervals $t = 1,2,\ldots$. An initially chosen set of colored vertices of a graph is said to be a k-conversion set of G if it eventually colors all the vertices of the graph at some time t. The purpose of this paper is to compute minimum cardinality of k-conversion set of corona product of any two graphs. Also, a realisation problem is solved for 2-conversion.

Keywords: *Irreversible k-conversion, k-conversion number, corona product*

Effect of Heat and Mass Transfer on Unsteady Couple Stress Fluid Flow Model in a Permeable Vessel

[1]Shobha Poovani Jeevandra, [2]Vidya Kedla, [3]Gullapalli Neeraja
[1 2 3]Department of Mathematics
[1 2]Sri Dharmasthala Manjunatheshwara Institute of Technology, Ujire – 574240
[3]M S Ramaiah Institute of Technology, Bangalore-560 054
[1]ssdhegde1@gmail.com, [2]vidyasomayaji@gmail.com, [3]gneerajamaths@gmail.com

ABSTRACT

In this problem we investigated the theoretical study of heat and mass transfer on couple stress model of blood in permeable vessel. The clinical management of cardiovascular diseases accompanied by rapid circulation may benefit from the findings of this investigation. Mathematically, the issue is handled by breaking it down into a collection of coupled nonlinear differential equations that have been approximated by boundary layers and similarity transformation. By this study we investigated effect of governing parameters on the velocity, concentration and temperature. The present study shows enhancement in the rate of heat transfer as the unsteadiness parameter value increases. The study explores the impact of heat and mass transfer in a permeable vessel on mining, metallurgical processes, and fuel extraction, using an unsteady couple stress blood flow model for interdisciplinary understanding.

Keywords: *Cardiovascular diseases,* velocity, *concentration , temperature and fuel extraction .*

Sustainable Solutions- A Review of Green Inhibitors for Aluminium Corrosion

[1]Shwethambika Pernaje , [2]Ishwara J. Bhat
[1]Department of Chemistry, [2]Department of Post-Graduate Studies and Research in Chemistry
[1]Vivekananda College of Engineering and Technology, Puttur, Karnataka -574203
[2]Mangalore University, Mangalagangothri-574199, India
[1]shwethanaveen115@gmail.com

ABSTRACT

Conventional corrosion preventives have recently been associated with adverse environmental consequences. As a prominent solution, eco-friendly corrosion inhibitors have become increasingly popular in recent decades. These eco-friendly inhibitors offer significant inhibition efficiency with negligible environmental impact because they are made from inexpensive, sustainable resources. Under various working conditions, aluminium metal alloy is found with significant industrial and domestic utility, is known to suffer from surface deterioration. Here, we present reviews on the most recent developments in the domain and it unveils the state-of-the-art methods for affirming the inhibitory effects on corrosion of aluminium materials. Green inhibitors are observed very effective at reducing aluminium corrosion, as shown by sophisticated techniques such as the Potentiodynamic Polarisation Method, Electrochemical Impedance Spectroscopy, and Weight Loss Method. The review highlights surface morphological research conducted with Scanning Electron Microscopy and Atomic Force Microscopy. Our examination of the mechanisms hindering corrosion highlights the existence of π-electrons from hetero atoms and multiple bonds in the functional groups found in phytochemicals. In the end, this helps inhibitor molecules actively adsorb on mild steel surfaces. This article continues by discussing the prospects for green inhibition in the future related to this diverse field, as well as limitations involved in producing green inhibitors at an industrial scale using renewable energy sources.

***Keywords**: Aluminium Corrosion, Green Inhibitor, Inhibition efficiency, Weight loss study, Electrochemical investigations.*

Studies on Molecular Docking and Molecular Dynamic Simulation of Potential Chalcone Derivatives on Breast and Skin Cancer Targets

[1]K. R. Harshitha, [2]B. K. Sarojini
[1]Department of Post-Graduation Studies in Chemistry, [2]Department of Industrial Chemistry
[1]Vivekananda College of Arts, Science and Commerce (Autonomous), Puttur-574203, Puttur, Karnataka, India
[2] Mangalore University, Mangalagangothri -574199, Mangaluru, Karnataka, India
[1]harshitha@vcputtur.ac.in

ABSTRACT

In the present investigation, an attempt is made to know virtual drug-receptor interaction of easily synthesizable chalcone scaffold derived from 4-ethoxyacetophenone on the active site of target inhibitor bound cytochrome P450 family oxidoreductase [PDB: 3PM0] for breast cancer cell line and pirin inhibiting target [PDB: 3ACL] for skin cancer cell lines respectively. The interacting residue at the binding site of 3PM0 is found to be Phe231 for 1-5 and 7-10 whereas for 6 is Phe463 with docking score ranging from -6.990 to –8.460 kcal/mol. Similarly the interacting residue at binding site of 3ACL is Phe45 and Phe53, for 1-7, 9 and 10 with docking score range -6.384 to -7.609kcal/mol. Drug- receptor interaction is found to be through π-π interactions with A or B ring of the respective chalcones. Most of the interactions are found to be with ring A in sandwitch type with near parallel orientation which is revealed by dihedral angle <150°-180°. Some of the compounds showed T shaped π stacking geometries with Phe45 of Pirin and B ring of chalcone. The substitution on ring B marginally affected the docking score with halogen substitutions; 3-chloro derivative exhibiting highest glide score of -8.424kcal/mol for 3PM0 and -6.812kcal/mol for 3ACL; but the cytotoxic activity individually varied with substitution. Among tested compounds 8 (IC_{50}=53.47µM) for MDA-MB-231 and compound 6 (IC_{50}=40.76 µM) for A 375, emerged as most active ones. The MD simulations of targets and ligand binding mode run for 100ns revealed the interaction percentage of ethoxy phenyl ring of compound 8 with Phe 231 was found to be 87, whereas in compound 10, the π-π interaction with Phe 53 was observed to be 33% and 37% of π cation interaction with Arg 26.

Keywords: *Chalcone derivatives, Molecular docking, Molecular dynamics simulations.*

Areca Cellulose Fibres Based Hydrogel: Characterisation and Swelling Study

[1]Smitha Rai, [2]Ritu Kudarha, [3]Srinivas Mutalik, [4]Vishalakshi B., [5]Usha K. M.
[1 5]Department of Chemistry, University College, Mangalore, 575001
[2 3]Department of Pharmaceutics, Manipal College of Pharmaceutical Sciences, Manipal Academy of Higher Education, Manipal, 576104
[4]Department of Post-Graduate Studies & Research in Chemistry, Mangalore University, Mangalagangothri, 574199
[5]usha.km@rediffmail.com

ABSTRACT

A cellulose-based composite gel has been developed and the gel was made via graft copolymerisation of N, N'-dimethylacrylamide (DMA) on cellulose fibres extracted from Areca husk, using ammonium peroxodisulfate (APS) as the initiator and N, N-methylenebisacrylamide (MBA) as the crosslinker under microwave irradiation. The grafted copolymer gel was characterised using Fourier transform Infrared Spectroscopy (FTIR), Thermogravimetric Analysis (TGA), Powder X-ray diffraction (XRD), Field Emission Scanning Electron Microscopy (FESEM). The swelling study carried out under different pH conditions indicated second order kinetics and the mechanism of water transport is found to be Fickian type of diffusion.

Keywords: *Cellulose fiber, Poly (N, N'-dimethylacrylamide), hydrogel, Metformin Hydrochloride, Drug Delivery.*

Study on Some Rare-Earth Doped Halides for Optical Applications

[1]Pooja P N, [2]Nagaraja N, [3]Madhu Channabasappa C
[1 2 3]Department of Physics
[1 2]Sahyadri Science College, Shivamogga-577203
[3]Sri Jayachamarajendra College of Engineering, JSS Science and Technology University, Mysuru – 5700065
[1]poojapnaikp@gmail.com

ABSTRACT

In this research work, we prepared SmI_2 anhydrous hydrate rare-earth iodides by using an eco-friendly Annealing technique using He or H_2 furnance for vaccum dehydration. To develop and apply these scintillators effectively, it is crucial to have an efficient and economical method to produce high-purity Samarium di-iodide (SmI_2). We conducted a comparative study on the dehydration mechanisms of SmI_2 hydrate and its mixture with NH_4I using X-ray diffraction (XRD), I-V and fluorescence spectroscopy. The powdered samples shows the pure Tetragonal phase. The photoluminescence excitation spectrum of Samarium di-iodide at 374nm is recorded and studied, because of their, luminescent features, most intensive peaks, and high color purity. The thermal decomposition process of individual Samarium di-iodide hydrate was found to be as follows: $SmI_3 \cdot 9H_2O \rightarrow SmI_2$, and we comprehensively studied the hydrolysis mechanism of hydrate. Samarium di-iodide is a strong electron reducing agent. The importance of NH_4I and SmI_2 will be discussed.

***Keywords**: Ammonium-iodide, Anhydrous SmI_2, Rare-earth.*

Mechanical And Dielectric Properties of Coir Reinforced Composites

[1]Kavya N, [2]Nagaraja N
[1 2] Department of Physics
0Sahyadri Science College, Shivamogga, Karnataka, India

ABSTRACT

In this present scenario, most materials and manufacturing processes were affected by the environment. Due to this reason industries need eco-friendly materials and manufacturing processes. The present experimental study deals with the mechanical and dielectric properties of untreated and 5 wt% alkali-treated coir fibre reinforced composites. The composites are fabricated by means of hand lay up method. After that, by means of Universal testing machine (UTM), the experiment is performed to discover the flexural strength and Tensile strength respectively. Dielectric properties like dielectric constant and dielectric loss are investigated by aligent 42924A. The results are compared between untreated and 5% alkali-treated coir fiber-reinforced composite. This coir reinforced composites has a potential applications in the field of building and automotive industry and also as a insulating material. It is showed alkali treatments will aid the improvement of strength in the composites.

***Keywords**: Coir, Flexural Strength, Tensile Strength, Mechanical Properties, Dielectric constant.*

A Two-Phase Blood Flow over a Catheterized Artery and the Impact of a Magnetic Field

[1]Vidya Kedla, [2]Shobha Poovani Jeevandra, [3]Gullapalli Neeraja
[1 2 3]Department of Mathematics
[1 2]Sri Dharmasthala Manjunatheshwara Institute of Technology, Ujire – 574240
[3]M S Ramaiah Institute of Technology, Bangalore-560 054.
[1]vidyasomayaji@gmail.com,[2]ssdhegde1@gmail.com, [3]gneerajamaths@gmail.com

ABSTRACT

This study investigates the mathematical modeling of a two-phase blood flow through a catheterized artery under the influence of a magnetic field, revealing insights into plasma velocity reduction with increasing catheter size and the subsequent decrease in volumetric flow rate, providing potential applications for optimizing fluid transport systems in Mines, Metals, and Fuels industries. To determine the effect of a magnetic field on a two-phase blood flow via a catheterized artery, a mathematical model is created. By thinking of blood as a suspension of erythrocytes in plasma, a two phases continuous flow of blood is envisioned. Analytical solutions to the problems posed by the mathematical model developed through numerical calculations. It has been noted that plasma velocity drastically decreases as catheter size increases. The volumetric flow rate will decrease because of the magnetic field gradient. It is biologically accurate that when hematocrit increases, volumetric flow rate similarly falls.

Keywords: *Plasma velocity , mathematical model , volumetric flow rate.*

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Electrochemical studies of (2e)-3-(5-nitrothiophen-2-yl)-1-{4-[(prop-2-yn-1-yl)oxy]phenyl}prop-2-en-1-one on the corrosion inhibition of 6063 aluminium in hydrochloric acid

[1] Raviprabha K , [2] Subbulakshmi N Karanth
[1 2] Department of Chemistry
[1 2] Shri Madhwa Vadiraja Institute of Technology and Management
Bantakal-574115, Karnataka, India.

ABSTRACT

Experimental aspects of corrosion inhibition of (2E)-3-(5-nitrothiophen-2-yl)-1-{4-[(prop-2-yn-1-yl)oxy]phenyl}prop-2-en-1-one(NPP) on the corrosion of the 6063 Al alloy in 0.5M HCl solution was examined at different concentrations and temperatures. Weight loss, potentiodynamic polarization, and electrochemical impedance spectroscopy (EIS) were used to investigate the corrosion inhibition nature of the inhibitor. All the studied parameters showed excellent inhibitory properties of NPP against corrosion of alloy in 0.5M HCl and it acts as a mixed-type inhibitor. The inhibition efficiency was raised with an increase in the concentration of the inhibitor and solution temperature. The solution containing 100 ppm NPP at 333K has the highest corrosion resistance. NPP adsorption process is spontaneous and it obeys Langmuir adsorption isotherm. Thermodynamic adsorption functions (ΔG°ads, ΔH°ads and ΔS°ads) and the activation parameters were calculated and analyzed. In addition, surface analysis using Scanning Electron Microscopy (SEM) was performed to verify the formation of the protective film of the inhibitor molecules at 6063Al alloy surface.

Keywords: *Corrosion, 6063Al alloy, HCl, SEM, Quantum chemical studies.*

About the College

Vivekananda College of Engineering & Technology (VCET), Puttur, is one of the reputed engineering colleges in the coastal region of Karnataka. It was established in the year 2001 by Vivekananda Vidyavardhaka Sangha Puttur (R.) with the vision of providing quality technical education to the rural parts of coastal Karnataka. The institute has excellent infrastructure facilities that include spacious classrooms, state-of-the art laboratories, well furnished hostels, transportation facility, library, disciplined and ragging free learning environment. Today the Institute has been identified as a centre for excellence in imparting engineering education to aspiring students from all over the country and is bringing out best academic performance from the students.

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[Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi & Recognized by Govt. of Karnataka]
NEHRUNAGAR, PUTTUR – 574203, D.K., Karnataka, India
Tel: +91 08251 234555 | web: www.vcetputtur.ac.in