

3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

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Calendar Year 2019		
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Preamble

Srinivas Institute of Technology, renowned for its knowledge and innovation, has consistently upheld a dedication to scholarly excellence. As we embark on the journey of evaluating the scholarly accomplishments of our esteemed faculty, it becomes imperative to delve into essential metrics that showcase their academic influence and research expertise. This section aims to provide a comprehensive overview of the scholarly contributions of our faculty members over the past five years. It focuses on the quantification of academic output, including the number of books and chapters in edited volumes/books published, as well as the number of papers published in national and international conference proceedings by each teacher. These metrics serve as indicators of the institution's commitment to research and knowledge dissemination, highlighting the intellectual engagement of our faculty members in their respective fields.

Srinivas Institute of Technology has been at the forefront of fostering knowledge and innovation through a series of remarkable conferences organized across various departments. These conferences, namely ICRICS (International Conference on Recent Innovations in Computer Science), RTIMES (International Conference on Recent Trends in Mechanical Engineering Sciences), ICTIR (International Conference on Technology for Industry 4.0 Revolution), and the International Conference on Sustainable Innovative Strategies for Business Development in the Current Scenario, have been instrumental in enriching the academic landscape for both our esteemed faculty and eager students. These conferences have served as vibrant platforms for the exchange of ideas, the exploration of cutting-edge trends, and the dissemination of knowledge.

Faculty members have had the opportunity to engage with peers and experts from around the world, gaining valuable insights to enhance their teaching and research endeavors. Simultaneously, our students have been exposed to the latest advancements in their respective fields, fostering a culture of innovation and academic growth. This initiative mirrors our steadfast dedication to educational excellence and the advancement of knowledge, underlining our vision to maintain a prominent position in academic accomplishments and research contributions.

Summary Sheet

Summary of Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

Sl. No.	Name	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Rama krishna N Hegde	-	Engine Performance and Emission studies with Cotton seed - Simarouba and Cotton seed - Mahua oil blends as a partial Replacement Bio-Fuel	Advances in IC Engines and Combustion Technology select proceedings of (NCICEC 2019)	26th National Conference on Internal Combustion Engines and Combustion	National	2019	978-981-15-5995-2	Srinivas Institute of Technology, Valachil, Mangaluru	Springer
2	Rama krishna N Hegde	-	Women In Steam: A Perspective of Present Trends,	International conference on Emerging Trends in Managem	Proceedings of Emerging Trends in Manage	International	2019	978-87-941751-2-4	Srinivas Institute of Technology, Valachil,	Srinivas Publication

			Opportunities and Challenges in Engineering and Technology	ent, IT and Education	ment, IT and Education				Mangaluru	
3	Ramakrishna N Hegde	-	A modified correlation to predict heat transfer coefficient in a horizontal 'coil in shell heat exchanger' with circular fins using nanofluids	AIP Conference proceedings	eTIME-2019 International Conference on Emerging Trends in Mechanical Engineering	International	2019	978-0-7354-1995-7	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
4	Ramakrishna N Hegde	-	Numerical and Experimental study of heat transfer from a flat plate with multi-impingement jet	Proceedings of Advances in Mechanical Engineering, Materials and Mechanics	International Conference On Advances In Mechanical Engineering & Management (Icamm)	International	2019	978-3-030-52071-7	Srinivas Institute of Technology, Valachil, Mangaluru	Springer

5	Rama krishn a N Hegde ,	-	An Experi mental Study Based Compari son of Engine Performa nce Characte ristics Using Natural Seed and Animal Fat Base d Bio- Fuels	Procedin gs of 1st internation al conference on recent advances in engineerin g and technolog y	1st internat ional confere nce on recent advanc es in enginee ring and technol ogy	Internat ional	2019	ISSN 2227- 524	Srinivas Institute of Technolo gy, Valachil, Mangalu ru	Kalpa Public ations
6	Jagad eesh B	-	Engine Performa nce and Emission studies with Cotton seed - Simarou ba and Cotton seed - Mahua oil blends as a partial Replace ment Bio-Fuel	Advances in IC Engines and Combustio n Technolog y select proceedin gs of (NCICEC 2019)	26th Nationa l Confere nce on Internal Combu stion Engines and Combu stion	Nationa l	2019	978- 981- 15- 5995- 2	Srinivas Institute of Technolo gy, Valachil, Mangalu ru	Sprin ger
7	Jagad eesh Bantw al	-	An Experi mental Study-	Procedin gs of 1st internation al	1st internat ional confere	Internat ional	2019	ISSN 2227- 524	Srinivas Institute of Technolo	Kalpa Public ations

			Based Comparison of Engine Performance Characteristics Using Natural Seed and Animal Fat-Based Bio-Fuels	conference on recent advances in engineering and technology	nce on recent advances in engineering and technology				gy, Valachil, Mangaluru	
8	Jagadeesh B	-	Analysis of Combination of Wing with Canard and Tail used in Fighter Aircraft	Proceedings of 1st International Conference on Emerging Trends in Engineering, Science and Management	1st International Conference on Emerging Trends in Engineering, Science and Management	National	2019	978-81-940803-5-0	Srinivas Institute of Technology, Valachil, Mangaluru	Blue Eyes Intelligence Engineering & Sciences Publication
9	Jagadeesh B	-	Fabrication of Helicopter Swashplate to demonstrate Collective and Cyclic	Proceedings of National Conference on Recent Trends and Innovations in Mechanical	National Conference on Recent Trends and Innovations in Mechanical Engine	National	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Camb ridge Institute of Technology, Bangalore, India

			Pitch Control	Engineering and Technology”	ering and Technology					
10	Jagadeesh B	-	Thermal Degradation Study on Hybrid Fibres Binded with Thermoset Plastic Used in Aerospace Industry	Proceedings of National Conference on Recent Trends and Innovations in Mechanical Engineering and Technology”	National Conference on Recent Trends and Innovations in Mechanical Engineering and Technology	National	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Camb ridge Institute of Technology, Bangalore, India
11	Deepak Raj P Y	-	Numerical and Experimental study of heat transfer from a flat plate with multi-impingement jet	Proceedings of Advances in Mechanical Engineering, Materials and Mechanics	International Conference On Advances In Mechanical Engineering & Management (Icame m)	International	2019	978-3-030-52071-7	Srinivas Institute of Technology, Valachil, Mangaluru	Springer
12	Srinidhi Kukki la	-	Women In Steam: A Perspective of Present Trends, Opportu	International conference on Emerging Trends in Managem	Proceedings of Emerging Trends in Management,	International	2019	978-87-941751-2-4	Srinivas Institute of Technology, Valachil,	Srinivas Publication

			nities and Challenges in Engineering and Technology	ent, IT and Education	IT and Education				Mangaluru	
13	Sudarshan K	-	Blind's Eye – Wearable Object Detection, Recognition and Identification for Visually Impaired	RTESIT - 2019	RTESIT - 2019 Conference Proceedings	International	2019	ISSN: 2278-0181	Srinivas Institute of Technology, Valachil, Mangaluru	International Journal of Engineering Research & Technology (IJERT)
14	Manjesh R	-	Fruit Recognition using Image Processing	RTESIT - 2019	RTESIT - 2019 Conference Proceedings	International	2019	ISSN: 2278-0181	Srinivas Institute of Technology, Valachil, Mangaluru	International Journal of Engineering Research & Technology (IJERT)
15	Manjesh R	-	Automatic Waste Management	RTESIT - 2019	RTESIT - 2019 Conference Proceedings	International	2019	ISSN: 2278-0181	Srinivas Institute of Technology, Valachil, Mangaluru	International Journal of Engineering Research

									Mangaluru	rch & Technology (IJERT)
16	Mohan k	-	Autonomous Self-Driving Car using Raspberry Pi Model	RTESIT - 2019	RTESIT - 2019 Conference Proceedings	International	2019	ISSN: 2278-0181	Srinivas Institute of Technology, Valachil, Mangaluru	International Journal of Engineering Research & Technology (IJERT)
17	Soorya Krishnak	-	Design of Double Tail Dynamic Latch Comparator for Low Power Application	International Conference on Intelligent Sustainable systems	International Conference on Intelligent Sustainable systems	International	2019	978-1-5386-7799-5	Srinivas Institute of Technology, Valachil, Mangaluru	IEEE
18	Soorya Krishnak	-	Design of flash ADC using NAND based Fat-Tree Encoder	International Conference on Advances in electrical and computer Technologies	International Conference on Advances in electrical and computer Technologies	International	2019	ISSN 1876-1119	Srinivas Institute of Technology, Valachil, Mangaluru	Springer

19	Jose Alex Mathew	-	Implementation of kernel based DCT with controller unit	Proceedings of SMART-DSC 2019	Smart Technologies in Data Science and Communication	International	2019	978-981-15-2407-3	Srinivas Institute of Technology, Valachil, Mangaluru	Springer
20	Ajoy Joseph	-	Micro Finance Schemes of SKDRD P - A Case Study of Selected Members Of SHGS	Emerging Trends in Management, Information Technology, and Education	Emerging Trends in Management, Information Technology, and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
21	Ajoy Joseph	-	Mobile App-Based shopping in India –A New Shopping culture and Trend	Emerging Trends in Management, Information Technology, and Education	Emerging Trends in Management, Information Technology, and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
22	Veena Santhosh Rai	-	Information Technology in Education	Emerging Trends in Management, Information Technology, and Education	Emerging Trends in Management, Information Technology, and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication

23	Veena Santhosh Rai	-	A Study on Millennial Perception and Behavior regarding Digital Marketing with special reference to LL Stream LLP, Bengaluru	Higher Education Metamorphosis: Quest for Quality	Higher Education on Metamorphosis: Quest for Quality	National	2019	978-81-925257-7-8	Srinivas Institute of Technology, Valachil, Mangaluru	Aneka nt Institute of Management Studies (AIMS) Bara mati Pune
24	Veena Santhosh Rai	-	A study on millennial perception on Marketing Innovation	Mobility, Stability and Sustainability Challenges for Social Science, Management, IT and Education	Mobility, Stability and Sustainability Challenges for Social Science, Management, IT and Education	National	2019	978-81-941751-5-5	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
25	Rashmi	-	A study on M-Commerce Application users with reference to Mangalore region	Higher Education Metamorphosis: Quest for Quality	Higher Education on Metamorphosis: Quest for Quality	National	2019	978-81-925257-7-8	Srinivas Institute of Technology, Valachil, Mangaluru	Aneka nt Institute of Management Studies (AIMS) Bara mati Pune

26	Rashmi	-	Mobile App Based shopping in India –A New Shopping culture and Trend	Emerging Trends in Management, Information Technology and Education	Emerging Trends in Management, Information Technology, and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
27	Mallika	-	Digital Banking- "As a Time Saver Tool"	Emerging Trends in Management, Information Technology and Education	Emerging Trends in Management, Information Technology and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
28	Praveena D	-	Micro Finance Schemes of SKDRD P - A Case Study of Selected Members Of SHGS	Emerging Trends in Management, Information Technology and Education	Emerging Trends in Management, Information Technology and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
29	Raghavendra M J	-	Influence of machining cutting speed on cutting force, tool flank wear on PVD	International Conference On Emerging Research In Civil Aeronautical And Mechanical	ERCA M 2019	International	2019	978-0-7354-1955-1	Srinivas Institute of Technology, Valachil, Mangaluru	IOP Publishing

			inserts by turning of Ti-6Al-4V alloy	Engineering						
30	Raghavendra M J	-	Biosynthesis and characterization of silver nanoparticles from <i>Penicillium notatum</i> and their application to improve efficiency of antibiotics	IOP Conference Series: Materials Science and Engineering	Materials and Manufacturing Applications (IconA MMA-2018)	International	2019	ISSN: 1757-8981	Srinivas Institute of Technology, Valachil, Mangaluru	IOP Publishing
31	Shrinivasa Mayyad D	-	Micro Finance Schemes of SKDRD P - A Case Study of Selected Members Of SHGS	Emerging Trends in Management ,Information Technology and Education	Emerging Trends in Management ,Information Technology and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
32	Shrinivasa Mayyad D	-	Mobile App Based shopping in India –A New Shopping culture and Trend	Emerging Trends in Management ,Information Technology and Education	Emerging Trends in Management ,Information Technology and	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication

					Educational					
33	Shrinivasa Mayyad	-	Production culture in micro and small industries and the use of computer Assisted knowledge management in manufacturing process	Emerging Trends in Management ,Information Technology and Education	Emerging Trends in Management ,Information Technology and Education	International	2019	978-81-941751-2-4	Srinivas Institute of Technology, Valachil, Mangaluru	Srinivas Publication
34	Shrinivasa Mayyad	Electronic Instruments & Measurements	-	-	-	International	2019	978-6200275387	Srinivas Institute of Technology, Valachil, Mangaluru	Lap Lambert
35	Shrinivasa Mayyad	Nano Tribology and Fracture Mechanics	-	-	-	International	2019	978-3668864450	Srinivas Institute of Technology, Valachil, Mangaluru	GRIN Verlag
36	Shrinivasa Mayyad	Basics of Nanocomposites	-	-	-	International	2019	978-613944727	Srinivas Institute of Technology, Valachil, Mangaluru	Lap Lambert Academic Publishing

37	Lokesh K S	-	Analysis of Combination of Wing with Canard and Tail used in Fighter Aircraft	Proceedings of 1st International Conference on Emerging Trends in Engineering, Science and Management	1st International Conference on Emerging Trends in Engineering, Science and Management	National	2019	978-81-940803-5-0	Srinivas Institute of Technology, Valachil, Mangaluru	Blue Eyes Intelligence Engineering & Sciences Publication
38	Lokesh K S	-	Thermal Degradation Study on Hybrid Fibres Binded with Thermoset Plastic Used in Aerospace Industry	Proceedings of National Conference on Recent Trends and Innovations in Mechanical Engineering and Technology	National Conference on Recent Trends and Innovations in Mechanical Engineering and Technology	National	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Camb ridge Institute of Technology, Bangalore, India
39	Yashwanth A K. Marigowda	-	Biosynthesis and characterization of silver nanoparticles from Penicillium notatum and their application to improve efficiency of antibiotics	IOP Conference Series: Materials Science and Engineering	Materials and Manufacturing Applications (IConA MMA-2018)	International	2019	ISSN: 1757-8981	Srinivas Institute of Technology, Valachil, Mangaluru	IOP Publishing

40	Sathy aprak ash A	-	Producti on culture in micro and small industrie s and the use of computer Assisted knowled ge manage ment in manufact uring process	Emerging Trends in Managem ent ,Informati on Technology and Education	Emergi ng Trends in Manage ment ,Inform ation Techno logy and Educati on	Internat ional	2019	978- 81- 94175 1-2-4	Srinivas Institute of Technolo gy, Valachil, Mangalu ru	Sriniv as Public ation
41	Girish A R	-	Bio fuel as a Surrogat e fuel to Mineral oil- A review	National Conferenc e on Recent Advances in Mechanica l Engineerin g And Technolog y	Nationa l Confere nce on Recent Advanc es in Mechan ical Engine ering And Techno logy	Nationa l	2019	10.37 628/IJ PNC	Srinivas Institute of Technolo gy, Valachil, Mangalu ru	STM Journ als
42	Girish A R	-	Tribologi cal behavior of AISI 1055 under Formulat ed Vegetabl e Oils for Automot ive	10th Internation al Conferenc e on Industrial Tribology	IndiaTr ib – 2019	Internat ional	2019	-	Srinivas Institute of Technolo gy, Valachil, Mangalu ru	Indian Institu te of Scien ce (IISc), Banga lore

43	Girish A R	-	Study on Performance and Emission Characteristics of Four stroke Gasoline engine under Formulated Neem oil as base lubricant	10th International Conference on Industrial Tribology	India Trib – 2019	International	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Indian Institute of Science (IISc), Bangalore
44	Girish AR	-	Formulated Pongamia oil as an engine Lubricant for Four Stroke Spark Ignition Engine Operation	Proceedings of National Conference on advances in Science, Engineering and management (NCASE M-2019)	National Conference on advances in Science, Engineering and management (NCASEM-2019)	National	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Vivekananda College of Engineering and Technology
45	Girish AR	-	Experimental study on performance and emission characteristics of four stroke gasoline engine under formulated Coconut oil as	Proceedings of National Conference on Emerging Trends in Mechanical Engineering, June 2019	National Conference on Emerging Trends in Mechanical Engineering, June 2019	National	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Reva University,

			engine lubricant							
46	Jerome Anthony	-	Tribological behavior of AISI 1055 under Formulated Vegetable Oils for Automotive	10th International Conference on Industrial Tribology	IndiaTrib – 2019	International	2019	-	Srinivas Institute of Technology, Valachil, Mangaluru	Indian Institute of Science (IISc), Bangalore
47	Vinay aka Kannantha	-	Effect of E-waste Rubber on Mechanical Behavior of Glass a fiber Reinforced with Epoxy Composites	AIP Conference proceedings	Emerging Trends in Mechanical Engineering 2018	International	2019	978-0-7354-1810-3	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
48	Vinay aka Kannantha	-	Experimental evaluation of substrate and annealing conditions on ZnO thin films prepared by sol-	International Conference on Advances in Materials and Manufacturing Applications	Elsevier's Materials Today: Proceedings	International	2019	ISSN: 2214-7853	Srinivas Institute of Technology, Valachil, Mangaluru	Elsevier

			gel method							
49	Vinayaka Kannan	-	First Pass Yield improvement in Fuel Injection Pump Delivery Valve Assembly	AIP Conference proceedings	Emerging Trends in Mechanical Engineering 2018	International	2019	978-0-7354-1810-3	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
50	Subhas Hunasikatti	-	Effect of E-waste Rubber on Mechanical Behavior of Glass a fiber Reinforced with Epoxy Composites	AIP Conference proceedings	Emerging Trends in Mechanical Engineering 2018	International	2019	978-0-7354-1810-3	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
51	Sharefraz J. Ukku	-	Biosynthesis and characterization of silver nanoparticles from Penicillium notatum and their application to improve efficiency of	IOP Conference Series: Materials Science and Engineering	Materials and Manufacturing Applications (IConA MMA-2018)	International	2019	ISSN: 1757-8981	Srinivas Institute of Technology, Valachil, Mangaluru	IOP Publishing

			antibiotic s							
52	Naveen J R	Electronic Instruments & Measurements	-	-	-	International	2019	978-6200275387	Srinivas Institute of Technology, Valachil, Mangaluru	Lap Lambert
53	Naveen Kumar J. R.	Physical & Chemical Principles of Nanotechnology	-	-	-	International	2019	978-3668928831	Srinivas Institute of Technology, Valachil, Mangaluru	GRIN Verlag
54	Naveen Kumar J. R.	-	Effect of E-waste Rubber on Mechanical Behavior of Glass a fiber Reinforced with Epoxy Composites	AIP Conference proceedings	Emerging Trends in Mechanical Engineering 2018	International	2019	978-0-7354-1810-3	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
55	Naveen Kumar J. R.	-	Experimental evaluation of substrate and annealing conditions on ZnO	International Conference on Advances in Materials and Manufacturing	Elsevier's Materials Today: Proceedings	International	2019	ISSN: 2214-7853	Srinivas Institute of Technology, Valachil, Mangaluru	Elsevier

			thin films prepared by sol-gel method	Applications						
56	Naveen Kumar J R	-	First Pass Yield improvement in Fuel Injection Pump Delivery Valve Assembly	AIP Conference proceedings	Emerging Trends in Mechanical Engineering 2018	International	2019	978-0-7354-1810-3	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
57	Abhinaya N.	-	Biosynthesis and characterization of silver nanoparticles from Penicillium notatum and their application to improve efficiency of antibiotics	IOP Conference Series: Materials Science and Engineering	Materials and Manufacturing Applications (IConA MMA-2018)	International	2019	ISSN: 1757-8981	Srinivas Institute of Technology, Valachil, Mangaluru	IOP Publishing
58	Prasad P	Electronic Instruments & Measurements	-	-	-	International	2019	978-6200275387	Srinivas Institute of Technology, Valachil, Mangaluru	Lap Lambert

59	Prasad P	-	Biosynthesis and characterization of silver nanoparticles from <i>Penicillium notatum</i> and their application to improve efficiency of antibiotics	IOP Conference Series: Materials Science and Engineering	Materials and Manufacturing Applications (IConA MMA-2018)	International	2019	ISSN: 1757-8981	Srinivas Institute of Technology, Valachil, Mangaluru	IOP Publishing
60	Prasad P	Nano Tribology and Fracture Mechanics	-	-	-	International	2019	978-3668864450	Srinivas Institute of Technology, Valachil, Mangaluru	GRIN Verlag
61	Prasad Puthiyillam	Physical & Chemical Principles of Nanotechnology	-	-	-	International	2019	978-3668928831	Srinivas Institute of Technology, Valachil, Mangaluru	GRIN Verlag
62	Prasad P	Basics of Nanocomposites	-	-	-	International	2019	978-613944727	Srinivas Institute of Technology, Valachil, Mangaluru	Lap Lambert Academic Publishing

63	Lokesh K.S	-	Effect of E-waste Rubber on Mechanical Behavior of Glass a fiber Reinforced with Epoxy Composites	AIP proceedings	Emerging Trends in Mechanical Engineering 2018	International	2019	978-0-7354-1810-3	Srinivas Institute of Technology, Valachil, Mangaluru	AIP Publishing
64	Lokesh K S	-	Experimental evaluation of substrate and annealing conditions on ZnO thin films prepared by sol-gel method	International Conference on Advances in Materials and Manufacturing Applications	Elsevier's Materials Today: Proceedings	International	2019	ISSN: 2214-7853	Srinivas Institute of Technology, Valachil, Mangaluru	Elsevier
65	Lokesh K S	Nano Tribology and Fracture Mechanics	-	-	-	International	2019	978-3668864450	Srinivas Institute of Technology, Valachil, Mangaluru	GRIN Verlag
66	Lokesh K S	Basics of Nano composites	-	-	-	International	2019	978-613944727	Srinivas Institute of Technology, Valachil, Mangaluru	Lap Lambert Academic Publishing


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Ashwani K. Gupta
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Engine Performance and Emission Studies with Cotton Seed—Simarouba and Cotton Seed—Mahua Oil Blends as a Partial Replacement Biofuel

[Ramakrishna N. Hegde](#)  & [B. Jagadeesh](#)

Conference paper | First Online: 19 August 2020

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Engine Performance and Emission Studies with Cotton Seed—Simarouba and Cotton Seed—Mahua Oil Blends as a Partial Replacement Biofuel



Ramakrishna N. Hegde and B. Jagadeesh

1 Introduction

Owing to the fast depleting petroleum-based fuels of late, many alternate ways are being explored by researchers across the globe to partially or fully substitute them. One of the ways to meet the growing demand found by researchers is use of biodiesel which has multiple advantages and could be used without altering the existing IC engines. India spends quite a higher percent of its GDP on oil imports despite being an agriculture-based country. Millions of tons of agri wastes are generated in India which means partial replacement of conventional petroleum-based fuels is not a tough job. Non-edible oils and seeds like cotton seed, Simarouba, Mahua, etc. are being widely used for this purpose. Even though using the blends is not uncommon, research scope is still available to investigate the double blends along with diesel, which is the main focus of the present paper. After characterization of both oil blends using a heterogeneous catalyst (MgPO_4), subsequent trans-esterification, and checking conformity as per ASTM standards, the performance testing was done using three combinations of blends and engine operating conditions.

Some of the literatures available are quoted here. Leenus et al. [1] investigated the using cotton seed oil in a diesel engine and reported the respective brake thermal efficiencies of 32.3 and 28% for diesel and CSO. They further noticed that the preheated (90°C) 60–40 blend increased brake thermal efficiency and decreased the smoke level. Dilip et al. [2] investigated effect of Simarouba Oil Methyl Ester (SOME) at

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Paper 16

WOMEN IN STEAM: A PERSPECTIVE OF PRESENT TRENDS, OPPORTUNITIES AND CHALLENGES IN ENGINEERING AND TECHNOLOGY

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Abstract

Science, Technology, Engineering, Arts and Mathematics (STEAM) are the major contributors to education policies and curriculum choices in schools. STEAM has been mainly applied and addressed to the preschools, schools and predominantly in high schools. It has played a major role in the overall development of the students and nowadays, is being applied to the Higher Education Institutes (HEIs). The major drawback in the STEAM field is found out to be the discrimination of women in STEAM fields and it has lead to a lot of negative effects on the society. The research focuses on the students' perspective of women in STEAM fields and a lot of discussions are done to understand the reasons behind the disparity. Both urban and rural backgrounds were considered for the discussion to understand the kind of support and equality, the learning environment and in the STEAM field professions. Many constraints for women in STEAM fields are taken into consideration like lack of equality, safety problems, financial constraints and pay gap with the male counterparts. Lately, there are some visible changes in the mindset of parents irrespective of different backgrounds. The curtains of old traditions and restrictions are slowly but definitely are opening and the girls have the urge to learn, compete and to take responsibly even in unconventional branches of engineering like automobile and aeronautical. But still, a lot of women graduate in STEAM fields but fail to make a successful career out of it. A lot of statistical data from PISA is also taken into consideration for the research.

Keywords: STEAM, disparity, HEI.

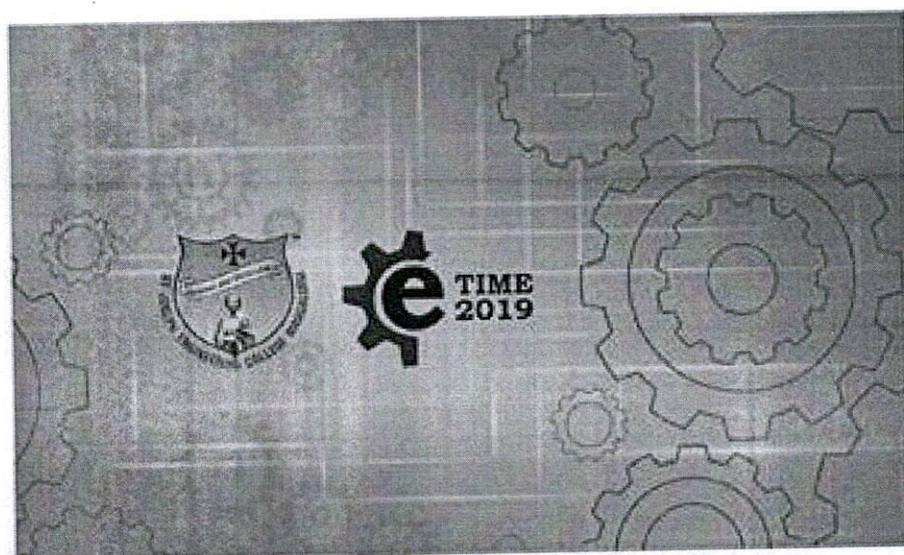
1.Introduction

Research and development, creativity and innovations are the basis for modern society. All the major innovations happening across the world is from the Science, Technology, Engineering, Arts and Mathematics fields or popularly referred as STEAM fields. Initially it was only Science, Technology, Engineering and Mathematics (STEM) field, arts being added at the later stage. Since for a long time the STEM fields contributed to the society. The origin of STEM field is unknown, but it has come to prominence in last 15-25 years. But it found a major flaw that it has become subject centric and hence STEAM field came to existence which is people centric. Early founder of STEAM field initiative is Georgette Yakman, who has incorporated Arts to STEM field. She also found a formal way

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Editor • Purushothama Chippar



Effect of using fins in cooking vessel to improve heat transfer rate 🛒

Vijay Vallaya Shashidhar

AIP Conf. Proc. 2236, 030008 (2020) <https://doi.org/10.1063/5.0006788>

Abstract ▼

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A modified correlation to predict heat transfer coefficient in a horizontal 'coil in shell heat exchanger' with circular fins using nanofluids 🛒

Niranjana Rai; Ramakrishna Narasimha Hegde

AIP Conf. Proc. 2236, 030009 (2020) <https://doi.org/10.1063/5.0006822>

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Deepak Kathladka Balakrishna; Manujesh Boovanahalli Javaregowda; Harish Sheniramaiah; Satheesha Kumar Kuvenja

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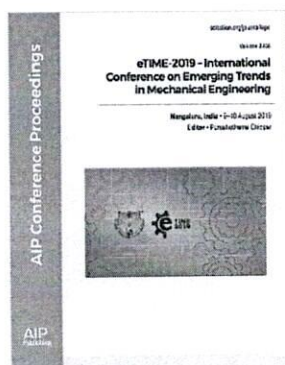
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A modified correlation to predict heat transfer coefficient in a horizontal 'coil in shell heat exchanger' with circular fins using nanofluids

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A lot of investigations intended towards getting better heat transfer rate by intensification of heat transfer in heat exchangers are, either by increasing the surface area or by improving the convective heat transfer coefficient. The use of combined augmentation techniques yields an improvement of heat transfer in heat exchangers. In this study a comparison of heat transfers of $\text{Al}_2\text{O}_3/\text{water}$ nanofluid in a horizontal coil in shell heat exchanger with (FCHE) and without circular fins (CSHE) with counter flow configuration is done to develop a correlation for Nusselt number. The investigation reveals that heat transfer enhancement in FCHE was about 44.12% compared to CSHE with 1%

Numerical and Experimental Study of Heat Transfer from a Flat Plate with Multi-Impingement Jet

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Abstract- The most commonly used method of cooling of gas turbine blades is Jet Impingement. The present work focuses on experimental and numerical analysis of cooling of gas turbine blades by multi jet impingement. The fluid flow and heat transfer calculation are carried out by using Shear stress transport (SST) turbulence model. The combined thermo fluid dynamic features of impingement jets are described. The effects of jet Reynolds number (Re), target spacing-to-jet diameter ratio (z/d) on Nusselt number (Nu) of the target plate are examined. These numerical results are compared with the available experimental data. It is found that Nu increases by 17.54% by increasing Reynolds number from 1040 to 1400 at $z/d = 2.29$. By increasing z/d ratio from 2.29 to 3.43, Nu decreases by 14% at Re 1400. It is also observed that in multi-jet impingement, spacing between the air jets play important role.

Keywords— Multi – Jet Impingement cooling, Heat Transfer, CFD.



An Experimental Study Based Comparison of Engine Performance Characteristics Using Natural Seed and Animal Fat Based Bio-Fuels

Ramakrishna N. Hegde and Jagadeesh Bantwal

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An Experimental Study Based Comparison of Engine Performance Characteristics Using Natural Seed and Animal Fat Based Bio-Fuels

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Engine Performance and Emission Studies with Cotton Seed—Simarouba and Cotton Seed—Mahua Oil Blends as a Partial Replacement Biofuel



Ramakrishna N. Hegde and B. Jagadeesh

1 Introduction

Owing to the fast depleting petroleum-based fuels of late, many alternate ways are being explored by researchers across the globe to partially or fully substitute them. One of the ways to meet the growing demand found by researchers is use of biodiesel which has multiple advantages and could be used without altering the existing IC engines. India spends quite a higher percent of its GDP on oil imports despite being an agriculture-based country. Millions of tons of agri wastes are generated in India which means partial replacement of conventional petroleum-based fuels is not a tough job. Non-edible oils and seeds like cotton seed, Simarouba, Mahua, etc. are being widely used for this purpose. Even though using the blends is not uncommon, research scope is still available to investigate the double blends along with diesel, which is the main focus of the present paper. After characterization of both oil blends using a heterogeneous catalyst ($MgPO_4$), subsequent trans-esterification, and checking conformity as per ASTM standards, the performance testing was done using three combinations of blends and engine operating conditions.

Some of the literatures available are quoted here. Leenus et al. [1] investigated the using cotton seed oil in a diesel engine and reported the respective brake thermal efficiencies of 32.3 and 28% for diesel and CSO. They further noticed that the preheated (90 °C) 60–40 blend increased brake thermal efficiency and decreased the smoke level. Dilip et al. [2] investigated effect of Simarouba Oil Methyl Ester (SOME) at

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Analysis of Combination of Swing Wing with Canard and Tail used in Fighter Aircraft

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Abstract:--

The present work discloses the new design of a fighter aircraft. Better performance of a fighter in the combat as well in its ground activities is the main vision of our work. It is concentrating on the aircraft short distance take off and landing, stalling controlling, as well as different maneuverings of the aircraft. Many fighter aircraft are having its own working parameters and configurations. Every aircraft shown its own characteristics in flight like maneuverings, stalling etc. The major problem of them is prohibiting some of these characteristics in some angle of attack. So to control we have implemented some modifications. To achieve all these characteristics, we have selected the combination of swing wing with canard and tail configuration. By using this technology we can increase the flight ability to its maximum. So all the characteristics are in the control as we have designed.

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Fabrication of Helicopter Swashplate to demonstrate Collective and Cyclic Pitch Control

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Abstract

As in case of Aircrafts the control surfaces helps the aircrafts in maneuvering. Where as in Helicopters swashplates does the work of control surfaces. Helicopters are the one of the most complex machines present in the world. With advancement in technology it becomes a need to reduce complexity and weight of this machine. The purpose of the swashplate is to convert stationary control inputs from the pilot into rotating inputs which can be connected to the rotor blades or control surfaces. The conventional Swashplates are bulky and becomes a major problem for aerodynamics of helicopters.

In this paper a design of swashplate is discussed. In major it consists of two main parts: stationary plate and a rotating plate. The whole assembly is placed inside the main rotor mast (which is hollow from inside) and connected to the cyclic and collective controls by a series of push rods. The whole assembly is not connected to the rotor mast at any point and can tilt in all directions and move vertically. The rotating swashplate is mounted to the stationary swashplate by means of a thrust bearing. It is connected to the rotor blades by drive links and must rotate in constant relationship with the rotor blades. Both swashplates tilt and slide up and down as one unit. A tap is introduced to keep both the plates and bearing intact.

Keywords: rotor mast, push rods, thrust bearing

1. Introduction

Blade feathering, or pitch change, could be achieved in various ways. The use of aerodynamic servo tabs, auxiliary rotors, fluidically controlled jet flaps, or pitch links from a control gyro as possible methods. The widely adopted method, however, is through a swashplate system.

The stationary swashplate is mounted inside the main rotor mast and connected to the cyclic and collective controls by a series of pushrods. It is restrained from rotating by an ant drive link but can tilt in all directions and move vertically. The rotating swashplate is mounted to the stationary swashplate by means of a uniball sleeve. It is connected to the mast by drive links and must rotate in constant relationship with the main rotor mast. Both swashplates tilt and slide up and down as one unit. The rotating swashplate is connected to the pitch horns by the pitch links.

2. Literature Review

A Swashplate assembly according to the present invention includes a rotationally stationary Swashplate and rotational swashplate which rotates relative to the rotationally stationary Swashplate through a bearing system. The bearing system includes a duplex bearing which need not increase to accommodate bolt or expandable pin removal as typical of conventional systems. Such a bearing system provides for an uncomplicated and lightweight arrangement. Each servo control rod is attached to the Swashplate assembly to communicate control inputs thereto through a respective servo lug. Each servo lug defines a servo pivot point off an in-line plane inboard of the bearing system. As the servo lugs extend below the rotationally stationary Swashplate, a relatively uncomplicated attachment arrangement is facilitated as compared to a more conventional trunnion attachment. Attachment is provided by a servo lug fastener Such as bolted connection. Such attachment facilitates for

redundant locking features at a highly inspectable location which simplifies maintenance and increases safety.

Each pitch control rod is attached to the rotational swashplate assembly to communicate pitch commands to a respective rotor blade assembly through a respective pitch lug which defines a rotor pitch control point. The rotor pitch control point as defined by the rotational Swashplate is located on the in-line plane which passes through the central pivot point.

By locating the servo pivot point just inboard of the bearing system, an exceeding compact load path is defined thereby. The load path is defined from the servo control rod, to the servo lug, through the rotationally stationary Swashplate, bearing system, the rotational Swashplate, the rotor pitch control point and into the pitch control rod. The present invention therefore provides an uncomplicated, short load path Swashplate assembly which provides the desired compactness. [1]

Accordingly, it is an object of this invention to provide a swashplate control system that provides a better control over rotor blade positioning under different operating conditions than obtainable with prior art swashplate control systems. It is another object of the invention to provide such a swashplate control system that decouples lateral and longitudinal cyclic inputs to the swashplate without requiring the use of a mixer box. It is a further object of the invention to provide such a swashplate control system which provides direct, linear read-out of lateral cyclic, longitudinal cyclic and collective swashplate positions. It is still another object of the invention to provide such a swashplate control system that returns the swashplate to a zero collective position rapidly when desired. The attainment of these and related objects may be achieved through use of the novel swashplate control system herein disclosed.

A swashplate control system in accordance with this invention has a first gimbal ring pivotally mounted along a longitudinal axis. A second gimbal ring is pivotally attached to the first gimbal ring along a lateral axis. A first linear actuator is connected to pivot the first gimbal ring along the longitudinal axis. A second linear actuator is connected to pivot the second gimbal

Thermal Degradation Study on Hybrid Fibres Binded with Thermoset Plastic Used in Aerospace Industry

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Abstract

Composites are extensively used in aircrafts for their best strength to weight ratio. They are anisotropic, i.e. can be designed for best strength in a particular direction. Adding filler material to the composites enhances its properties. Carbon NANO Tubes is one such filler material that has low moisture and oil absorption, low volatile content and high impact resistance which could be a potential combination of composite material, for use in interiors of the aircraft. In this work, Carbon NANO Tubes in different composition (0%, 1%, 2% and 3%) was added to the E-glass/Epoxy composite and the resulting composite was tested to evaluate the mechanical properties and thermal ageing.

Thermal ageing was done for each specimen before impact test for 72 hours. For the temperature range selected was 40°C, the matrix was hardened due to the chilled effects (a thermo-set resin) and hence the properties increased for heating cycle for all the samples. Fibre reinforced composites offer many advantages over conventional structural materials. They have high strength and modulus-to-weight ratios, are fatigue and corrosion resistant and require low maintenance. However, because of their unknown long term properties when exposed to a combination of in-service loads and environments, they are not used in primary load bearing structures. The effect of exposure to heat, moisture, hydrocarbons, fatigue and static loads and more importantly a combination of these parameters may degrade the material's stiffness and strength. The lack of long term data for fibre reinforced composites has led for an accelerated ageing methodology that will predict the effect of such a degradation that might have on the residual properties. Hence thermal ageing is performed before testing. Thermal ageing is performed at various temperatures and room temperature. The specimens are kept in the freezer for cooling cycles at the desired temperature and in hot air oven for heating cycles for 72hrs. This results in change in micro-structure, the structural degradation depending on the temperature and the ageing time.

1. Introduction

A composite material can be defined as amalgamation of two or more materials that results in better properties than those of the individual components used alone. In contrast to metallic alloys, each material retains its separate chemical, physical, and mechanical properties. Composites are kind of materials which are created by integrating dissimilar materials of having different characteristics which are united macroscopically to get desired characteristics of new materials. The main objective of combining alternative features of different materials is to get high strength, stiffness, toughness and also to enhance good wear resistance properties (tailoring the properties). In this work, choice of e-glass fibre/epoxy composite with carbon nano tube as an additive is obvious for the following reasons. For best strength to -weight ratio and impact resistance, hybrid composites made of Epoxy, E-glass fibres and carbon nano tubes can be used. Also, the addition of carbon nano tube to the E-Glass fibre/Epoxy composites increases the bending properties of the E-Glass fibre composite. Carbon nano tubes can also be used for high strength, stiffness and can be used in aerospace, automobile, marine and lightweight article applications.

E-Glass fibres, especially produced in a bi-directional form, offer sufficient resistance to an object during impact with low material cost as compared with carbon fibres, which make them more attractive for many structural applications. Among all different

kinds of thermosets, epoxies are well-known for their outstanding mechanical properties such as resistance to micro-cracking, chemical inertness, good thermal and dimension stabilities. In current aircraft and automotive composite components, epoxies are mostly used.

2. Literature Survey

An exhaustive literature survey made on epoxy/e-glass composites shows lot of research and investigations have been done especially on fabrication and subsequent characterization in various engineering applications. In this chapter, some selected literatures are mentioned and their outcomes are discussed. N. Guermazi, N. Haddar, K. Elleuch, H.F. Ayedi conducted investigations on the fabrication and the characterization of glass/epoxy, carbon/epoxy and hybrid composites used in the reinforcement and the repair of aeronautic structures [1]. Mehmet Aktas, Cesim Atas, Bu lent Murat icten, Ramazan Karakuzu Investigated the impact response of unidirectional e-glass epoxy laminates by considering energy profile diagrams and associated load-deflection curves [2]. Sivasaravanan S a, V.K.Bupesh Rajab, Manikandanc investigated impact characterization of Epoxy LY556/E-Glass Fibre/ Nano Clay Hybrid Nano Composite materials [3]. Amin Salehi-Khojin, Reza Bashirzadeh, Mohammad Mahinfalah, and Reza Nakhaei-Jazar investigated the role of temperature on impact properties of Kevlar/fiber glass composite laminates [4]. Cesim Atas, Akar Dogan, studied the effect of thermal ageing on low velocity impact response of E-glass/epoxy composites.

Numerical and Experimental Study of Heat Transfer from a Flat Plate with Multi-Impingement Jet

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Abstract- The most commonly used method of cooling of gas turbine blades is Jet Impingement. The present work focuses on experimental and numerical analysis of cooling of gas turbine blades by multi jet impingement. The fluid flow and heat transfer calculation are carried out by using Shear stress transport (SST) turbulence model. The combined thermo fluid dynamic features of impingement jets are described. The effects of jet Reynolds number (Re), target spacing-to-jet diameter ratio (z/d) on Nusselt number (Nu) of the target plate are examined. These numerical results are compared with the available experimental data. It is found that Nu increases by 17.54% by increasing Reynolds number from 1040 to 1400 at $z/d = 2.29$. By increasing z/d ratio from 2.29 to 3.43, Nu decreases by 14% at Re 1400. It is also observed that in multi-jet impingement, spacing between the air jets play important role.

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Paper 16

WOMEN IN STEAM: A PERSPECTIVE OF PRESENT TRENDS, OPPORTUNITIES AND CHALLENGES IN ENGINEERING AND TECHNOLOGY

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Abstract

Science, Technology, Engineering, Arts and Mathematics (STEAM) are the major contributors to education policies and curriculum choices in schools. STEAM has been mainly applied and addressed to the preschools, schools and predominantly in high schools. It has played a major role in the overall development of the students and nowadays, is being applied to the Higher Education Institutes (HEIs). The major drawback in the STEAM field is found out to be the discrimination of women in STEAM fields and it has lead to a lot of negative effects on the society. The research focuses on the students' perspective of women in STEAM fields and a lot of discussions are done to understand the reasons behind the disparity. Both urban and rural backgrounds were considered for the discussion to understand the kind of support and equality, the learning environment and in the STEAM field professions. Many constraints for women in STEAM fields are taken into consideration like lack of equality, safety problems, financial constraints and pay gap with the male counterparts. Lately, there are some visible changes in the mindset of parents irrespective of different backgrounds. The curtains of old traditions and restrictions are slowly but definitely are opening and the girls have the urge to learn, compete and to take responsibly even in unconventional branches of engineering like automobile and aeronautical. But still, a lot of women graduate in STEAM fields but fail to make a successful career out of it. A lot of statistical data from PISA is also taken into consideration for the research.

Keywords: STEAM, disparity, HEI.

1. Introduction

Research and development, creativity and innovations are the basis for modern society. All the major innovations happening across the world is from the Science, Technology, Engineering, Arts and Mathematics fields or popularly referred as STEAM fields. Initially it was only Science, Technology, Engineering and Mathematics (STEM) field, arts being added at the later stage. Since for a long time the STEM fields contributed to the society. The origin of STEM field is unknown, but it has come to prominence in last 15-25 years. But it found a major flaw that it has become subject centric and hence STEAM field came to existence which is people centric. Early founder of STEAM field initiative is Georgette Yakman, who has incorporated Arts to STEM field. She also found a formal way

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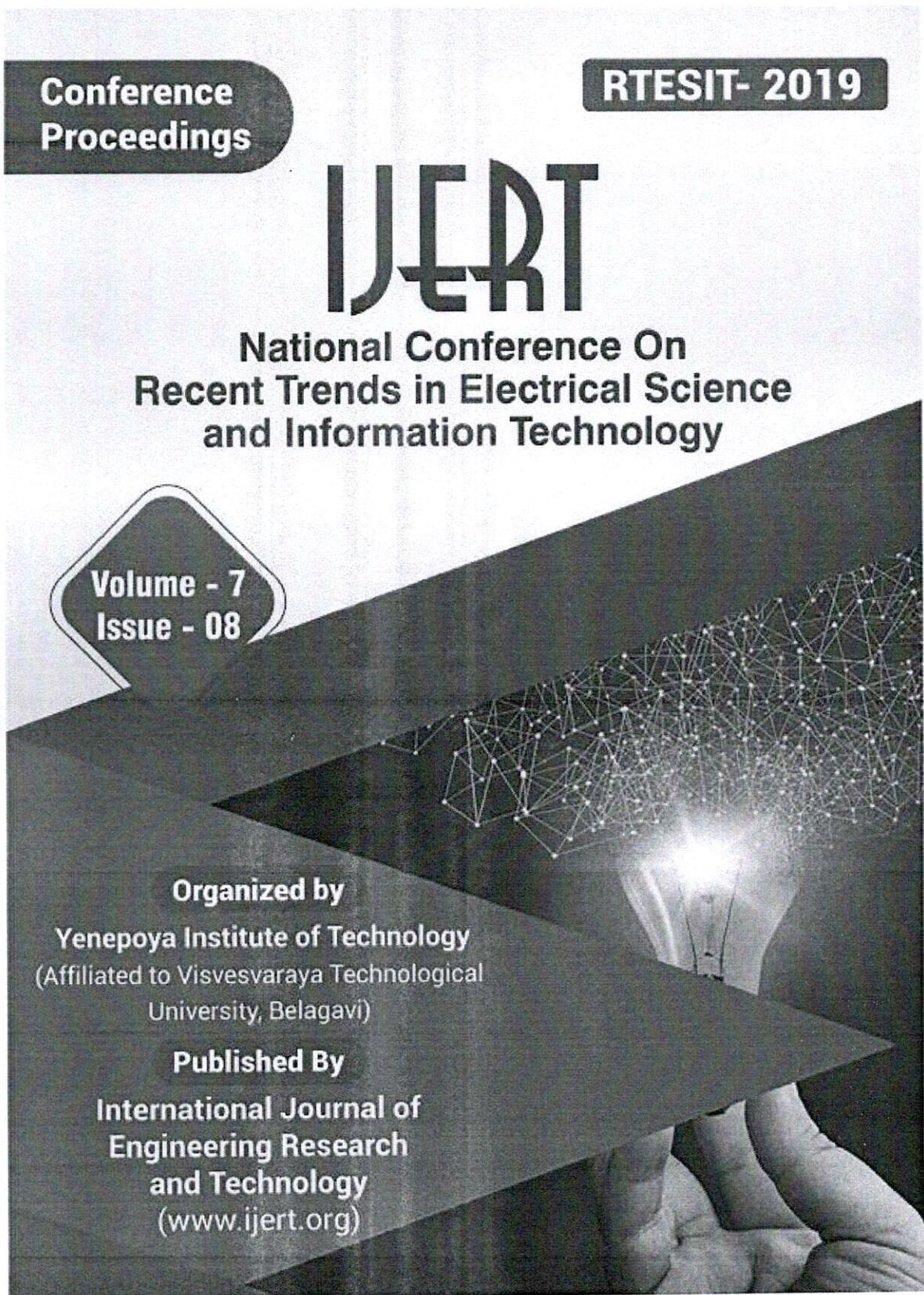
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Blind's Eye – Wearable Object Detection, Recognition and Identification for Visually Impaired

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Abstract - In this generation printed text appears everywhere. Because of this blind people always take help of others to buy some product. Thus blind people need some assistance to read text information of the product. In worldwide there are over 314 million visually challenged people. Therefore, we come up with the system that reads text from product labels and help blind by working as a shopping aid. The system is developed on Raspberry Pi model using python programming language. It uses the Optical Character Recognition technology for the identification of the printed characters using image sensing devices and computer programming. The system captures the document image placed in front of the camera. The OCR (Optical Character Recognition) package installed in Raspberry Pi scans it into a digital document which is then subjected to grey scale conversion, erosion, image dilation, segmentation to perform character recognition. After recognition, the product is identified as soap, paste, book or as such. And then the recognized text is fed into a text to speech synthesizer that will convert this printed text into voice and then this output will be heard by the blind person, thereby he will be able to read texts from any handheld object such as products during shopping.

1. INTRODUCTION

Reading is obviously essential in today's society. Printed text is seen in every product packages. Visually impaired people cannot read these texts. The implementation of this paper help blind to read printed labels and product packages. This will enhance independent living, and faster economic and social sufficiency. Today there are already a few systems that have some promise for portable use, but they cannot handle product labelling. For example portable bar code readers designed to help blind people identify different products in an extensive product database can enable users who are blind to access information about these products through speech. But a big limitation is that it is very hard for blind users to find the position of the bar code and to correctly point it at the bar code reader.

Blind's Eye is proposed to help blind persons read text labels and product packaging from hand-held objects in their daily lives. To identify the desired letters in the label from the camera image, Tesseract OCR is used. The recognized text codes are output to blind users in speech.

1.1 Problem Statement

Today, there are already a few systems that have some promise for portable use, but they cannot handle product labelling and consumes more time. Some reading assistive systems such as pen scanners might be employed in these and similar situations. Such systems integrate OCR software to offer the function of scanning and recognition of text and some have integrated voice output. Two of the biggest challenges to independence for blind individuals are

- Difficulties in accessing printed material.
- The stressors associated with safe and efficient navigation.

1.2 Existing System

Most of the OCR software cannot directly handle scene images with complex backgrounds. A number of portable reading assistants have been designed specifically for the visually impaired. Although a number of reading assistants have been designed specifically for the visually impaired, to our knowledge, no existing reading assistant can read text from the kind of challenging patterns and back-grounds found on many everyday commercial products. In assistive reading systems for blind persons, it is very challenging for users to position the object of interest within the centre of the camera's view. As of now, there are still no acceptable solutions.

1.3 Proposed System

The proposal presents a prototype system of assistive text reading. In this project, we have proposed a text read out system for the visually challenged. The proposed fully integrated system has a camera as an input device to feed the printed text document for digitization and the scanned document is processed by a software module, the OCR (optical character recognition engine). A methodology is implemented to the recognition sequence of characters and the line of reading. As part of the software

Fruit Recognition using Image Processing

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Abstract: The ability to identify the fruits based on the quality in food industry is very important nowadays where every person has become health conscious. There are different types of fruits available in the market. However, to identify best quality fruits is cumbersome task. Therefore, we come up with the system where fruit is detected under natural lighting conditions. The method used is texture detection method, color detection method and shape detection. For this methodology, we use image segmentation to detect particular fruit. Fruit Detection project is implemented in MATLAB image processing toolbox. The project is implemented for both Real time and Non-Real time. The proposed method has four stages: First is Pre-Processing and second is Feature Extraction and third is Segmentation and fourth Recognition. In case of Non-Real time, the first stage is used to browse the image, second stage is extraction of the features from images using Grey Level Co-occurrence Matrix (GLCM), RGB and Color Histogram. System will convert the image from RGB to grayscale image for further processing. The color histogram represents the distribution of colors in an image. Since image is captured under different illumination condition. In the third stage, the three extracted image is obtained in the form of red, green and blue. In the fourth stage, the extracted features are used as input to Support Vector Machine (SVM) classifier. Then name of the fruit is output is obtained.

INTRODUCTION

Recognizing different kinds of vegetables and fruits is a difficult task in supermarkets, since the cashier must point out the categories of a particular fruit to determine its price. The use of barcodes has mostly ended this problem for packaged products but given that most consumers want to pick their products, they cannot be pre-packaged, and thus must be weighed. A solution is issuing codes for every fruit, but the memorization is problematic leading to pricing errors. Another solution is to issue the cashier an inventory with pictures and codes, however, flipping over the booklet is time consuming. Automatic classification of fruits via computer vision is still a complicated task due to the various properties of many types of fruits. The fruit quality detection technique which was based on external properties of fruits such as shape, size and color.

The proposed method is based on the use of Support Vector Machine (SVM) with the desirable goal of accurate and fast classification of fruits. Support Vector Machines (SVMs) is a classification method based on machine learning theory. SVMs have significant advantages because of their high accuracy, elegant mathematical tractability, and direct geometric interpretation. Besides, they do not need a large number of training samples to avoid overfitting. The task here is to automatically detect and classify the fruits image acquired from database. Assuming that the different images are present and some are overlapped on one another. The proposed work mainly gives a review that what steps are performed throughout the entire process to detect particular fruit. Since image is captured under different natural condition. The framework mainly consists of two phases. In the first phase textural features are extracted from fruit and in the second phase fruit is classified as detected fruit. The measurements obtained from the study of textural feature are given as input to the SVM classifier for training in order to classify it. Finally, system will detect objects and will display as an output. The objective of Fruit Recognition using image processing is to design a incremental model to recognize the fruits based on size, shape and colour of the fruit ignoring external features like environment, noise and background. This just focus the image of particular fruit and identify the fruit. An approach of classification using Support Vector Machine Classifier that has very good working efficiency produces the accurate results. The system helps to improve the performance. Maintaining the project is easy and manageable.

II. RELATED WORK

In [1], they have recognized nine different classes of fruits. Fruit image dataset are obtained from web as well as certain images are acquired by using mobile phone camera. These images are pre-processed to subtract the background and extract the blob representing fruit. For representing fruits and capturing their visual characteristics, combination of color, shape and texture features are used. These feature datasets is further passed to two different classifiers multiclass SVM and KNN. The color image is firstly

Automatic Waste Management

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Abstract—Ordinarily, in our city we see that the waste canisters or dustbins set at open spots are over-burden. It makes unhygienic conditions for individuals just as offensiveness to that place leaving awful stench. To maintain a strategic distance from such circumstances the proposed task will be executed for effective waste administration utilizing IOT. These dustbins are interfaced with arduino based framework having ultrasonic remote frameworks alongside focal framework demonstrating current status of trash, on portable web application with Android application by Bluetooth. Henceforth the status will be refreshed on to the Application. The fundamental point of this task is to lessen HR and endeavors alongside the upgrade of a shrewd city vision.

Keywords—*Arduino, ultrasonic sensor, Bluetooth transceiver.*

I. INTRODUCTION

Internet and its applications have turned into an indispensable piece of the present human way of life. It has turned into a basic apparatus in each viewpoint. Because of the enormous interest and need, scientists went past associating only PCs into the web. These examines prompted the introduction of a sensational gizmo, Internet of Things (IOT). Communication over the web has developed from client - client collaboration to gadget - gadget connections nowadays. The IOT ideas were proposed a very long time back, yet at the same time it's in the underlying phase of business arrangement.

Home mechanization industry and transportation ventures are seeing quick development with IOT. However very few articles have been distributed in this field of study. This record points in organizing a best in class survey on IOT. The innovation, history and applications have been talked about quickly alongside different measurements. Since a large portion of the procedure is done through the web we should have a functioning rapid web association. The innovation can be basically clarified as an association between human PCs things. All the hardwares we use in our everyday life can be controlled and checked utilizing the IOT. A greater part of procedure is finished with the assistance of sensors in IOT. Sensors are sent all over the place and these sensors convert crude physical information into computerized flags and transmits them to its control focus. By along these lines we can screen condition changes remotely from any piece of the world by means of web. This current framework's design would be founded on setting of activities and procedures continuously situations. smart garbage container works in the comparative way with the ultrasonic sensor that shows its profundity of waste in the receptacle. The ultrasonic sensor will demonstrate to us the

different level of waste in the dustbins and to send its yield ahead when its edge level is crossed. These subtleties are additionally given to the arduino and the controller gives the subtleties to the transmitter module (Bluetooth module). At the beneficiary area a mobile handset is should have been associated with the bluetooth module so the details of the garbage bin are shown onto the Android Application of our versatile handset

II. LITERATURE SURVEY

This isn't a unique thought, for the execution of smart waste container; the thought has existed for a long time. After the IOT field discovering its grasp in our lives. This is, anyway a unique arrangement for structuring a smart bin in with ultrasonic sensor and bluetooth module for transmission of information.

The workers of Municipal Corporation regularly demonstrates inconsistency in investigation of dustbins of various zones as it made them to complete a great deal of manual exertion. Henceforth to decrease their manual exertion innovation of IOT based inserted gadgets is utilized to present the shrewd trash accumulation frameworks is that significantly have two units one is ace unit to attempt allotment of work to accessible truck drivers for individual territory and slave unit that keep record of all the rubbish gathering in various zones. Anyway the errand of portion of work and keeping records is finished with the assistance of a gadget furnished with these dustbins. These gadgets by and large comprise of sensors like weight sensor for getting dimension of dustbin, Arduino UNO board for controlling gadget working, and Wi-Fi module with the goal that status of dustbin can be refreshed on government's web server. Further progression is done in the framework where the GSM module is utilized furthermore, to above proposed framework to acquaint a component concurring with which the gadget will send the message to the individual truck drivers when dustbin is full for gathering waste from particular zone just as ultrasonic sensor utilized instead of weight sensor for level recognition [2].

IoT-Based automatic garbage system for productive sustenance squander the executives by Insung Hong, Sunghoi Park, Beomseok Lee, Jaekun Lee, Daebeom Jeong, Sehyun Park. This paper gave the overview working of the IOT based brilliant trash canister and the sustenance the board. It incorporates the data pretty much all the approaches to deal with the gathering of the trash [3].

Autonomous Self-Driving Car using Raspberry Pi Model

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Abstract: Currently, self-driving cars are already being implemented in foreign countries however these cannot be implemented in India. Reason being these existing approaches uses GPS, Sensors. The problem with GPS is that these display roads on the map that might or might not exist and also these roads in India might not be a concrete road. Our idea is to implement a self-driving vehicle which uses a pattern matching technique to overcome the problem. In our project, we planned of using a special pattern which will be deployed on the road. These patterns are a special pattern that is used for detection of the pathway and it detects the type of road. Hence using this technology, we can implement a self-driving car in India. Our prototype would use a modelled car which has a Raspberry pie to process the captured images from the camera and send it remotely on remote computer process it and send back. Similarly, we have various sensors around the car to detect the surrounding obstacles. The camera will be able to capture specific pattern on the road. The pattern is like a pathway for the modelled car, that makes it easier to drive on roads in India. Our prototype uses a hybrid combination of the existing technology as well as the newly implemented methodology of detecting special pattern marked on the road for providing better results.

I. INTRODUCTION

A self-driving car (also known as an autonomous car or a driverless car) has no human input and can sense surrounding without any human interactions. Variety of sensors are combined and are used to identify the pathway, obstacles, pedestrians etc. from the surrounding. Benefit of having a driverless car is having reduced costs due to less wastage of fuel, increased safety, increased mobility, increased customer satisfaction etc.

Safety benefits means we will be having reduced traffic collisions, lower accident rate reducing injuries and related costs such as, insurance. Automated cars could increase traffic flow by having proper routine mobility from source and destination, providing mobility for children, the elderly, disabled, and the poor who cannot operate the non-autonomous vehicles. Travelers could relieve their stress from driving and navigation issues when they go to a unknown city, reduce needs for parking space, lower fuel consumption, reduce crime and facilitate transportation as service like convert existing vehicles such as taxi, train buses to fully automated for the people. Between manually driven vehicles which are referred to as (SAE Level 0) and fully autonomous vehicles referred to as (SAE Level 5) we have wide range of vehicles that are classified in these SAE range. These are known as semi-automated vehicles. These were developed before fully automation could come in existence. These were iterative

approach done for semi automating a car for example some parts get automated. These semi-automated vehicles could take some properties of fully automated vehicles, while still keeping driver in charge of the vehicle they operate. Since the cars rely on a preprogrammed code primarily. The traffic light, sudden pedestrians contact on road, is secondary data they need to process. Hence, they tend travelling slower for processing these extra scenarios. The vehicle sometime might have difficulty when determining certain objects such as light debris, trash, when humans such as police officers are signaling the vehicle to stop, spotting potholes on the road is also sometimes difficult hence avoiding them becomes not possible. Advantages could include higher speed limits with smoother rides since these have better control of vehicle and can view larger distance than a human high and can increase the roadway capacity and minimized(reduce) traffic congestion caused due to decreased need for safety gaps between vehicles travelling at higher speeds.

Currently on highways drivers usually keep between 40 to 50 m (130 to 160 ft) distance away from the car in front of their pathway. These increases in highway capacity sometime are one of the main significant reason for impact in traffic congestion, particularly in the urban areas and more affected in highway congestion in some places. For the authorities to manage the traffic flow usually leads to increase the traffic congestion, with the extra data and predicting the driving behavior of people, we can combine these two details for reducing the traffic congestion the road with less need for traffic police on the roads and even for the road signage. Manually driven vehicles on online surveys are reported to be used only 4-5% time, while being parked and unused for the remaining 95-96% of the time. Autonomous vehicles, on the other hand, be continuously used even after it has travelled from some source to some destination for a given person. This could lead to reduce the need for parking space.

1.1 Problem Statement

Non-autonomous vehicles have been around several years, and based on online survey we have found that ratio of accident happening due to human error is quite high and reason being

- Human beings are not well-suited to travel at high speed. As speed increases, our time and distance perception degrade.
- Fuel wastage caused by human error is quite high.
- Due to human error, traffic congestion is found to increase.

1.2 Existing System

The existing system are being manufactured in foreign countries due to which implementing these systems in our country becomes difficult, problem being

Design of Double-tail Dynamic Latch Comparator for Low Power Application

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Abstract— The Analog to Digital Converter (ADC) is an important part of any signal processing system. It is used to convert the analog signal to digital signal. Power consumption and compactness are the main issues in an ADC. Among the different components of ADC comparator is the one which consumes more power. Dynamic latch comparators are the most suitable comparators for low power applications. A modified Double-tail latch comparator with reduced glitches for low frequency applications is presented in this paper. The total power consumed by the circuit is 296.171 pW at 1.8 V power supply. The simulation is carried out in Cadence Virtuoso environment using 180 nm CMOS technology.

Keywords—ADC; Comparator; Dynamic latch

I. INTRODUCTION

Analog electronics is a field of electronics which deals with the continuous variable signals. These signals are the real time signals which vary continuously with respect to time. As the world is moving towards digitization of data streams, there should be an aid to convert analog signal to digital signal. The advantages of digital signals are immunity to noise, accurate and easily storable. ADC is a device that converts analog information into digital form. The processing of data in terms of digits is easy and yields better quality of signal. ADCs are used in many applications such as signal processing systems, data acquisition systems, data processing systems, communication systems and biomedical applications. Biomedical devices such as ECG, EEG, pacemakers and bio implantable devices need to be highly accurate, compact and must consume low power.

Among different types of ADCs Flash ADC is used in communication systems which requires extremely high speed operation. Successive Approximation Register (SAR) ADC is mainly used in biomedical devices because of its low power dissipation. Sigma-Delta ADCs are used in high resolution systems [2]. Ramp ADCs are used in On-chip signal generators.

SAR ADC is preferred over other ADCs because of its relatively short conversion time and small size. The block diagram of SAR ADC shown in Figure 1. It consists of sample and hold circuit block, comparator, SAR logic and Digital to Analog Converter (DAC). The

input signal (V_{in}) is sampled by the Sample and Hold circuit. The comparator compares sampled signal (V_{SH}) and the reference signal (V_{DAC}). The output of comparator is given to SAR logic and most significant bit is set. DAC converts the digital signal to analog signal and this signal is fed-back to comparator [1]. This process is repeated until all the bits are set.

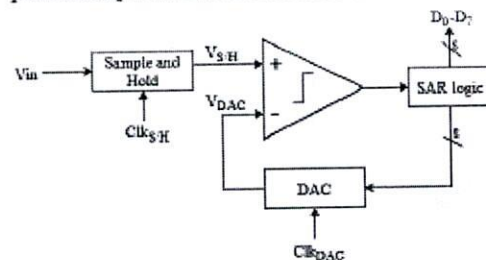


Figure 1. Block diagram of SAR ADC

In SAR ADC, comparator plays an important role. It takes sampled analog signal from Sample and Hold circuit and compares it with reference signal fed by DAC. The output of comparator is given to SAR logic. If the amplitude of analog input signal is greater than the reference signal, comparator gives logic HIGH output. If the amplitude of analog input signal is lesser than the reference signal, it gives out logic LOW. In order to achieve low power dissipation and high speed in SAR ADC, the comparator must be designed such that it has low power dissipation and delay.

II. RELATED WORK

Jomar Carandang et al., [2], proposed an ADC using 90 nm CMOS technology using a supply voltage of 1.2 V. It includes comparison of different types of comparators. Mainly open loop comparator, pre-amplifier preceding a latch comparator, and dynamic comparators. The dynamic comparator is used in biomedical devices.

Vijay Pratap Singh et al., [3], proposed a SAR using Double-tail dynamic latch comparator with reduction of power dissipation and increase the device speed. Heung Jun Jeon et al., [4], a new dynamic latch comparator design with offset voltage compensation is presented. This comparator drives a large capacitive load

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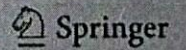
The Analog to Digital Converter (ADC) is an important part of any signal processing system. It is used to convert the analog signal to digital signal. Power consumption and compactness are the main issues in an ADC. Among the different components of ADC comparator is the one which consumes more power. Dynamic latch comparators are the most suitable comparators for low power applications. A modified Double-tail latch

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Dr. Thangaprakash Sengodan
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Abstract

Discrete cosine transform is an algorithm used in image compression and plays significant role in signal and image processing. This paper provides an insight into VLSI-based pipeline architecture of DCT for low power utilization and low hardware circuit. The design will be

Implementation of kernel based DCT with controller unit

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Abstract. Discrete Cosine Transform is an algorithm used in image compression and plays significant role in signal and image processing. This paper provides an insight on VLSI based pipeline architecture of DCT for low power utilization and low hardware circuit. The design will be optimized to provide maximum hardware utilization and minimum power consumption. The results obtained using the algorithm mentioned in this paper are compared with that obtained in [3]. The design is further extended for 24 bit RGB values wherein the pixel value corresponding to each RGB color is represented with its decimal equivalent. The modified 1D-DCT architecture for 8 bit input using Zynq board has slice registers utilization of 0.29%, LUT utilization of 0.66%, operating frequency of 181.5 MHz and power consumption of 0.154W. Hardware utilization and power consumption for 24 bit input is obtained as 0.66% and 0.159W respectively.

Keywords: JPEG, discrete cosine transform (DCT), pipeline architecture, field-programmable gate array (FPGA), image compression, fourier transform.

1 Introduction

DFT is a powerful tool used in digital signal processing technique. Three main uses of DFT tool are - used to calculate frequency spectrum of a given signal, used to find frequency response of a system with the help of impulse response and vice versa. Also works as an intermediate step in various complex processing methods. Thus DFT is popular but requires more computing resources and is complex. As compared to DFT, DCT is a better transform which can be used in various signal processing applications as the difference between the two is DFT utilizes complex exponential functions, while DCT uses only cosine functions (real-valued).

One of the application where DCT is used extensively is in compression of images. Image

compression is a technique that is used to encode the actual image with less number of bits. Minimizing redundancy in an image and efficiently storing its data is the main objective of image compression. Image compression can be classified as - lossless and lossy. In lossless compression techniques, the reconstructed image after compression and the original image are similar. While in lossy compression schemes, data loss occurs and introduces compression artifacts. Image which is reconstructed using lossless technique is degraded with respect to original image and the differences produced by this technique can be considered to be visually lossless.

There have been several developments in lossy compression techniques - JPEG, MPEG and MP3. DCT is used in JPEG encoding where representation of an image is done by 2D array of picture elements called pixels. A grayscale image in JPEG technique is split into smaller blocks of 8x8 pixel block to reduce the complexity of computation. In general, in grayscale and color images pixels are represented using bits.

2 Discrete cosine transform

DCT technique works by separating images into parts corresponding to different frequency. An image/audio input is represented as a block of 8x8 block of pixels. It provides waveform data in terms of weighted sum of cosine terms. It consists of only even parts of DFT.

2-D DCT equation is defined as -

$$H(u, v) = \frac{2}{8} C(f) C(g) \sum_{m=0}^7 \sum_{n=0}^7 X(m, n) \times \cos\left(\frac{(2m+1)i\pi}{16}\right) \cos\left(\frac{(2n+1)j\pi}{16}\right) \quad (1)$$



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EDUCATION**

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BOOK OF ABSTRACTS

MICRO FINANCE SCHEMES OF SKDRDP – A CASE STUDY OF SELECTED MEMBERS OF SHGS

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ABSTRACT

In India, the history of Micro Finance, rural credit, and poverty alleviation are inextricably interwoven. The forces and compulsions that shaped the initiatives in this area are best understood in context of state and banking policy over a time. The Government of India has expressed a strong commitment to Micro Finance as a means of reducing poverty. Micro finance in general is a practice of providing the poor with credit, savings and insurance facilities to set up or to expand Income generating activities relating to agriculture and its allied activities and non-farm sector and thereby is poverty reducing mechanism. Micro finance is needed a very traditional and familiar form of business. Microfinance has turned out to be useful development assistance product. It reached millions of poor people and emerged as a revolution. Shri Kshetra Dharmasthala Rural Development Project (SKDRDP) is a brilliant example of a truly innovative microfinance institution. Founded in 1991 as a charitable trust promoted by Dr. D Veerendra Heggade, SKDRDP concentrates on the empowerment of rural women through self-help groups (SHGs) on the lines of Joint Liability Groups (JLGs), and provides infrastructure and finance through micro credit for the rural people. Presently SKDRDP is actively involved in implementing the financial inclusion plan of the government of India by working as Banking Correspondent and Business Facilitator (BC and BF) in all the areas of its operation. Under the programme SKDRDP is promoting Self Help groups enabling the poor people in the remote villages to access banking facilities at their door steps. SKDRDP is BC and BF to State Bank of India, Union Bank of India, Canara Bank, Corporation bank, IDBI bank, Pragathi Krishna Grameen Bank, Bank of Baroda and Syndicate Bank. The paper is an attempt to understand the stories of SHGs members after taking micro finance service from SKDRDP. The current study helps the researcher to understand the experience of SHGs members relating to SKDRDP Micro Finance Schemes.

Keywords: Self Help Groups, Micro Finance, Business Correspondent, Business Facilitator

PAPER 187

MOBILE APP BASED SHOPPING IN INDIA – A NEW SHOPPING CULTURE AND TREND

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ABSTRACT

Mobile app based shopping in India is evolving as a new shopping culture and trend. Thanks to the increased availability of bandwidth, cheap data plans, and increased awareness about the availability of mobile application in India. This paper is aimed in exploring the gradual change from website based shopping to mobile app based shopping. It also intends to find the contributing factors that led to the development of such change. Recently individuals tend to shop over their phone using various applications. It is noted that the country saw the fastest growth in app downloads among major countries between 2016 and 2018, led by a surge in food delivery and finance. According to statista.com which states that the total app downloads will increase tremendously and expected to reach 258 billion by 2022 these figures includes all categories of the applications. Analysing the different category, gaming app is the first top category of active app when compared with the business category in India. The major players in Indian app market include Seasia Infotech, Signoryle, Sinc, Webgen, Nextwebi, BlazeDream. The first major Indian e-commerce firm to change its business model to fit the changing need as app-only was fashion retailer Myntra. There may be various factors that contributed to the increased internet users and opened up a way for app developers, a notable reason for this internet wave which turned the way of doing business for m commerce is Reliance jio effect in the year 2016. It is also noted that there is increase in the popularity of shopping app both world wide as well as in India.

Keywords: mobile app, app developers, app based shopping culture, e-commerce, downloads.

PAPER 68

INFORMATION TECHNOLOGY IN EDUCATION

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ABSTRACT

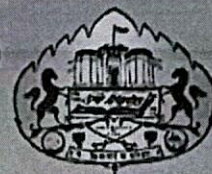
With increasing knowledge and technological progress of society; our country requires learning skills that could help it keep pace with the development of science and technology. Educational systems in a community and consequently education will not be able to separate from other social institutions, national and international interactions widely known in the global village. Education in the twenty-first century is the center from which all changes and developments arise. Information technology in education needs a culture. This culture needs to be learned along with the use of hardware resources. The system needs to be educated to use information technology; otherwise, purchase and transfer of technology and investment will be nothing but wasting resources. Although these technologies are not impartial in any sense they should be used as means for communicating information, in the existing social structures. However since the process of change and transformation is in the nature of human social institutions, the educational system is also prone to some alterations. But the fundamental problem is that what strategies should be adopted so that education systems in developing countries do not only follow developed countries but grow and progress base on their own needs in the path of progress. In this paper, after explanation about the role of information technology and its place in education in underdeveloped countries and Iran, a discussion is presented on how to enter the field of information society and how to use information technologies.

Keywords: Information Technology, Education, Global village, Hardware Resources, Information Society



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A Study on Millennial Perception and Behavior regarding Digital Marketing with special reference to LL Stream LLP, Bengaluru

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Abstract : The Internet is becoming the standard of choice for customers and then ewgeneration to have grown up with Digital Media information. These people are using digital media in their daily life in a way that we could never have measured in even the recent days. In Today's scenario, Gen Y is entering the workplace and spending like never before and it is becoming a mass market for business people and marketers the challenge is to become easy in this new digital world so that we can talk effectively with our clients.

The paper deals with the study on the impact of Digital Marketing towards Millennial people who born age Between 1981 to 1999. The objective of the study is to an alyse how Millennial Use Digital Media, how much and the reason for using digital media. The paper gives about the role of youths in the Digital Industry. It basically explains how important is digital Marketing and helps it's changing the company's marketing strategies.

The reason for conducting this study is to observe various marketing strategies that are used in Digital Media and determine which ones are preferred by Millennial and are effective in influencing their perception and behaviour.

This study has 104 Millennial responses are used on Digital Media daily in their life, more importantly, this study highlights millennial view web site frequently write online product review that people will see Digital Ads rarely for Millennials do not like pop up ads and they like Visuals in websites and actual grabbing attention of products or services.

Keywords : Digital marketing; Internet, Digital media, millennial, Digital industry, Perception

INTRODUCTION

Digital Marketing or E-Marketing refers to the use of marketing techniques through DigitalMedia or Internet like social media, websites, blogs etc. With increasing usage of digital marketing consumers and companies can able to reach their targets easily. It is all about the targeted, measurable, and interactive marketing of end products or services with the use of digital technologies and media to reach and transfer leads into clients and retain them. Millennial has been identified as a driving force behaving digital media and online shopping. Millennial or Gen Y people's unusual attraction both Academic and Managers works. Gen Y people are called as first-generation people who use Digital Media or Internet for the purpose of getting information or to buyproducts.

STATEMENT OF THE PROBLEM

Study on Millennial Perception and Behaviour regarding Digital Marketing/Digital Media with special reference to Stream LL Bengaluru".

NEED FOR THE STUDY

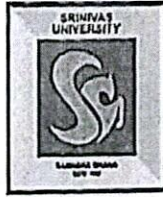
Using digital advertising and marketing or net advertising and marketing is very crucial for any enterprise. These youths will affect deeply on the market because of the regular use of Digital Medias.

LITERATURE REVIEW

KT Smith - Journal of Strategic Marketing, (2011)

This research studies about different marketing strategies which can influence Millennial to buy. With the increasing use of the internet day by day it is not easy to see which strategy of Digital Media that influence Millennial to buy products. For this study, 571 respondents are found. By theend research found that Millennial don't like pop up ads and their attention in website design and highly effective in grabbing their attention. Also, Millennial will rate and review the products.

J Royle, A Laing - International Journal of Information Management, (2014)



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05/10/2019



BOOK OF ABSTRACTS

STUDY ON MILLENNIAL PERCEPTION ON MARKETING INNOVATION

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ABSTRACT

The Internet is becoming the standard of choice for customers and the new generation to have grown up with Digital Media information. These people are using digital media in their daily life in a way that we could never have measured in even the recent days. In Today's scenario, Gen Y is entering the workplace and spending like never before and it is becoming a mass market for business people and marketers the challenge is to become easy in this new digital world so that we can talk effectively with our clients. The paper deals with the study on the impact of Digital Marketing towards Millennial people who born age between 1981 to 1999. The objective of the study is to analyse how Millennial Use Digital Media, how much and the reason for using digital media. The paper gives about the role of youths in the Digital Industry. It basically explains how important is digital Marketing and helps it's changing the company's marketing strategies. The reason for conducting this study is to observe various marketing strategies that are used in Digital Media and determine which ones are preferred by Millennial and are effective in influencing their perception and behaviour. This study has 104 Millennial responses are used on Digital Media daily in their life, more importantly, this study highlights millennial view web site frequently write online product review that people will see Digital Ads rarely for Millennials do not like pop up ads and they like Visuals in websites and actual grabbing attention of products or services.

Keywords: Digital marketing: Internet, Digital media, millennial, Digital industry, Perception.



A Study on M Commerce Application Users – with reference to Mangalore City, Karnataka

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Abstract : Mobile phones are turning as necessity in the day to the day activity of people. They depend on phone starting from alarm while waking up till they go to bed listening music. E commerce has also changed keeping in mind the changes in life style of people. Now a day mobile company are also spread across urban and semi-rural with speed services of 3G and 4G internet were reliance JIO plays a major role in boosting the internet all over the India. E commerce shifted to mobile phones and are known as M commerce. India has seen tremendous growth in the usage of internet since 2016. The number of download are increasing in terms of application this also gives happy sign for the app developers. This paper aims at finding the major applications in India and the opinion of all the shopping app users in Mangalore city. Mangalore city is a coastal city in Karnataka with 4.85 lakhs population. Many of the E commerce company have changed the way of doing their business to suit the small gadgets like mobile phone. This shift gave a new life to app developers in India. There are lot of app developing companies in India. Apps helps in easy access and easy transactions rather than on website. There are lot of study has been done on comparison of app and websites. This paper includes only the M commerce applications.

Keywords : M commerce, E commerce, mobile applications, online shopping.

INTRODUCTION

Commerce is completely referred has the exchange of goods and service between manufacture and consumer. With the invention of new technology commerce has seen a great shift from traditional to advanced form. The old ways of exchanging of goods and service has witnessed massive changes with the passage of time. Mobile phones in India were formally launched in the year august 1995 and today it became a necessary for every industry.

Increasing access of mobile commerce and emerging competition customers are becoming more aware and they have more options to purchase, on the other hand marketer are innovating new things to keep customers in touch. Nowadays companies or institutions from all categories like, e-commerce, hospital, banks, Insurance companies, financial securities, grocery shops, industrial items etc. Smart phones screen is the largest seen screen after laptops and television not only in India but in the world. There are about 650 million mobile phones users in India and just over 300 million of them have a smartphone (according to technology consultancies counterpoint research). It means half of the mobile phone users are not yet using smart phone, so there is large scope for the m-commerce industries in future. Today telecom company have made internet cheaper for a price of 149 rupees per month.

M- commerce (mobile commerce) is the buying and

selling of goods and services through wireless hand held devices such as smartphones and tablets as a form of e-commerce now M- commerce improved business to business and business to customer where it is a platform to exchange goods and services for both the parties and ensure the transaction security with the help of m- commerce customers can purchase goods and set delivery with a fraction of minutes product will be booked and delivered within a day were payment can be done through online app like Paytm, phonePe, Mastercard, Airtel payments bank, google pay, amazon pay etc.

OBJECTIVES

1. To find the major M-commerce applications.
2. To study the opinion of smart phone users regarding online purchases through application.

THEORETICAL BACKGROUND

(Aparna Chatterjee) As per his research, statistically there is no difference between age and preferred factors, even there is no difference between gender and no significant association found between educational and preferred factors. (IMS business school presents doctoral colloquium-2017 customer preference of mobile apps in W.B: demographic study).

(Gagandeep kaur) As per his research, were technology is advancing from day to day and peoples are more likely

PAPER 187

MOBILE APP BASED SHOPPING IN INDIA – A NEW SHOPPING CULTURE AND TREND

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ABSTRACT

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Keywords: mobile app, app developers, app based shopping culture, e-commerce, downloads.

PAPER 150

DIGITAL BANKING – “AS A TIME SAVER TOOL”

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ABSTRACT

Digital banking or digitalisation is moving online of all the traditional banking activities and transactions that initially were only available to customers under the bank roof. This includes activities like money deposits, withdrawals and Transfers (E-Payments).It is a part of the broader context for the move to online baking, where banking services are delivered over the internet. The shift from traditional to digital banking has been gradual and remains on-going. In the old days, banking used to be a time-consuming business, where the basic transactions like cash deposits and withdrawals were taking long time, the customers had to stand in a queue to avail the facility. Everything was done under the token system. All that thankfully, is a thing of the past now after transition all banking activities became Hassel free. Moreover, going digital allows you the perfect opportunity to enjoy paperless banking experience, where you no longer need to keep track of your transactions or banking history through physical documents. With Digital Banking, you can transact with higher speed, ease and convenience. It served as “Time saver tool” for customers as well as for employees. Most banks in the country offer Digital Banking Services today, and these have become an integral part offer E-Banking services today, the meaning true Digitalisation is transformation. Digital Banking has drastically changed the way banks and customers interact with one another. And in a booming technological and financial economy like India, more and more people are being connected to Digital Banking Platforms with each passing day.

Key Words: Banking, E-Payment, Digitalisation, E- Banking, Customers, Employees.

MICRO FINANCE SCHEMES OF SKDRDP – A CASE STUDY OF SELECTED MEMBERS OF SHGS

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ABSTRACT

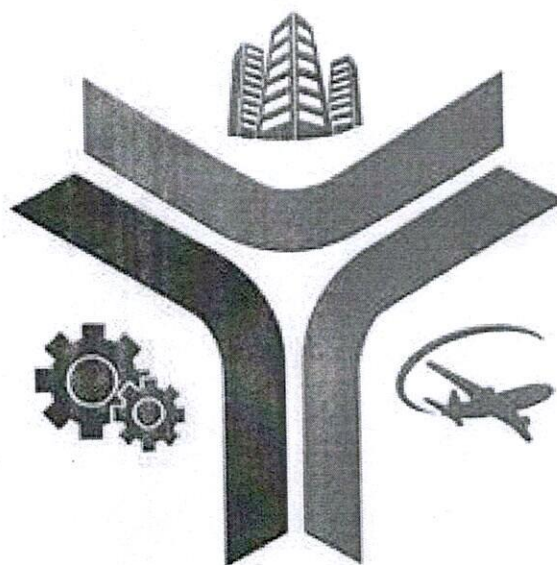
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Influence of machining cutting speed on cutting force, tool flank wear on PVD inserts by turning of Ti-6Al-4V alloy

M. J. Raghavendra; C. G. Ramachandra; T. R. Srinivas; M. Prashanth Pai

AIP Conf. Proc. 2204, 040024 (2020) <https://doi.org/10.1063/1.5141597>

Abstract ▾

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The wear properties of ceramic B₄C/Al matrix composite at elevated temperature under dry sliding

Rajesh Gandasi Lakshmikantha; Soundarya Nanjundaswamy; Thilak Kumar Jayaprakash; Rohan Kundwada Ravindra; Virupaxi Auradi

AIP Conf. Proc. 2204, 040025 (2020) <https://doi.org/10.1063/1.5141598>

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Implementation of Taguchi method and ANNOVA for optimization of process parameter in improving the surface roughness of the products in injection moulding operation

Satyam Kumar; Gaurav Kumar Ray; Deep Maharjan; Dadapeer Adoni; P. Balachandra Shetty; Shiv Pratap Singh Yadav

AIP Conf. Proc. 2204, 040026 (2020) <https://doi.org/10.1063/1.5141599>

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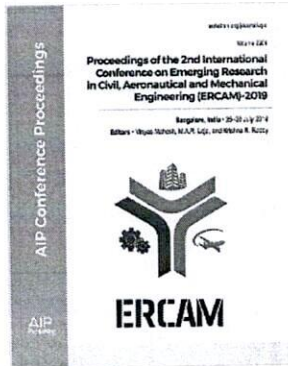
Design, fabrication and analysis of pen mold for injection molding machine

Rishab Kumar; Robin Singh; Ripu Singh; Sachidanand Yadav; P. Balachndra Shetty; Shiv Pratap Singh Yadav

AIP Conf. Proc. 2204, 040027 (2020) <https://doi.org/10.1063/1.5141600>

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RESEARCH ARTICLE | JANUARY 10 2020

Influence of machining cutting speed on cutting force, tool flank wear on PVD inserts by turning of Ti-6Al-4V alloy

M. J. Raghavendra; C. G. Ramachandra; T. R. Srinivas; M. Prashanth Pai

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Tool wear is one in all the foremost necessary issues in cutting Ti alloys thanks to the high-cutting temperature and robust adhesion. Recently, the high-speed machining method has become a subject of nice interest for Ti alloys, not solely as a result of it will increase material removal rates, however; additionally as a result of it will completely influence the properties of the finished work piece. However, the method could lead to the rise of cutting force and cutting temperature which can accelerate tool wear. In this paper, turning experiments of Ti-6Al-4V alloy were conducted at high speeds using both uncoated and coated carbide tools. The

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JOURNAL ARTICLE | OPEN ACCESS

Biosynthesis and characterization of silver nanoparticles from *Penicillium notatum* and their application to improve efficiency of antibiotics

Shareefraza J. Ukkund, M. J. Raghavendra, Yashawantha K. Marigowda, N. Abhinaya and Prasad Puthyillam

2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **577** 012002 <https://doi.org/10.1088/1757-899X/577/1/012002>

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Antimicrobial coating of fabric by biosynthesized silver nanoparticles from Panchakavya

Shareefraza J. Ukkund, D. P. Adarsh, Haritha Nair, Jyothi Manasa, Swathi Krishna, Rashika Naveen, Sanjana Jacob, Anusha B. Shettar, Aliya F.

Badiuddin and Abhinaya Nellerichale

2021 *Nano Ex.* **2** 010033 <https://doi.org/10.1088/2632-959X/abeb8e>

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Synthesis and characterization of Zn doped WO₃ nanoparticles: photocatalytic, antifungal and antibacterial activities evaluation

M. Arshad, S. Ehtisham-ul-Haque, M. Bilal, N. Ahmad, A. Ahmad, M. Abbas, J. Nisar, M. I. Khan, A. Nazir, A. Ghaffar + Show full author list

2020 *Mater. Res. Express* **7** 015407 <https://doi.org/10.1088/2053-1591/ab6380>

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Biosynthesis and characterization of silver nanoparticles from *Penicillium notatum* and their application to improve efficiency of antibiotics

Shareefraza J. Ukkund^{1,3}, M. J. Raghavendra², Yashawantha K. Marigowda², N. Abhinaya¹ and Prasad Puthyillam^{1,3}

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+ Article and author information

Abstract

Nanomaterials can be synthesized by physical, chemical and biological methods. The biological method of synthesis of silver nanoparticles have more advantage and gives high purity. Silver nanoparticles are having antibacterial properties and can be synthesized by any microbes and plants with minimal effort. The present study includes the synthesis of silver nanoparticles from penicillium
own producer of penicillium antibiotic. The produced nanoparticles of silver

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Abstract

References

MICRO FINANCE SCHEMES OF SKDRDP – A CASE STUDY OF SELECTED MEMBERS OF SHGS

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ABSTRACT

In India, the history of Micro Finance, rural credit, and poverty alleviation are inextricably interwoven. The forces and compulsions that shaped the initiatives in this area are best understood in context of state and banking policy over a time. The Government of India has expressed a strong commitment to Micro Finance as a means of reducing poverty. Micro finance in general is a practice of providing the poor with credit, savings and insurance facilities to set up or to expand Income generating activities relating to agriculture and its allied activities and non-farm sector and thereby is poverty reducing mechanism. Micro finance is needed a very traditional and familiar form of business. Microfinance has turned out to be useful development assistance product. It reached millions of poor people and emerged as a revolution. Shri Kshetra Dharmasthala Rural Development Project (SKDRDP) is a brilliant example of a truly innovative microfinance institution. Founded in 1991 as a charitable trust promoted by Dr. D Veerendra Heggade, SKDRDP concentrates on the empowerment of rural women through self-help groups (SHGs) on the lines of Joint Liability Groups (JLGs), and provides infrastructure and finance through micro credit for the rural people. Presently SKDRDP is actively involved in implementing the financial inclusion plan of the government of India by working as Banking Correspondent and Business Facilitator (BC and BF) in all the areas of its operation. Under the programme SKDRDP is promoting Self Help groups enabling the poor people in the remote villages to access banking facilities at their door steps. SKDRDP is BC and BF to State Bank of India, Union Bank of India, Canara Bank, Corporation bank, IDBI bank, Pragathi Krishna Grameen Bank, Bank of Baroda and Syndicate Bank. The paper is an attempt to understand the stories of SHGs members after taking micro finance service from SKDRDP. The current study helps the researcher to understand the experience of SHGs members relating to SKDRDP Micro Finance Schemes.

Keywords: Self Help Groups, Micro Finance, Business Correspondent, Business Facilitator

PAPER 187

MOBILE APP BASED SHOPPING IN INDIA – A NEW SHOPPING CULTURE AND TREND

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ABSTRACT

Mobile app based shopping in India is evolving as a new shopping culture and trend. Thanks to the increased availability of bandwidth, cheap data plans, and increased awareness about the availability of mobile application in India. This paper is aimed in exploring the gradual change from website based shopping to mobile app based shopping. It also intends to find the contributing factors that led to the development of such change. Recently individuals tend to shop over their phone using various applications. It is noted that the country saw the fastest growth in app downloads among major countries between 2016 and 2018, led by a surge in food delivery and finance. According to statista.com which states that the total app downloads will increase tremendously and expected to reach 258 billion by 2022 these figures includes all categories of the applications. Analysing the different category, gaming app is the first top category of active app when compared with the business category in India. The major players in Indian app market include Seasia Infotech, Signoryle, Sine, Webgen, Nextwebi, BlazeDream. The first major Indian e-commerce firm to change its business model to fit the changing need as app-only was fashion retailer Myntra. There may be various factors that contributed to the increased internet users and opened up a way for app developers, a notable reason for this internet wave which turned the way of doing business for m-commerce is Reliance jio effect in the year 2016. It is also noted that there is increase in the popularity of shopping app both world wide as well as in India.

Keywords: mobile app, app developers, app based shopping culture, e-commerce, downloads.

PRODUCTION CULTURE IN MICRO AND SMALL INDUSTRIES AND THE USE OF COMPUTER-ASSISTED KNOWLEDGE MANAGEMENT IN MANUFACTURING PROCESSES

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ABSTRACT

This article outlined the culture of manufacturing in micro and small sectors. Knowing the answers from the manufacturing culture gathered from 20 manufacturing sectors through study with 87 questionnaires. With the assistance of Agile manufacturing enablers, all the questionnaires prepared. The sample companies are customer-based manufacturers of identical products with distinct shapes and sizes. It has been observed from the study that micro-and small-scale sectors do not work with a single production methodology and no strategic method has been adopted. Most sectors face skilled labor shortages and market requirements shift. The main reason for this issue is bad data storage and reuse and bad adoption / non-adoption of the method of knowledge management in micro and small sectors.

Keywords: Agile Manufacturing, Data storage, Knowledge management

Naveen Kumar J. R. has completed B.E. in Electronics and Communication and M.Tech. in Nanotechnology. Presently working as Assistant Professor at Department of Nano Technology, SIT, Srinivas Group of Institutions, Mangaluru, Karnataka, India. His research interests include Nanomaterials, Gas sensors, Thin-films & EMI Shielding.

Naveen Kumar, Prasad , Shrinivas Mayya

Methods, working & Applications



Technology

K. S. Lokesh / P. Prasad / D. Shrinivasa Mayya

Nano Tribology and Fracture Mechanics

GRIN

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CHAPTER- 1

NANOTECHNOLOGY IN MECHANICAL ENGINEERING

1.1 Introduction

Nanotechnology is science, engineering and technology conducted at the nano scale, which is about 1 to 100 nm where nano denotes the scale range of 10^{-9} and nanotechnology refers the properties of atoms and molecules measuring thoroughly 0.1 to 1000 nm. Nanotechnology is highly interdisciplinary as a field, and it requires knowledge drawn from a variety of scientific and engineering areas. Nanotechnology has become an all-embracing term, which means different things to different people. Nanotechnology is interface technologies that include many different science and applications area. Nanotechnology falls into this category and offers fundamentally new capabilities to architect a board array of the novel materials, composites and structure on a molecular scale. Here discusses on some of the applications for nanotechnology and shows a few cases of them. That is believed to have the highest probability of success in competitive industry. The nanotechnology that are economically promising for the future include those that have applications in information technology, electronics, building materials, household appliances, textiles, cosmetics, food, environmental technologies, energy technologies and medicine etc.,

Nanotechnology deals with studies of phenomena and manipulation with elements of matter at the atomic, molecular and macromolecular level (range from 1 to 100nm), where the properties of matter are significantly different from their properties at larger scales of dimensions. There are two main types of approaches to nanotechnology: the first approach is Top-down and another one is Bottom-up approach. The Top-down approach involves taking layer structures that are either reduced down size until they reach the nano-scale or

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Nano Tribology and Fracture Mechanics



K. S. Lokesh, P. Prasad, D. Shrinivasa Mayya

GRIN Verlag, 14 Jan 2019 - Technology & Engineering - 69 pages

Document from the year 2018 in the subject Engineering - General, grade: A, Srinivas School of Engineering (Srinivas Institute of Technology), course: Engineering, language: English, abstract: The main aim of this text book is to understand the applications of nano technology in mechanical engineering & the mechanics of nanomaterials and also to understand the concept of nano tribology & fracture mechanics and advancement in nano materials. At the end of the study student can able to understand: - Applications of nano materials in mechanical engineering; - Mechanics of nano materials; - Defects in nano structures; - Failure modes; - Mechanical behaviors

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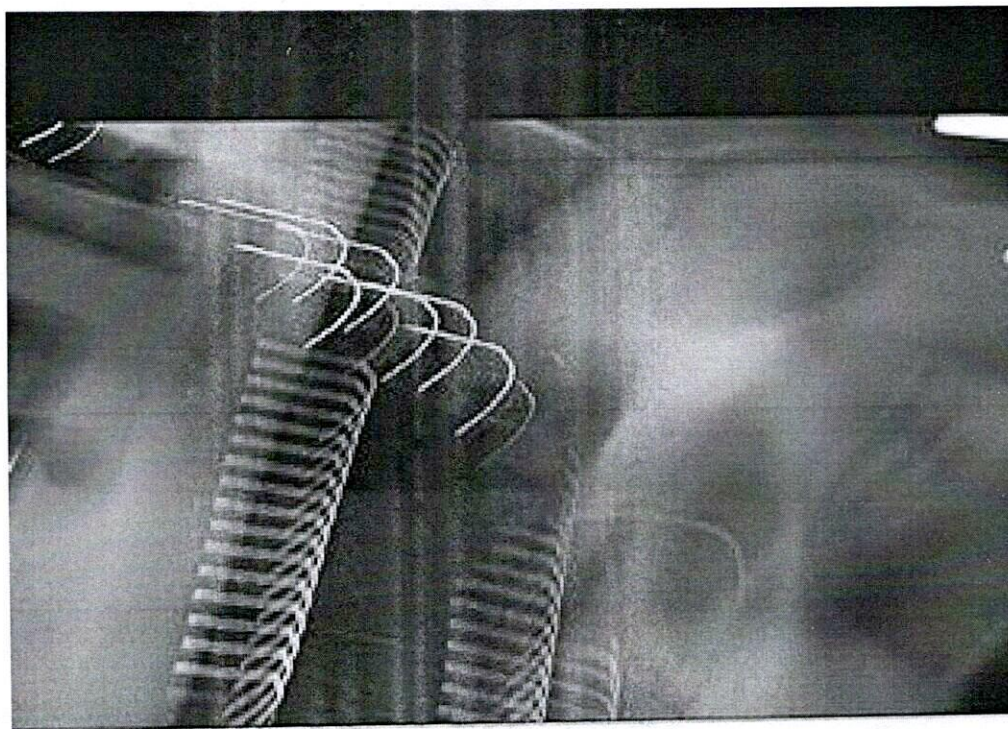
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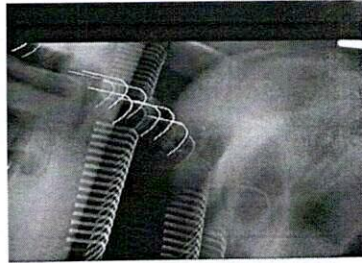


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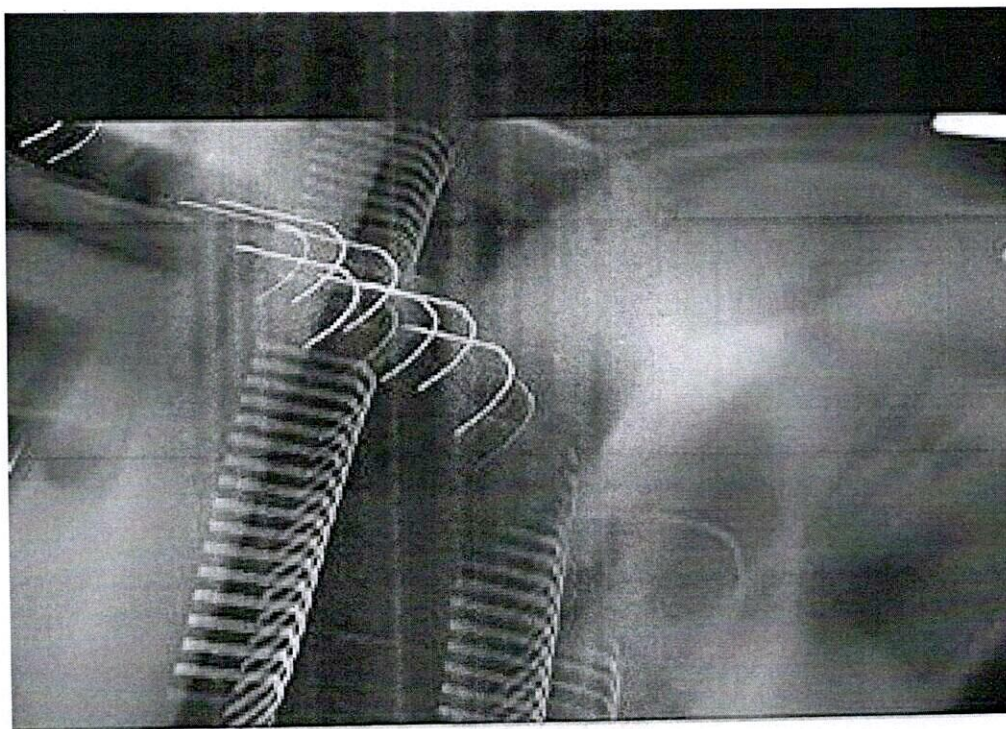


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Lokesh Kanchugaranahally Sriramamurthy
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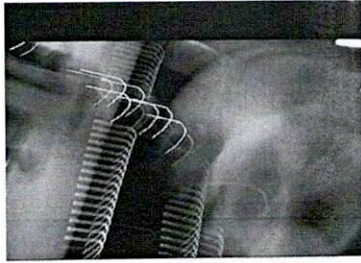


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Analysis of Combination of Swing Wing with Canard and Tail used in Fighter Aircraft

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Swathi P Shetty, UG Scholar, Department of Aeronautical Engineering, Srinivas Institute of Technology, Valachil, Mangaluru, Karnataka

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Jagadeesh, Assistant Professor, Department of Mechanical & Aeronautical Engineering, Srinivas Institute of Technology, Valachil, Mangaluru, and Karnataka

Abstract:-

The present work discloses the new design of a fighter aircraft. Better performance of a fighter in the combat as well in its ground activities is the main vision of our work. It is concentrating on the aircraft short distance take off and landing, stalling controlling, as well as different maneuverings of the aircraft. Many fighter aircraft are having its own working parameters and configurations. Every aircraft shown its own characteristics in flight like maneuverings, stalling etc. The major problem of them is prohibiting some of these characteristics in some angle of attack. So to control we have implemented some modifications. To achieve all these characteristics, we have selected the combination of swing wing with canard and tail configuration. By using this technology we can increase the flight ability to its maximum. So all the characteristics are in the control as we have designed.

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Thermal Degradation Study on Hybrid Fibres Binded with Thermoset Plastic Used in Aerospace Industry

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Abstract

Composites are extensively used in aircrafts for their best strength to weight ratio. They are anisotropic, i.e. can be designed for best strength in a particular direction. Adding filler material to the composites enhances its properties. Carbon NANO Tubes is one such filler material that has low moisture and oil absorption, low volatile content and high impact resistance which could be a potential combination of composite material, for use in interiors of the aircraft. In this work, Carbon NANO Tubes in different composition (0%, 1%, 2% and 3%) was added to the E-glass/Epoxy composite and the resulting composite was tested to evaluate the mechanical properties and thermal ageing.

Thermal ageing was done for each specimen before impact test for 72 hours. For the temperature range selected was 40°C, the matrix was hardened due to the chilled effects (a thermo-set resin) and hence the properties increased for heating cycle for all the samples. Fibre reinforced composites offer many advantages over conventional structural materials. They have high strength and modulus-to-weight ratios, are fatigue and corrosion resistant and require low maintenance. However, because of their unknown long term properties when exposed to a combination of in-service loads and environments, they are not used in primary load bearing structures. The effect of exposure to heat, moisture, hydrocarbons, fatigue and static loads and more importantly a combination of these parameters may degrade the material's stiffness and strength. The lack of long term data for fibre reinforced composites has led for an accelerated ageing methodology that will predict the effect of such a degradation that might have on the residual properties. Hence thermal ageing is performed before testing. Thermal ageing is performed at various temperatures and room temperature. The specimens are kept in the freezer for cooling cycles at the desired temperature and in hot air oven for heating cycles for 72hrs. This results in change in micro-structure, the structural degradation depending on the temperature and the ageing time.

1. Introduction

A composite material can be defined as amalgamation of two or more materials that results in better properties than those of the individual components used alone. In contrast to metallic alloys, each material retains its separate chemical, physical, and mechanical properties. Composites are kind of materials which are created by integrating dissimilar materials of having different characteristics which are united macroscopically to get desired characteristics of new materials. The main objective of combining alternative features of different materials is to get high strength, stiffness, toughness and also to enhance good wear resistance properties (tailoring the properties). In this work, choice of e-glass fibre/epoxy composite with carbon nano tube as an additive is obvious for the following reasons. For best strength to weight ratio and impact resistance, hybrid composites made of Epoxy, E-glass fibres and carbon nano tubes can be used. Also, the addition of carbon nano tube to the E-Glass fibre/Epoxy composites increases the bending properties of the E-Glass fibre composite. Carbon nano tubes can also be used for high strength, stiffness and can be used in aerospace, automobile, marine and lightweight article applications.

E-Glass fibres, especially produced in a bi-directional form, offer sufficient resistance to an object during impact with low material cost as compared with carbon fibres, which make them more attractive for many structural applications. Among all different

kinds of thermosets, epoxies are well-known for their outstanding mechanical properties such as resistance to micro-cracking, chemical inertness, good thermal and dimension stabilities. In current aircraft and automotive composite components, epoxies are mostly used.

2. Literature Survey

An exhaustive literature survey made on epoxy/e-glass composites shows lot of research and investigations have been done especially on fabrication and subsequent characterization in various engineering applications. In this chapter, some selected literatures are mentioned and their outcomes are discussed. N. Guermazi, N. Haddar, K. Elleuch, H.F. Ayedi conducted investigations on the fabrication and the characterization of glass/epoxy, carbon/epoxy and hybrid composites used in the reinforcement and the repair of aeronautic structures [1]. Mehmet Aktas, Cesim Atas, Bu lent Murat icen, Ramazan Karakuzu Investigated the impact response of unidirectional e-glass epoxy laminates by considering energy profile diagrams and associated load-deflection curves [2]. Sivasubramanian S a, V.K.Bupesh Rajab, Manikandanc investigated impact characterization of Epoxy LY556/E-Glass Fibre/ Nano Clay Hybrid Nano Composite materials [3]. Amin Salehi-Khojin, Reza Bashirzadeh, Mohammad Mahinfalah, and Reza Nakhaei-Jazar investigated the role of temperature on impact properties of Kevlar/fiber glass composite laminates [4]. Cesim Atas, Akar Dogan, studied the effect of thermal ageing on low velocity impact response of E-glass/epoxy composites.

Biosynthesis and characterization of silver nanoparticles from *Penicillium notatum* and their application to improve efficiency of antibiotics

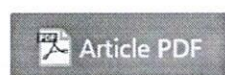
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Abstract

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PRODUCTION CULTURE IN MICRO AND SMALL INDUSTRIES AND THE USE OF COMPUTER-ASSISTED KNOWLEDGE MANAGEMENT IN MANUFACTURING PROCESSES

Sathyaprakash A^{1,2,a)}, Shrinivasa Mayya D^{3,4, b)}

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ABSTRACT

This article outlined the culture of manufacturing in micro and small sectors. Knowing the answers from the manufacturing culture gathered from 20 manufacturing sectors through study with 87 questionnaires. With the assistance of Agile manufacturing enablers, all the questionnaires prepared. The sample companies are customer-based manufacturers of identical products with distinct shapes and sizes. It has been observed from the study that micro-and small-scale sectors do not work with a single production methodology and no strategic method has been adopted. Most sectors face skilled labor shortages and market requirements shift. The main reason for this issue is bad data storage and reuse and bad adoption / non-adoption of the method of knowledge management in micro and small sectors.

Keywords: Agile Manufacturing, Data storage, Knowledge management

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BIO FUEL AS A SURROGATE FUEL TO MINERAL OIL-A REVIEW

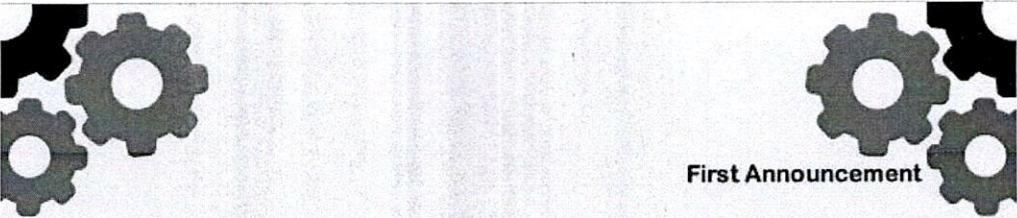
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Abstract

Due to the increase in global energy demands and the necessity of alternate clean fuels and energy, the need for bio fuels have drastically increased. Diminishing fuels takes place in the outgoing gases from internal combustion engines, considerable attention has been made to bio fuel manufacturing into mineral oil. Biodiesel is an ecofriendly, surrogate diesel fuel prepared from domicile reusable resources i.e. made from vegetable oils. Various chemical modification methods to produce biodiesel namely esterification, hydrogenation etc are experimented from researchers. Methods mainly changes on the type of variables such as fatty-acid mixture and the free fatty-acid content of the mineral oil. Other variables include reaction temperature, ratio of alcohol to vegetable oil, catalyst, mixing intensity, purity of reactants. Nowadays lot of researches are made to focus more on the production of biodiesel using edible oils but the use of non-edible oil for biodiesel production has contributed because the cost for its production is mere less. Biodiesel As a fuel, researchers shows an improvement in the performance of engine and less output in emissive characteristics.



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Tribological behavior of AISI 1055 under Formulated Vegetable Oils for Automotive applications

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Abstract

In the present study, three vegetable oils, Pongamia, Neem and Castor oils are used to formulate biolubricant base oils for automotive applications. Basically, the raw oils are esterified with methanol to obtain their methyl esters. These esters are further transesterified with Trimethylolpropane to obtain Pongamia Trimethylolpropane ester (PTMPE), Neem Trimethylolpropane ester (NTMPE) and Castor Trimethylolpropane ester (CTMPE). Tribological studies are made on these esters using pin-on-disc tribo machine for the material AISI 1055 carbon steel. Tribological behaviors of the material under formulated vegetable oil lubrication are recorded. The results under modified oils are compared with results under mineral oil. Further, the worn surface images of the pins are captured by using scanning electron microscope (SEM). Results reveal that, the friction and wear is low under all modified vegetable oils mode of lubrication compared to petroleum oil. The Castor Trimethylolpropane ester (CTMPE) exhibits about 40 % and 12 % drop in coefficient of friction (COF) and wear respectively compared to mineral oil (SAE20W40) lubrication. These results are substantiated by the surface analysis using SEM images.

Keywords- Vegetable oil; Trimethylolpropane; Esterification; Biolubricant; Friction; Wear

1. Introduction

Petroleum based lubricants are the major cause of environmental pollution, because of their poor biodegradability and toxic nature. Due to higher environmental concerns there is a need of some alternate lubricants from vegetable oils for industrial and automotive applications. Plant oils are chemically triglycerides of fatty acids. The existence of long fatty acid chains and polar structure in the vegetable oil structure, produce a stable film between two surfaces results in reduced friction and wear and are capable as both boundary film and fluid film lubricants [1].

Study on Performance and Emission Characteristics of Four stroke Gasoline engine under Formulated Neem oil as base lubricant

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Abstract

In this paper, an attempt is made to utilize the neem oil as a lubricant to operate a gasoline engine. Basically, the raw oil is modified twice through esterification method and made into Neem Trimethylolpropane ester (NTMPE). A vertical single cylinder air cooled four stroke gasoline engine developing 1.3 kW at 4200 rpm is used to conduct the experiments. The engine is lubricated under various blends of NTMPE with mineral oil. The performance and emission study is made under these blends of lubrication. The obtained results are compared with the results under mineral oil mode of lubrication.

The results show that 10 % drop in fuel consumption and marginal improvement mechanical efficiency is noticed when the engine is operated under NTMPE20-MO80 mode of lubrication. About 9 % increase in thermal efficiency is observed under NTMPE20-MO80 blend. The engine emits 10 % lower carbon monoxide and 8 % drop in unburnt hydrocarbon, under all blends of bio lubricants and mineral oil. Particularly, lowest carbon monoxide and unburnt hydrocarbon is observed when the engine is operated under NTMPE20 – MO80 mode of lubrication.

Keywords: Neem oil, Trimethylolpropane, Transesterification, Biohubricant

1. Introduction

Biohubricant oils are perceived as alternatives to mineral oils because they possess certain natural technical properties and they are biodegradable. Compared with mineral oils, vegetable oil-based biohubricants generally exhibit high hubricity, high viscosity index (VI), high flash point, and low evaporative losses, low toxicity, improved user safety [1,2]. However, they have certain disadvantages, such as poor oxidative and thermal stability [3, 4]. High oleic varieties of vegetable oils are considered to be potential candidates to replace conventional mineral oil-based hubricating oils and synthetic esters because of their greater oxidative stability [5, 6]. Many literatures revealed that technical solutions such as chemical modification, adding additives were suggested to overcome the poor thermo oxidative stability and low temperature fluidity of vegetable oils [7, 8].

Josiah McNutt et. al [9], reviewed the most recent advancements in the synthesis of biohubricants from vegetable oils through chemical modification methods such as esterification/transesterification, estolide formation, and epoxidation of vegetable oils. These methods have been found to significantly increase the physical properties of the base vegetable

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Tribological behavior of AISI 1055 under Formulated Vegetable Oils for Automotive applications

Girish A R¹, Shashidhara Y M², Jerome Anthony³

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²Professor, Malnad College of Engineering - 573202 (INDIA)

Email: girishar.4691@gmail.com¹, shashi.vms@gmail.com², jeromeanthony07@gmail.com

Abstract

In the present study, three vegetable oils, Pongamia, Neem and Castor oils are used to formulate biolubricant base oils for automotive applications. Basically, the raw oils are esterified with methanol to obtain their methyl esters. These esters are further transesterified with Trimethylolpropane to obtain Pongamia Trimethylolpropane ester (PTMPE), Neem Trimethylolpropane ester (NTMPE) and Castor Trimethylolpropane ester (CTMPE). Tribological studies are made on these esters using pin-on-disc tribo machine for the material AISI 1055 carbon steel. Tribological behaviors of the material under formulated vegetable oil lubrication are recorded. The results under modified oils are compared with results under mineral oil. Further, the worn surface images of the pins are captured by using scanning electron microscope (SEM). Results reveal that, the friction and wear is low under all modified vegetable oils mode of lubrication compared to petroleum oil. The Castor Trimethylolpropane ester (CTMPE) exhibits about 40 % and 12 % drop in coefficient of friction (COF) and wear respectively compared to mineral oil (SAE20W40) lubrication. These results are substantiated by the surface analysis using SEM images.

Keywords- Vegetable oil; Trimethylolpropane; Esterification; Biolubricant; Friction; Wear

1. Introduction

Petroleum based lubricants are the major cause of environmental pollution, because of their poor biodegradability and toxic nature. Due to higher environmental concerns there is a need of some alternate lubricants from vegetable oils for industrial and automotive applications. Plant oils are chemically triglycerides of fatty acids. The existence of long fatty acid chains and polar structure in the vegetable oil structure, produce a stable film between two surfaces results in reduced friction and wear and are capable as both boundary film and fluid film lubricants [1].

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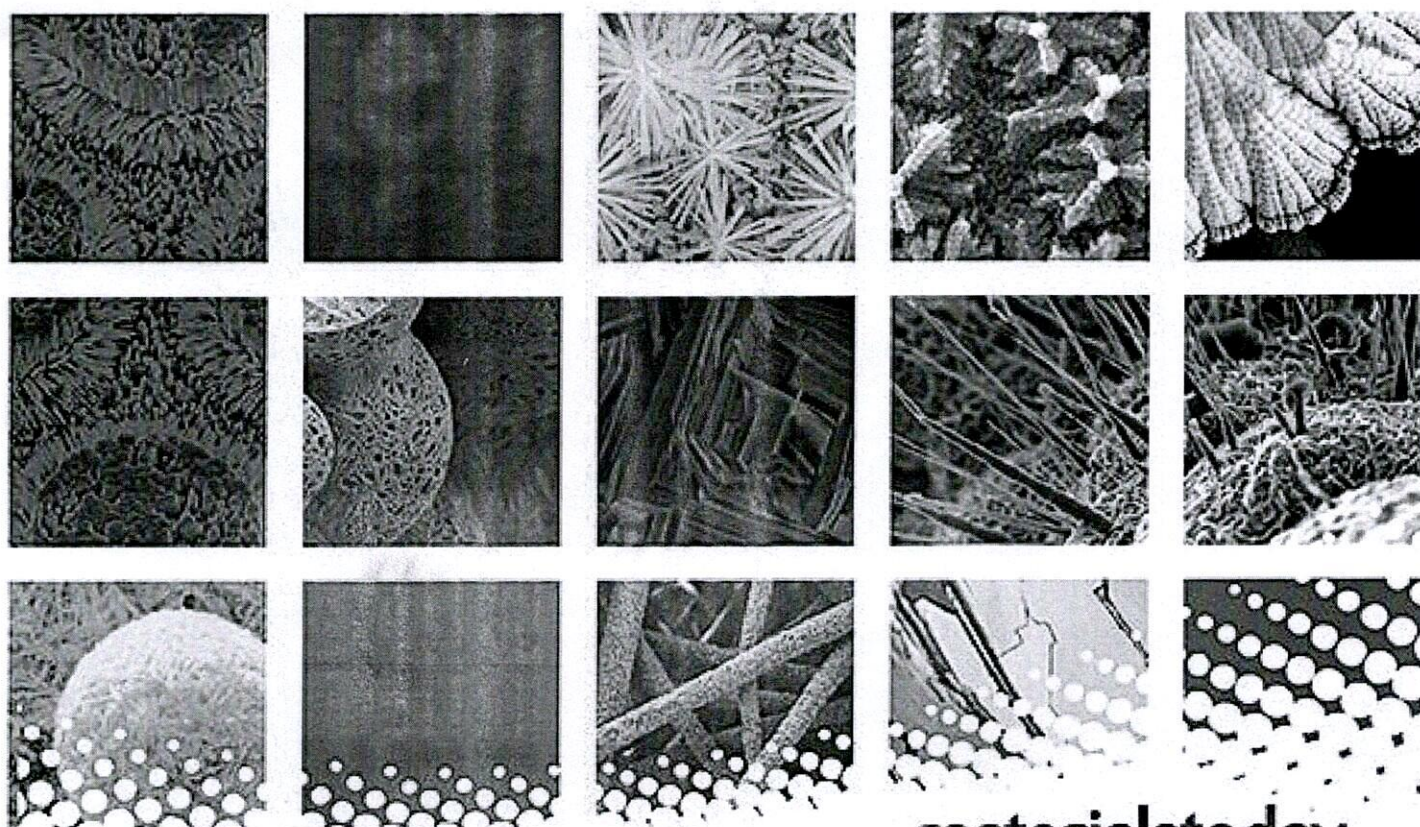
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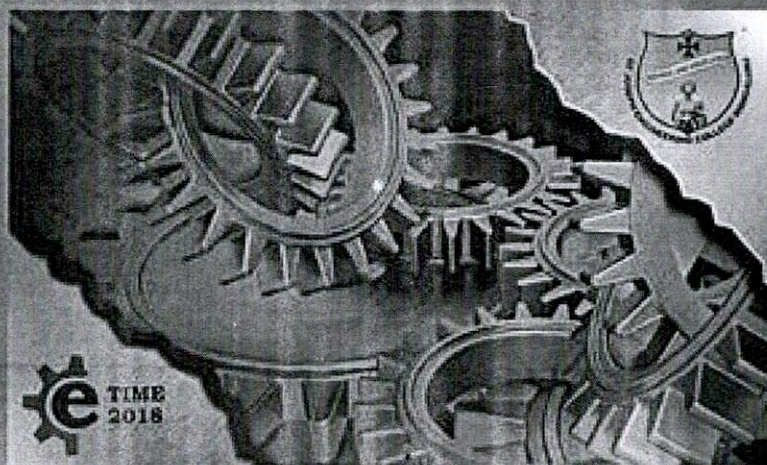
In this work, we relate the influence of annealing temperature on crystalline size, film roughness, optical, morphological and electrical properties of ZnO thin films prepared by

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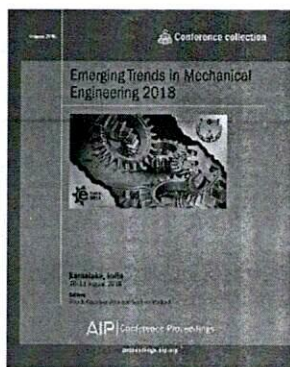
... and Analysis of Experiments ", in John Wiley & Sons, Inc. , ISBN 0-471- 86812-4 , 1984 . **First Pass Yield Improvement in Fuel Injection Pump Delivery Valve Assembly** Raghavendra Pai1, a, Vinayaka Kannantha2, Naveen Kumar Jagadapura Ramegowda3, c), and Lokesh Kanchugaranahally Sriramamurthy2, d...

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
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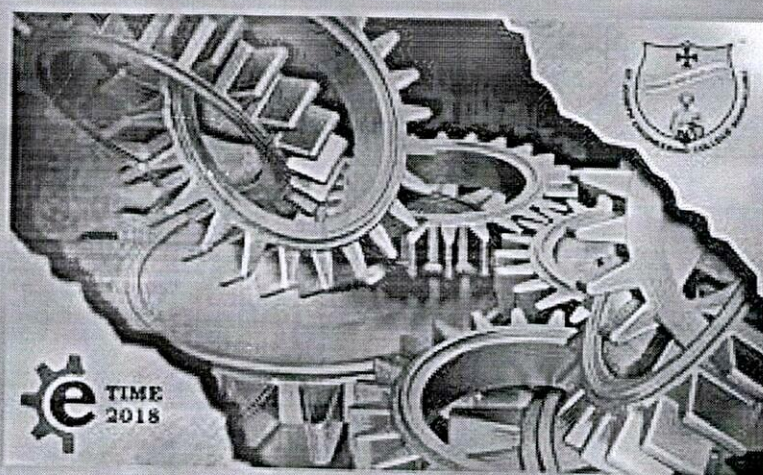
This work was carried out in an automotive sector, for single cylinder fuel injection pump (pf-33) delivery valve assembly line. Our work aims to focus on internal quality improvement to reduce rejection in a delivery Valve assembly line, which was having around 10.5% scrap. A substantial improvement of around 60% we estimated after the completion of work. The present work also signifies the data regarding the two significant rejections were taken for study as per Pareto Analysis from three months of rejection data. Observed that a significant problem with Delivery Valve (DV) through flow measurement is because the machine to test the through flow did not attain standard specification limits, and the method of assembly of parts needs to be improved as it caused misalignment. Some via simple techniques like the “seven basic quality control (QC) tools” and also why/Why analysis provided a valuable and cost effective way to solve the problem. Of these various

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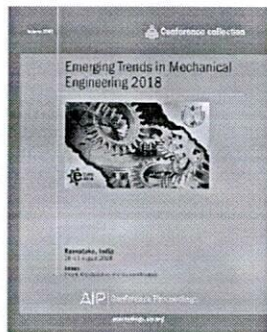
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Nanomaterials can be synthesized by physical, chemical and biological methods. The biological method of synthesis of silver nanoparticles have more advantage and gives high purity. Silver nanoparticles are having antibacterial properties and can be synthesized by any microbes and plants with minimal effort. The present study includes the synthesis of silver nanoparticles from penicillium

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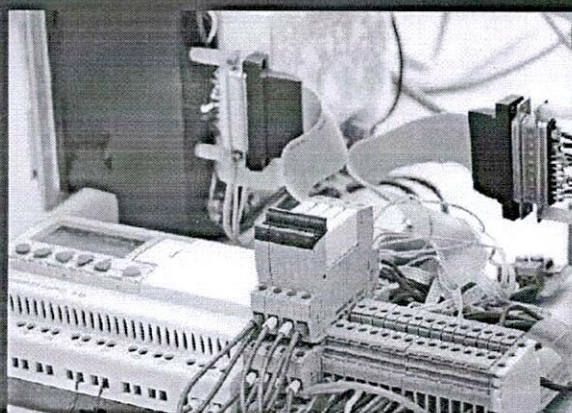


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J. R. Naveen Kumar
P. Prasad
D. Shrinivas Mayya

Naveen Kumar J. R. has completed B.E. in Electronics and Communication and M.Tech. in Nanotechnology. Presently working as Assistant Professor at Department of Nano Technology, SIT, Srinivas Group of Institutions, Mangaluru, Karnataka, India. His research interests include Nanomaterials, Gas sensors, Thin-films & EMI Shielding.

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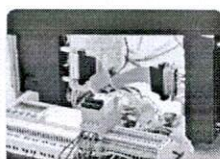
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CHAPTER 1: QUANTUM MECHANICS

1.1: INTRODUCTION

Quantum mechanics is a physical science dealing with the behaviour of matter and energy on the scale of atoms and subatomic particles/waves. It also forms the basis for the contemporary understanding of how huge objects such as stars and galaxies, and cosmological events such as the Big Bang, can be analyzed and explained.

Quantum mechanics is the foundation of several related disciplines including nanotechnology, condensed matter physics, quantum chemistry, structural biology, particle physics, and electronics. The term "quantum mechanics" was first coined by Max Born in 1924.

The acceptance by the general physics community of quantum mechanics is due to its accurate prediction of the physical behaviour of systems, including systems where Newtonian mechanics fails. Even general relativity is limited in ways quantum mechanics is not for describing systems at the atomic scale or smaller, at very low or very high energies, or the lowest temperatures.

Through a century of experimentation and applied science, the quantum mechanical theory has proven to be very successful and practical. The foundations of quantum mechanics date from the early 1800s, but the real beginnings of QM date from the work of Max Planck in 1900. Albert Einstein and Niels Bohr soon made essential contributions to what is now called the "old quantum theory."

However, it was not until 1924 that a complete picture emerged with Louis de Broglie's matter-wave hypothesis and the real importance of quantum mechanics became clear. Some of the most prominent scientists to subsequently contribute in the mid-1920s to what is now called the "new quantum mechanics" or "new physics" were Max Born, Paul Dirac, Werner Heisenberg, Wolfgang Pauli, and Erwin Schrödinger.

Later, the field was further expanded with work by Julian Schwinger, Sin-itiro Tomonaga and Richard Feynman for the development of Quantum Electrodynamics in 1947 and by Murray Gell-Mann in particular for the development of Quantum Chromodynamics. The interference that produces coloured bands on bubbles cannot be explained by a model that depicts light as a particle. It can be explained by a model that depicts it as a wave.

The drawing shows sine waves that resemble waves on the surface of the water is reflected from two surfaces of a film of varying width, but that depiction of the wave

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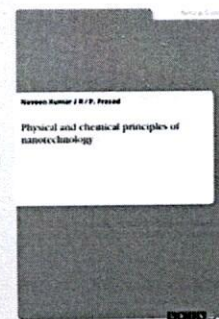
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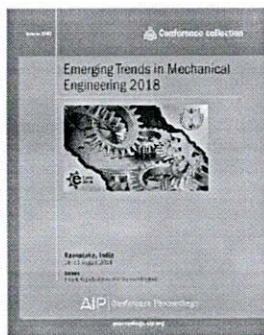
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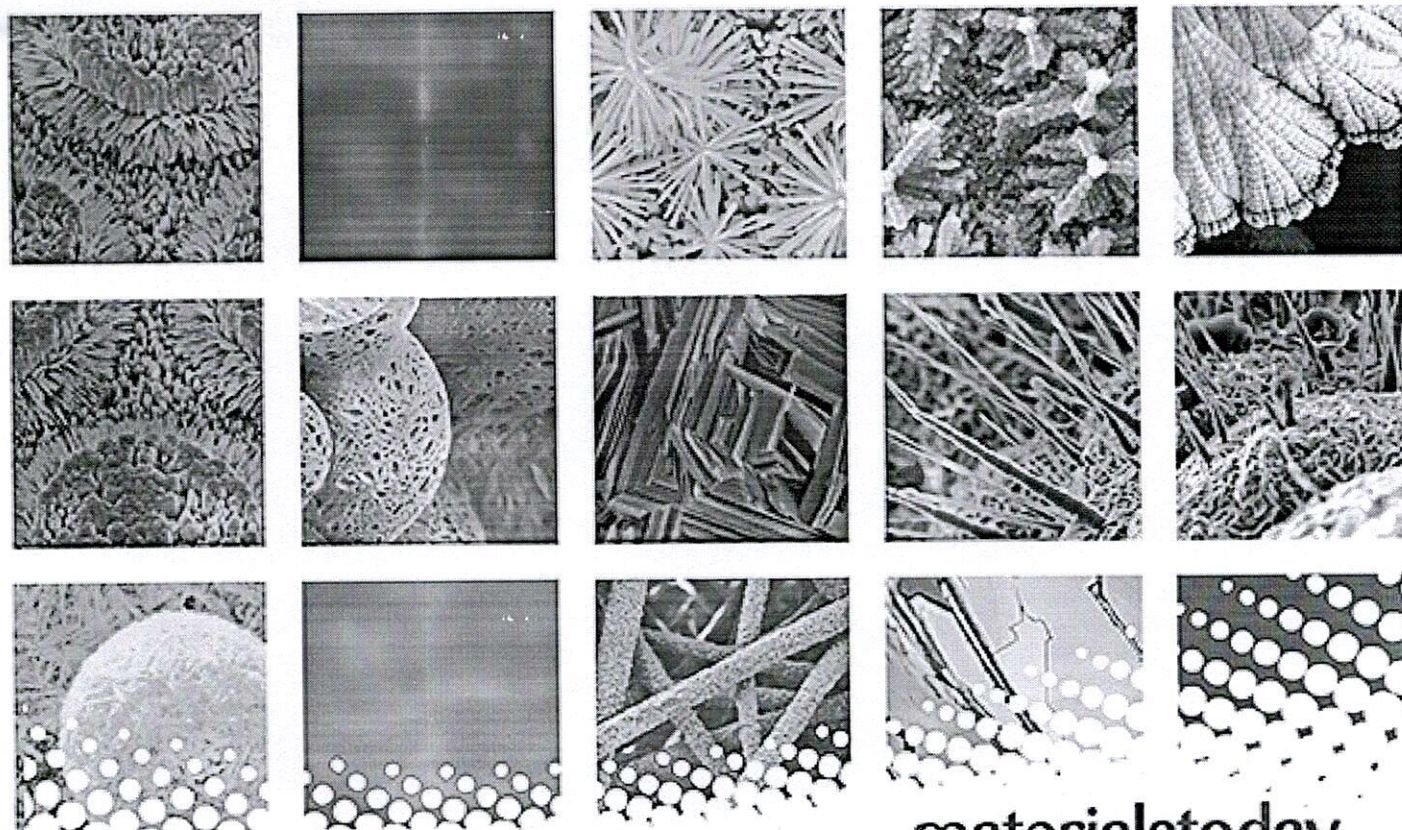
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Experimental evaluation of substrate and annealing conditions on ZnO thin films prepared by sol-gel method

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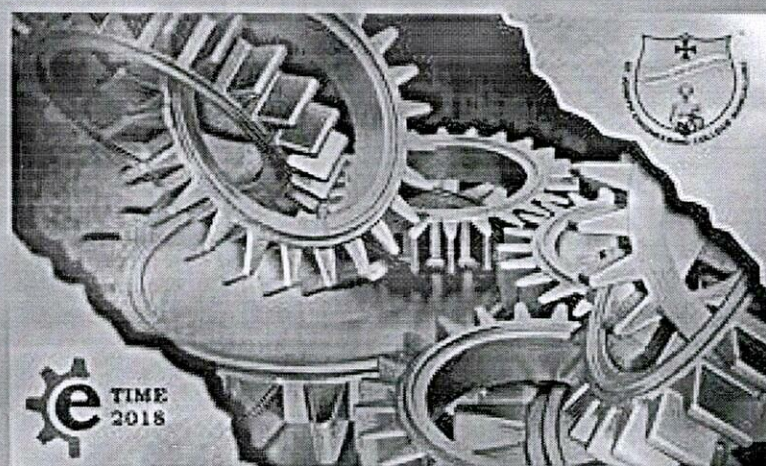
In this work, we relate the influence of annealing temperature on crystalline size, film roughness, optical, morphological and electrical properties of ZnO thin films prepared by

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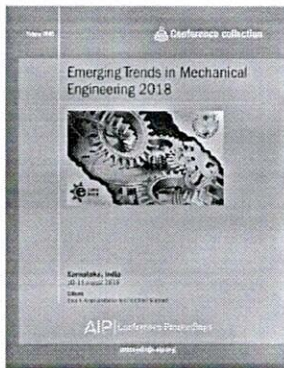
... and Analysis of Experiments ", in John Wiley & Sons, Inc. , ISBN 0-471- 86812-4 , 1984 . **First Pass Yield Improvement in Fuel Injection Pump Delivery Valve Assembly** Raghavendra Pai1, a, Vinayaka Kannantha Naveen Kumar Jagadapura Ramegowda3, c), and Lokesh Kanchugaranahally Sriramamurthy2, d...

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This work was carried out in an automotive sector, for single cylinder fuel injection pump (pf-33) delivery valve assembly line. Our work aims to focus on internal quality improvement to reduce rejection in a delivery Valve assembly line, which was having around 10.5% scrap. A substantial improvement of around 60% we estimated after the completion of work. The present work also signifies the data regarding the two significant rejections were taken for study as per Pareto Analysis from three months of rejection data. Observed that a significant problem with Delivery Valve (DV) through flow measurement is because the machine to test the through flow did not attain standard specification limits, and the method of assembly of parts needs to be improved as it caused misalignment. Some via simple techniques like the "seven basic quality control (QC) tools" and also why-Why analysis provided a valuable and cost effective way to solve the problem. Of these various

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Biosynthesis and characterization of silver nanoparticles from *Penicillium notatum* and their application to improve efficiency of antibioticsShareefraza J. Ukkund^{1,3}, M. J. Raghavendra², Yashawantha K. Marigowda², N. Abhinaya¹ and Prasad Puthyillam^{1,3}

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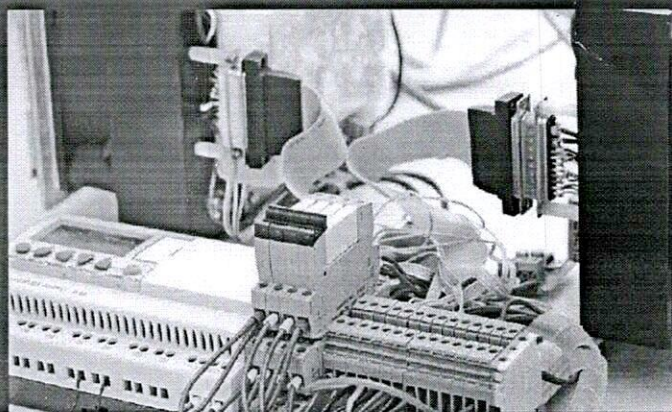
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Abstract

Nanomaterials can be synthesized by physical, chemical and biological methods. The biological nanoparticles have more advantage and gives high purity. Silver

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J. R. Naveen Kumar
P. Prasad
D. Shrinivas Mayya

Naveen Kumar J. R. has completed B.E. in Electronics and Communication and M.Tech. in Nanotechnology. Presently working as Assistant Professor at Department of Nano Technology, SIT, Srinivas Group of Institutions, Mangaluru, Karnataka, India. His research interests include Nanomaterials, Gas sensors, Thin-films & EMI Shielding.

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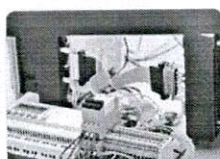
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Biosynthesis and characterization of silver nanoparticles from *Penicillium notatum* and their application to improve efficiency of antibiotics

Shareefraza J. Ukkund^{1,3}, M. J. Raghavendra², Yashawantha K. Marigowda², N. Abhinaya¹ and Prasad Puthyillam^{1,3}

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Nano Tribology and Fracture Mechanics

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CHAPTER- 1

NANOTECHNOLOGY IN MECHANICAL ENGINEERING

1.1 Introduction

Nanotechnology is science, engineering and technology conducted at the nano scale, which is about 1 to 100 nm where nano denotes the scale range of 10^{-9} and nanotechnology refers the properties of atoms and molecules measuring thoroughly 0.1 to 1000 nm. Nanotechnology is highly interdisciplinary as a field, and it requires knowledge drawn from a variety of scientific and engineering areas. Nanotechnology has become an all-embracing term, which means different things to different people. Nanotechnology is interface technologies that include many different science and applications area. Nanotechnology falls into this category and offers fundamentally new capabilities to architect a board array of the novel materials, composites and structure on a molecular scale. Here discusses on some of the applications for nanotechnology and shows a few cases of them. That is believed to have the highest probability of success in competitive industry. The nanotechnology that are economically promising for the future include those that have applications in information technology, electronics, building materials, household appliances, textiles, cosmetics, food, environmental technologies, energy technologies and medicine etc.,

Nanotechnology deals with studies of phenomena and manipulation with elements of matter at the atomic, molecular and macromolecular level (range from 1 to 100 nm), where the properties of matter are significantly different from their properties at larger scales of dimensions. There are two main types of approaches to nanotechnology: the first approach is Top-down and another one is Bottom-up approach. The Top-down approach involves taking layer structures that are either reduced down size until they reach the nano-scale or

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Nano Tribology and Fracture Mechanics



K. S. Lokesh, P. Prasad, D. Srinivasa Moorthy

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Document from the year 2018 in the subject Engineering - General grade: A, Srinivas School of Engineering (Srinivas Institute of Technology) course: Engineering, language: English, abstract: The main aim of this text book is to understand the applications of nano technology in mechanical engineering & the mechanics of nanomaterials and also to understand the concept of nano tribology & fracture mechanics and advancement in nano materials. At the end of the study student can able to understand: - Applications of nano materials in mechanical engineering; - Mechanics of nano materials; - Defects in nano structures; - Failure modes; - Mechanical behaviors

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CHAPTER 1: QUANTUM MECHANICS

1.1: INTRODUCTION

Quantum mechanics is a physical science dealing with the behaviour of matter and energy on the scale of atoms and subatomic particles/waves. It also forms the basis for the contemporary understanding of how huge objects such as stars and galaxies, and cosmological events such as the Big Bang, can be analyzed and explained.

Quantum mechanics is the foundation of several related disciplines including nanotechnology, condensed matter physics, quantum chemistry, structural biology, particle physics, and electronics. The term "quantum mechanics" was first coined by Max Born in 1924.

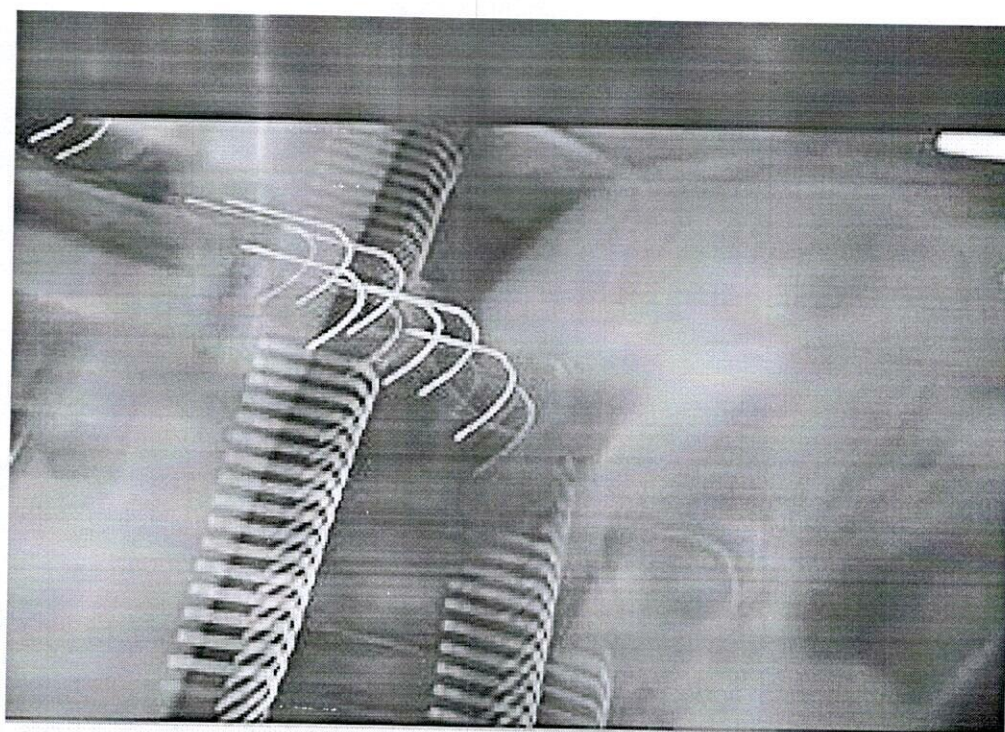
The acceptance by the general physics community of quantum mechanics is due to its accurate prediction of the physical behaviour of systems, including systems where Newtonian mechanics fails. Even general relativity is limited in ways quantum mechanics is not for describing systems at the atomic scale or smaller, at very low or very high energies, or the lowest temperatures.

Through a century of experimentation and applied science, the quantum mechanical theory has proven to be very successful and practical. The foundations of quantum mechanics date from the early 1800s, but the real beginnings of QM date from the work of Max Planck in 1900. Albert Einstein and Niels Bohr soon made essential contributions to what is now called the "old quantum theory."

However, it was not until 1924 that a complete picture emerged with Louis de Broglie's matter-wave hypothesis and the real importance of quantum mechanics became clear. Some of the most prominent scientists to subsequently contribute in the mid-1920s to what is now called the "new quantum mechanics" or "new physics" were Max Born, Paul Dirac, Werner Heisenberg, Wolfgang Pauli, and Erwin Schrödinger.

Later, the field was further expanded with work by Julian Schwinger, Sinlitiro Tomonaga and Richard Feynman for the development of Quantum Electrodynamics in 1947 and by Murray Gell-Mann in particular for the development of Quantum Chromodynamics. The interference that produces coloured bands on bubbles cannot be explained by a model that depicts light as a particle. It can be explained by a model that depicts it as a wave.

The drawing shows sine waves that resemble waves on the surface of the water is reflected from two surfaces of a film of varying width, but that depiction of the wave



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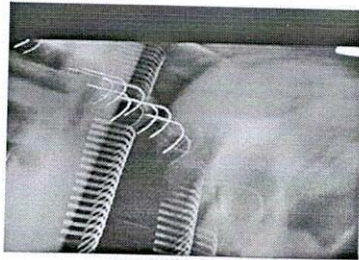
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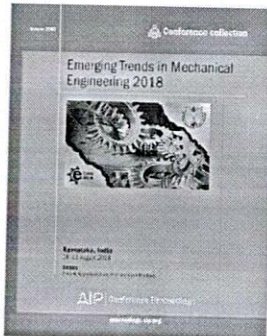
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"Basics of Nano Composites" is structured to highlight the fundamental aspects of nano composites to fulfill the prime requirement to know about the brief classification, application, and processing techniques of nano composites. This book is primarily intended to be a text book for Bachelor Degree and Master Degree students of science, engineering, and technology. This book has a special role to play in the curriculum of all branches of engineering and will hopefully present valuable guidelines to young graduates.

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Effect of E-waste rubber on mechanical behavior of glass a fiber reinforced with epoxy composites

Lokesh K. Sriramamurthy; Subhas Hunasikatti; Naveen Kumar J. Ramegowda; Vinayaka Kannantha ✉; Raghavendra Pal

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Polymer composites play a vital role in structural applications enhancing the commercial aspects of less weight and high strength, sufficient ductility, hardness, brittleness and toughness. The desirable properties of these lightweight structures form a favourable group while selecting materials recommending for applications. Adding to this the polymer matrix composites reinforced with fibers enhance excellent mechanical properties by adding filler particles into the matrix, unlike unfilled fiber reinforced plastic structures, filler composites exhibit superior bending and tensile strength. The process of developing filler composites is done by adding a minor amount of filler particulates in different percentage with respect to the volume of the matrix by employing the suitable technique. The present work highlights the importance of E-waste rubber which is directly obtained from waste tires which are powdered and sewed. The particle size is limited to 150µm which is then mixed to the

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Experimental evaluation of substrate and annealing conditions on ZnO thin films prepared by sol-gel method

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Nano Tribology and Fracture Mechanics

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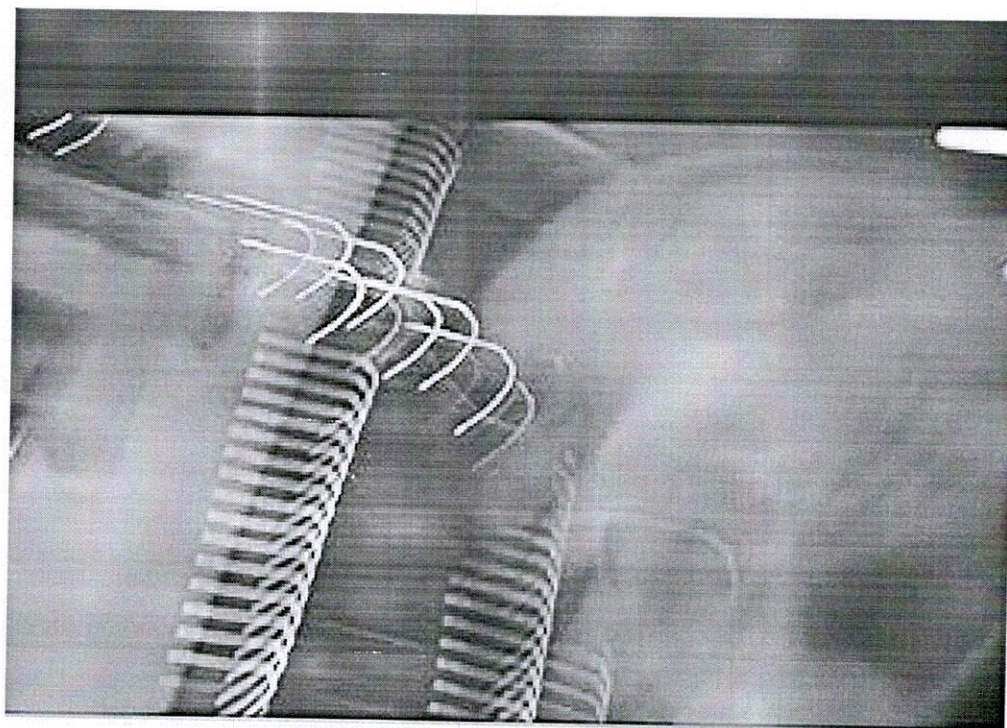
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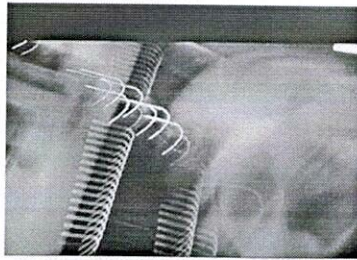
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