



ANNA VAILANKANNI COLLEGE OF ENGINEERING

(A Christian Minority Institution)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Recognized under section 2(f) of UGC Act 1956

Website: www.avce.edu.in

Dr.R Angeline Prabhavathy
PRINCIPAL

Authentication certificate

This is certify that the total number of research papers published during the last five year is 103.The year wise details are given below

Academic Year	2022-2023	2021-2022	2020-2021	2019-2020	2018-2019
Number of Research Papers	42	34	20	3	4



Principal

ANNA VAILANKANNI COLLEGE OF ENGINEERING
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3.3.1. Number of research papers published per teachers in the Journals notified on UGC care list during the last five years

Metric	Parameter
3.3.1	Number of research papers per teachers in the Journals notified on UGC website during the last five years




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3.3.1. Number of research papers published per teachers in the Journals notified on UGC care list during the last five years

CONTENT

SI No	Parameter
1	Journal's List (2022 -2023)
2	Journal's List (2022 – 2021)
3	Journal's List (2021 – 2020)
4	Journal's List (2020 – 2019)
5	Journal's List (2019 – 2018)




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3.3.1 Number of research papers published per teacher in the Journals notified on UGC CARE list during the last five years

S.No	Title of paper	Name of the author's	Department of the teacher	Name of Journal	Calendar Year of publication	ISSN number	Link to the recognition in UGC endorsement of the Journal/ Digital Object		Link to article / paper / abstract of the article	Is it listed in UGC Care list
							Journal	Journal		
1	FABRICATION OF AND CORROSION PREVENTION MECHANISMS OF TIN OXIDE (SnO ₂) DECORATED REDUCED GRAPHENE OXIDE (rGO) FOR ANODIC PROTECTION OF ZN METAL SUBSTRATE	Dr. J. Sunil	MECHANICAL ENGINEERING	Bulletin of the chemical society of Ethiopia	Jan-2024	Online ISSN 1726-801X	https://www.ajol.info/index.php/cse	https://www.ajol.info/index.php/basic/article/view/25172/2	YES	
2	Effect of ceramic particles on the mechanical and tribological properties of short carbon fibre reinforced epoxy composites	Dr. A. Jobany Varghese	MECHANICAL ENGINEERING	International Journal of surface Science and Engineering	Feb 2024	NA	https://www.inderscience.com/home.php?academicarticle	https://www.inderscienceonline.com/doi/10.1524/ijss.2024.156663	YES	
3	Tribological characteristics of carbon fibre reinforced epoxy composite filled with ceramic particles: influence of multi-walled carbon nanotubes	Dr. A. Jobany Varghese	MECHANICAL ENGINEERING	International Journal of surface Science and Engineering	Feb 2024	NA	https://www.inderscience.com/home.php?academicarticle	https://www.inderscienceonline.com/doi/10.1524/ijss.2024.156663	YES	
4	Evaluation of Photochemical and electro chemical behaviour of reduced graphene functionalized copper nanostructure as ineffective corrosive inhibitor	Dr. J. Sunil	MECHANICAL ENGINEERING	Bulletin of the chemical society of Ethiopia	Nov-2023	ISSN: 1011-3724	https://www.ajol.info/index.php/cse	https://www.researchgate.net/publication/378611627/EVALUATION_OF_PHOTO-CHEMICAL_AND_ELECTRO-CHEMICAL_BEHAVIOUR_OF_REDUCED_GRAPHENE_FUNCTIONALIZED_COPPER_NANO-STRUCTURE_AS_AN_EFFECTIVE_CORROSION_INHIBITOR	YES	
5	Underwater wireless sensor network-based machine data transmission using hybrid cat cherech optimization algorithm	Dr. J. Sunil	MECHANICAL ENGINEERING	Scientific Reports	2023	ISSN 41598-023-37952	https://www.nature.com/articles/s41598-023-37952-3		YES	
6	Synthesized and hypothesized Schiff base ligand and its metal (II) complexes DNA binding mode	V. Sabha, Pardeep Sangwan, J. Sunil	MECHANICAL ENGINEERING	Bulletin of the chemical society of Ethiopia	2023	ISSN 1133-1129	https://www.ajol.info/index.php/basic/article/view/249582	https://www.ajol.info/index.php/basic/article/view/249582	YES	
7	A study on the mechanical and durability properties of bacterial culture with Ground Granulated Blast Furnace Slag (GGBS) as partial replacement for cement	Shamugan Kurugakara, P. Praveen V, Arpit Singh, Prabhavathi	CIVIL ENGINEERING	case studies in construction materials ELSEVIER	2023	ISSN 2714-5095	https://www.sciencedirect.com	https://www.sciencedirect.com/science/article/pii/S2714509523000053	YES	
8	Breast cancer segmentation using a hybrid attention architecture combined with a pre-traind clustering optimization algorithm using mathematical modeling	S. Berlin Shabana	CSE	Open Physics	2023	: 21 20230105	https://www.degruyter.com/journal/view/journals/1000000000/2023-2023/01/html	https://www.degruyter.com/journal/view/journals/1000000000/2023-2023/01/html	YES	
9	Effect of Partial Replacement of Cement with Silica fume on the Compressive Strength and Modulus of High Performance Concrete	N. Akshay, R. Jagdish, M. S. Manjunath, M. S. Manjunath, M. S. Manjunath	MECHANICAL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHES IN SCIENCE AND TECHNOLOGY	2023	ISSN 2542-4729/ISSN-2023-23	https://www.ijrrst.com/	https://www.ijrrst.com/	YES	

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10	Behaviour of Reinforced concrete beams with circular opening strengthened by steel plates in the flexural zone	Momin Gracida, K. Angeline Prabhavathy, N. Abilash, Bramesh Robert	CIVIL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/September/paper6.pdf	YES
11	COMPRESSIVE BEHAVIOUR OF RC COLUMNS CONFINED WITH BASALT FIBRE REINFORCED POLYMERS	C. Prathibesh, S. Subramaniam Raja, E. Ida Jobakani	CIVIL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/October/paper8.pdf	YES
12	DETECTING BOTNET TRAFFIC BY USING MACHINE LEARNING	K. BAVTHA, B. JENEFA, P. SEETHA	AISDS	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-2023	http://www.irrsset.com/	http://irrsset.com/2022/September/paper7.pdf	YES
13	TIMING SYSTEM FOR BUS ENTRY WITH ARDUINO	B. JENEFA, K. BAVTHA, P. SEETHA	AISDS	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-2023	http://www.irrsset.com/	http://irrsset.com/2022/November/paper5.pdf	YES
14	A SURVEY ON SENTIMENT ANALYSIS ABOUT COVID-19 VACCINES IN SOCIAL MEDIA	J. Jene Jenolin, M. Pramila, C. Radhika	CSE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/October/paper10.pdf	YES
15	REAL TIME BI & ANALYTICS	P. ANITHA SAHAYA MERCY, M. PRAMILA	CSE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/October/paper10.pdf	YES
16	TO ENHANCE THE PERFORMANCE OF THE WSN USING SOFTWARE DEFINED NETWORK AND GAUSSIAN FILTER	S. LIGI, P. RENUKA, E. RAJESWARI	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/September/paper8.pdf	YES
17	TO OPTIMIZING ENERGY UTILITY USING CELL-LEACH PROTOCOL IN WIRELESS SENSOR NETWORK	S. LIGI, P. RENUKA, E. RAJESWARI	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/December/paper5.pdf	YES
18	SKIN CANCER DETECTION USING COMBINED DECISION OF DEEP LEARNERS	P. RENUKA, E. RAJESWARL, S. LIGI	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/June/paper7.pdf	YES
19	Risk Assessment in Business	E. Ida Jobakani, S. Subramaniam Raja, C. Prathibesh	MBA	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://irrsset.com/2022/December/paper6.pdf	YES

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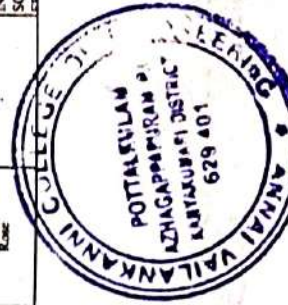


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20	Enhancing Employability skills for the Student Development Program	S. Subramani Raja, E. Ida Jothsana, C. Prathesh	MBA	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/November/papers.pdf	YES
21	EVALUATION AND TESTING OF FIBER-REINFORCED POLYMERIC COMPOSITES THROUGH EXPERIMENTATION	Dr. N. Abilash, Dr. R. Angeline Prabhavathy, C. Jagathesan, P. S. Hampson	MECHANICAL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/November/papers2.pdf	YES
22	Shakespeare's Sonnets: A Critical Study	S. Bharathi, S.M. Siva Mohala, Dr. Ramoyna Jayanthi	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/January/papers.pdf	YES
23	BASIC PROPERTIES OF n-INNER PRODUCT SPACE	T. Devi, A. Sony Angeline Rose, R. Mim, G. Golding Shobha	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/January/papers.pdf	YES
24	Structural and chemical interpretations of bioactive molecule 4-Feruloylshikimate with Molecular Docking Simulations	R. Mim, G. Golding Shobha, Shajila Lashy, Devi	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2021-22	http://www.ijrraset.com/	http://www.ijrraset.com/2021/July/papers.pdf	YES
25	IMPROVE SYNTHESIZED COPPER(II) AND SILVER (I) COMPLEXES WITH CEPHALOSPORIN ON SOME CEPHALOSPORIN RESISTANCE BACTERIA IN MECHANOCHEMISTRY	Sajitha, R. Mim, G. Golding Shobha, Shajila Lashy	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/January/papers.pdf	YES
26	Identification of structure activity relations of a synthetic drug 2,6-pyridine dicarboximide using experimental and theoretical investigation	G. Golding Shobha, Shajila Lashy, R. Mim, Devi	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2021-22	http://www.ijrraset.com/	http://www.ijrraset.com/2021/July/papers.pdf	YES
27	DFT STUDIES, STRUCTURAL DETERMINATION, CHEMICAL PROPERTIES AND TOPOLOGICAL ANALYSIS OF	Shajila Lashy, G. Golding Shobha, R. Mim, Devi	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2021-22	http://www.ijrraset.com/	http://www.ijrraset.com/2021/September/papers.pdf	YES
28	Convergence in n - inner product space	A. Sony Angeline Rose, T. Devi, R. Mim, G. Golding Shobha	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/January/papers.pdf	YES
29	Exploring Theorem and Symbolism in C.S. Lewis's 'The Chronicles of Narnia'	S.M. Siva Mohala, S. Bharathi Sathyaashish, A. Sony Angeline Rose	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN: 2347-6729/URRASET-2022-23	http://www.ijrraset.com/	http://www.ijrraset.com/2022/January/papers2.pdf	YES

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30	Navigating Identity and Alienation in Virginia Woolf's Modernistic Landscape	S.M. Siva Mehala, S. Bharathi Sathiyadhas, A. Sony Angeline Rose	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/February/paper3.pdf	YES
31	Exploring the Challenges Faced by Women in Begal Sidhwa's 'Water'	S.M. Siva Mehala, S. Bharathi Sathiyadhas, A. Sony Angeline Rose	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/March/paper2.pdf	YES
32	A MENTAL HEALTH CHATBOT USING ARTIFICIAL INTELLIGENCE	P. Remaka, S. Ligi, Ahsan Akbar A, Tharusha T S	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/March/paper5.pdf	YES
33	Effect of Partial Replacement of Cement with Silica Fume on the Strength of High Performance Concrete	N. Abilash, R. Angelina Prabhaasathy, Morrin Graecida, Susan Abraham	MECHANICAL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2022/June/paper6.pdf	YES
34	Behaviour of reinforced concrete beams with circular opening strengthened by steel plates in the flange zone	Morrin Graecida, R. Angelina Prabhaasathy, N. Abilash, Bramesh Robert	CIVIL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2022/September/paper6.pdf	YES
35	Enhancing Employability skills for the Student Development Program	S. Subramania Raja, E. Ida Jebakani, C. Pratheesh	MBA	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2022/November/paper6.pdf	YES
36	Exploring Themes and Symbolism in C.S. Lewis' 'The Chronicles of Narnia'	S.M. Siva Mehala, S. Bharathi Sathiyadhas, A. Sony Angeline Rose	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/January/paper2.pdf	YES
37	Exploring the Challenges Faced by Women in Begal Sidhwa's 'Water'	S.M. Siva Mehala, S. Bharathi Sathiyadhas, A. Sony Angeline Rose	S&H	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE ENGINEERING AND TECHNOLOGY	2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/March/paper2.pdf	YES
38	BASIC PROPERTIES OF 3D-PRINTED PRODUCT SPACE	T. Devi	S&H	International Journal on Recent Researches in Science, Engineering & Technology (IRRSSET)	Jan-23	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/January/paper5.pdf	YES
39	Exploring Themes and Symbolism in C.S. Lewis' 'The Chronicles of Narnia'	S.M. Siva Mehala, S. Bharathi Sathiyadhas, A. Sony Angeline Rose	S&H	International Journal on Recent Researches in Science, Engineering & Technology (IRRSSET)	January 2023	ISSN :2347-6729/IRRSSET-2022-23	http://www.irrsset.com/	http://www.irrsset.com/2023/January/paper7.pdf	YES




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40	Navigating Identity and Alienation in Virginia Woolf's Modernistic Landscape	S.M. Siva Mehala	S&H	International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET)	Feb-23	ISSN :2347-6729/IJRRSET-2022-23	http://www.ijrrset.com/	http://www.ijrrset.com/2023/February/paper3.pdf	YES
41	Exploring the Challenges Faced by Women in Bengal Sultana's 'Water	S.M. Siva Mehala	S&H	International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET)	1-Mar-23	ISSN :2347-6729/IJRRSET-2022-23	http://www.ijrrset.com/	http://www.ijrrset.com/2023/March/paper6.pdf	YES
42	A MENTAL HEALTH CHATBOT USING ARTIFICIAL INTELLIGENCE	P.Remika	ECE	International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET)	March 2023	ISSN :2347-6729/IJRRSET-2022-23	http://www.ijrrset.com/	http://www.ijrrset.com/2023/March/paper6.pdf	YES
43	Preface: International Conference on Advances in Materials, Computing and Communication Technologies (ICAMCCT 2021)	Dr.J Sunil	MECHANICAL ENGINEERING	(ICAMCCT 2021)	2022	ISSN 2214-5096	https://pubs.aip.org/aip/acp/article/abstract/2385/1/010001/2820397/Preface-International-Conference-on-Advances-in-?redirectedFrom=fulltext	https://pubs.aip.org/aip/acp/article/abstract/2385/1/010001/2820397/Preface-International-Conference-on-Advances-in-?redirectedFrom=fulltext	YES
44	AN INTEGRATED APPROACH FOR THE CHARACTERIZATION OF GROUNDWATER QUALITY USING MULTIVARIATE STATISTICAL	Dr.J Sunil	MECHANICAL ENGINEERING	Bulletin of the chemical society of Ethiopia	April 2022	ISSN 1011-3924	https://www.aol.info/index.php/pbese	https://www.researchgate.net/publication/367208002_Ao-integrated_approach_for_the_characterization_of_groundwater_quality_using_multivariate_statistical_techniques_and_spatial_analysis	YES
45	Experimental Investigation on the Nano mechanical properties of lubricated and Non-lubricated AISI 1018 Mild steel using Nanoindentation Technique	R.Rajaraman R.A. Anul Rajan J. Sunil	MECHANICAL ENGINEERING	Research Gate	06/01/2022	ISSN 1551-7616	https://www.researchgate.net/	https://www.researchgate.net/publication/349108185_Experimental_investigation_on_the_nano_mechanical_properties_of_lubricated_and_non_lubricated_AISI_1018_mild_steel_using_nanoindentation_technique	YES
46	Experimental Investigation on the Thermal conductivity and thermal stability of Cuo-Cocconut oil Nanofluids	N. Senniagir K. Balaji M. Elango Bharath Ram S. Rajesh Kumar J. Sunil	MECHANICAL ENGINEERING	AIP conference proceedings	06/01/2022	ISSN 1551-7616	https://pubs.aip.org/aip/acp/article/doi/10.1063/1.5007079/16193243/020009_1_online.pdf	https://pubs.aip.org/aip/acp/article/abstract/2385/1/020009/2821029/Experimental-investigation-on-the-thermal-conductivity-of-Cuo-Cocconut-oil-Nanofluids	YES
47	Facile and scalable synthesis of Zn and Tin Doped Zn Nano structures A. Study on Electrochemical properties for corrosion Application	S. Ravi Kumar S. Surendhiram J. Sunil K. C. Suresh A. Balamurugan Y.A Syed Khadar	MECHANICAL ENGINEERING	AIP conference proceedings	06/01/2022	ISSN 1551-7616	https://pubs.aip.org/aip/acp/article/doi/10.1063/1.5007079/16195243/020009_1_online.pdf	https://pubs.aip.org/aip/acp/article/doi/10.1063/1.5007079/16195243/020009_1_online.pdf	YES
48	Improving overall Equipment Effectiveness in welding Robots by using single Minute Exchange of Dies and Adding Additional positioners and fixtures in Bull Machines	N. Senniagir J. M. Aravindh P. Gokul Raj S. Hariharan S. Bharanidharan J. Sunil	MECHANICAL ENGINEERING	Research Gate	06/01/2022	ISSN 1551-7616	https://www.researchgate.net/	https://www.researchgate.net/publication/357657815_Improving_overall_equipment_effectiveness_in_welding_robots_by_using_single_minute_exchange_of_dies_and_adding_additional_positioners_and_fixtures_in_bull_machines_1_Request_PDF	YES
49	Investigation on vibrational spectral Activity and theoretical computation of an Anticancer Drug (P-Tolvencsuifoynt) Imidezole	G.Golding sheeba D.Usha. A. Benham M. Amalambhan G. Gaswin Kastro D. David Philip	S&H Mechanical ECE	Research Gate	06/01/2022	ISSN 1551-7616	https://www.researchgate.net/	https://www.researchgate.net/publication/357657815_Improving_overall_equipment_effectiveness_in_welding_robots_by_using_single_minute_exchange_of_dies_and_adding_additional_positioners_and_fixtures_in_bull_machines_1_Request_PDF	YES



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50	IDENTIFICATION OF CALCIUM CARBONATE PRODUCING NOVEL Bacillus cereus KOYIS ISOLATED FROM SOIL MICROBIAL COMMUNITIES TOWARDS	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	Oxidation Communication	2022	45, No 1, 81-92 (2022)	https://www.scimagojr.com/journalSearch.php?iq=2642&tip=&id&elcan=0	https://openurl.ebsco.com/LIB/EBSCO_Access/3/AS%3A20167941/detail?2?id=ebso%3Aplink%3AScholar&id=ebso%3A15636696%3&cd=F	YES
51	BACTERIAL FORAGING OPTIMIZATION BASED ON DISEASE RECOGNITION	Ms Priscilla Packia Siaz	ECE	International Journal of Early Childhood Special Education (INT-JECSE)	2022	ISSN: 1308-5581	https://www.int-jecse.net/	https://www.int-jecse.net/article/BACTERIAL-FORAGING+OPTIMIZATION+BASED+ON++DISEASE+RECOGNITION_3172/	YES
52	Investigation on vibrational spectral Activity and theoretical computation of an Anticancer Drug (P-Toluenesulfonyl Imidazole)	G.Golding sheeba D.Usha, A. Benham M. Annamathian G. Gaswin Kastro D. David Philip Dmel	S&H Mechanical ECE	International Journal of Scientific Research in Science, Engineering and Technology	06/01/2022	ISSN 1551-7616	https://www.researchgate.net/	https://www.researchgate.net/publication/357657815_Investigation_on_vibrational_spectral_activity_by_and_theoretical_computation_of_an_anticancer_drug_p-toluenesulfonyl_imidazole	YES
53	Effect of Partial Replacement of Cement with Silica fume on the Strength of High Performance Concrete	N.Abilash,	MECH	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	June 2022-2023	ISSN :2347-6729/URRSET-2022-23	https://www.ijrset.com/	http://ijrset.com/2022/June/paper6.pdf	YES
54	Behaviour of Reinforced concrete beams with circular opening strengthened by steel plants in the fissural zone	Morrin Gracida R. Angelina Prabhavathy N.Abilash Branesh Robert	CIVIL ENGINEERING	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	Sep-22	ISSN :2347-6729/URRSET-2022-23	https://www.ijrset.com/	https://ijrset.com/2022/September/paper6.pdf	YES
55	COMPRESSIVE BEHAVIOUR OF RC COLUMNS CONFINED WITH BASALT FIBRE REINFORCED POLYMERS	C.Prathbesh S. Subramania Raja Elda Jebakani	Civil Engineering	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	Oct-22	ISSN :2347-6729/URRSET-2022-23	http://www.ijrset.com/	http://ijrset.com/2022/October/paper8.pdf	YES
56	DETECTING BOTNET TRAFFIC BY USING MACHINE LEARNING	K.BAVITHIA ¹ K.BAVITHIA ¹ B.JENEFA P.SREETHA ²	AISDS	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	September 2022	ISSN :2347-6729/URRSET-2022-2023	https://www.ijrset.com/	http://ijrset.com/2022/September/paper7.pdf	YES
57	TIMING SYSTEM FOR BUS ENTRY WITH ARDUINO	B.JENEFA B.JENEFA K.BAVITHIA ¹ P.SREETHA ²	AISDS	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	Nov-22	ISSN :2347-6729/URRSET-2022-2023	https://www.ijrset.com/	https://ijrset.com/2022/November/paper5.pdf	YES
58	A SURVEY ON SENTIMENT ANALYSIS ABOUT COVID-19 VACCINES IN SOCIAL MEDIA	J.Jane Jeevini ¹ M.Prunilla ² G.Radhika ³	CSE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE, ENGINEERING AND TECHNOLOGY	Oct-22	ISSN :2347-6729/URRSET-2022-23	http://www.ijrset.com/	http://ijrset.com/2022/October/paper9.pdf	YES





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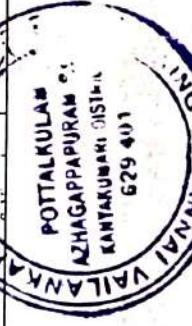
59	NEAREST NEIGHBOUR BASED FUNGAL DISEASE DETECTION APPROACH IN LEAF IMAGES	CSANM ROWER JINTIA SAIJAYA MBER G.Rabhu ¹	CSE	RESEARCH JOURNAL IN GLOBAL ENGINEERING AND SCIENCE	September 2022 – November 2022	ISSN : 2456-172X/IRJGES 2022-2023	http://www.ijrnet.com/	http://www.ijrnet.com/Volume7/Issue3/paper11.pdf	YES
60	TO ENHANCE THE PERFORMANCE OF THE WSN USING SOFTWARE DEFINED NETWORK AND GAUSSIAN FILTER	S.LIGI S.LIGI P.RENUKA E.RAJESWARI	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE,ENGINEERING AND TECHNOLOGY	Sep-22	ISSN :2347-6729/IRJRSCT-2022-23	http://www.ijrnet.com/	http://ijrnet.com/2022/September/paper8.pdf	YES
61	TO OPTIMIZING ENERGY UTILITY USING CELL-LEACH PROTOCOL IN WIRELESS SENSOR NETWORK	S.LIGI S.LIGI P.RENUKA E.RAJESWARI	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE,ENGINEERING AND TECHNOLOGY	Dec-22	ISSN :2347-6729/IRJRSCT-2022-23	http://www.ijrnet.com/	http://ijrnet.com/2022/December/paper5.pdf	YES
62	SKIN CANCER DETECTION USING COMBINED DECISION OF DEEP LEARNERS	P.RENUKA E.RAJESWARI S.LIGI	ECE	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE,ENGINEERING AND TECHNOLOGY	June 2022-2023	ISSN :2347-6729/IRJRSCT-2022-23	http://www.ijrnet.com/	http://ijrnet.com/2022/June/paper7.pdf	YES
63	Risk Assessment in Business	E. Ida Jebakani S.Subramania Raja C.Pratheesh	MBA	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE,ENGINEERING AND TECHNOLOGY	December 2022	ISSN :2347-6729/IRJRSCT-2022-23	http://www.ijrnet.com/	http://ijrnet.com/2022/December/paper6.pdf	YES
64	Enhancing Employability skills for the Student Development Program	S.Subramania Raja S.Subramania Raja E. Ida Jebakani C.Pratheesh	MBA	INTERNATIONAL JOURNAL ON RECENT RESEARCHERS IN SCIENCE,ENGINEERING AND TECHNOLOGY	November 2022	ISSN :2347-6729/IRJRSCT-2022-23	http://www.ijrnet.com/	http://ijrnet.com/2022/November/paper6.pdf	YES
65	RESORCED NATURAL FIBER COMPOSITE'S POTENTIAL ENHANCEMENT	Dr.N.Abilash R. Angelina Prabhava N.Manikandan J.Prabhu ⁴	MECH	INTERNATIONAL RESEARCH JOURNAL IN GLOBAL ENGINEERING AND SCIENCE	December 2022 to February 2023	ISSN : 2456-172X/IRJGES 2022-23	http://www.ijrnet.com/	http://www.ijrnet.com/Volume7/Issue4/paper6.pdf	YES
66	EVALUATION AND TESTING OF FIBER-REINFORCED POLYMERIC COMPOSITES THROUGH EXPERIMENTATION	R.Angelina Prabhava C.Jegatheesan ¹ P.S Hampton ⁴	MECH	International Journal on Recent Researches in Science,Engineering & Technology (IJRSCT)	Nov-22	ISSN :2347-6729/IRJRSCT-2022-23	http://www.ijrnet.com/	http://ijrnet.com/2022/November/paper7.pdf	YES
67	JUTE-BASED SANDWICH COMPOSITE: FABRICATION AND VIBRATION TESTING	Dr.N.Abilash R. Angelina Prabhava	MECH	International Research Journal in Global Engineering and Science	September 2022 – November 2022	ISSN : 2456-172X/IRJGES 2022-23	http://www.ijrnet.com/	http://www.ijrnet.com/Volume7/Issue11/paper12.pdf	YES


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68	SISAL-BASED FIBER-REINFORCED COMPOSITE FABRICATION AND TESTING OF ITS MECHANICAL BEHAVIOR	David Philip Daniel Dr.N.Abilash R.Angeline Prabha Dr.Johny Varghese David Philip Daniel	MECH	International Research Journal in Global Engineering and Sciences	December 2022 to February 2023	ISSN : 2456-172X/IRGES 2022 23	http://www.ijrises.com/	https://www.ijrises.com/Volume7/issue4/paper7.pdf	YES
69	Shakespeare's Sonnets: A Critical Study	S.M.Siva Mehala S.M.Siva Mehala Dr.Renolyn Jeyanthi A. Sony Angelina Ros	S&H	International Journal on Recent Researches in Science Engineering & Technology (IJRSET)	June 2022-2023	ISSN : 2347-6729/IJRSET-2022 23	http://www.ijrset.com/	http://ijrset.com/2022/June/paper8.pdf	YES
70	Convergence in n - inner product space	T. Devi ² R.Mini G.Golding Sheeba ²	S&H	International Journal on Recent Researches in Science Engineering & Technology (IJRSET)	June 2022-2023	ISSN : 2347-6729/IJRSET-2022 23	http://www.ijrset.com/	http://ijrset.com/2022/June/paper5.pdf	YES
71	IMPLEMENTATION OF ROBOTIC BASED WASTE COLLECTOR AND SEGREGATOR USING IOT	B.JENEFA ¹ ABIN.T ¹ MARIYAPPAN MATHIAN.M ² RAJADONALD.N ¹	AISDS	International Research Journal in Global Engineering and Sciences	September 2022 - November 2022	ISSN : 2456-172X/IRGES 2022-2023	http://www.ijrises.com/	http://ijrises.com/Volume7/issue3/paper13.pdf	YES
72	AN EFFICIENT CLOUD SECURITY SYSTEM USING DOUBLE SECRET KEY	NISIANITHIM SANJAY.T ¹	AISDS	International Research Journal in Global Engineering and Sciences	December 2022 to February 2023	ISSN : 2456-172X/IRGES 2022-2023	http://www.ijrises.com/	http://ijrises.com/Volume7/issue4/paper8.pdf	YES
73	AI-POWERED NUTRITION ANALYSER FOR FITNESS ENTHUSIAST	L.MUTHUKUMAR ¹ ANNABABISHA.T ¹	AISDS	International Research Journal in Global Engineering and Sciences	September 2022 - November 2022	ISSN : 2456-172X/IRGES 2022-2023	http://www.ijrises.com/	http://ijrises.com/Volume7/issue3/paper14.pdf	YES
74	FAKE PROFILE DETECTION BASED ON MACHINE LEARNING AND BLOCKCHAIN	K.BAVTHA ¹ M.PRASANNA ²	AISDS	International Research Journal in Global Engineering and Sciences	December 2022 to February 2023	ISSN : 2456-172X/IRGES 2022-2023	http://www.ijrises.com/	http://ijrises.com/Volume7/issue4/paper9.pdf	YES
75	DETECTING AVALANCHE VICTIMS EFFICIENTLY IN HARSH CONDITIONS	P.SEETHA AJESH.V ¹	AISDS	International Research Journal in Global Engineering and Sciences	September 2022 - November 2022	ISSN : 2456-172X/IRGES 2022-2023	http://www.ijrises.com/	http://ijrises.com/Volume7/issue4/paper9.pdf	YES
76	AI MEDICINAL ROBOT AN IOT INNOVATION FOR HEALTHCARE	E.Rajeswani P.Renuka s.sivakala	ECE	International Research Journal in Global Engineering and Sciences	December 2022 to February 2023	ISSN : 2456-172X/IRGES 2022-2023	http://www.ijrises.com/	http://ijrises.com/Volume7/issue4/paper10.pdf	YES
77	Effects of temperature and particles contraction on the thermal conductivity of graphene-NiO/Cocoon oil hybrid nanofluid	J.Sunil N.Srinivasan P. Anand Sudherson	MECHANICAL ENGINEERING	Research Gate	07/02/2021	ISSN-2214-7853	https://www.researchgate.net/	https://www.researchgate.net/publication/349918173-Effects-of-temperature-and-particles-contraction-on-the-thermal-conductivity-of-graphene-NiO-Cocoon-oil-hybrid-nanofluid	YES


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78	Design and Development of unmanned river water trash collector	J Sumil M Anish Thomson A. Abiram G.R. Jenish	MECHANICAL ENGINEERING	USRST- International Journal of Scientific Research in	10/04/2021	ISSN-2394-4099	https://jstsr.com/USRST219117	https://jstsr.com/home/issue/view/article.php?id=USRST219117	YES
79	The Lubricating properties of Graphene Nio/Cocunut oil hybrid nanofluids	N. Sennangin S. Manikandan G. Dhyanathi D. Hari Harasbayee C. Chelladurai	MECHANICAL ENGINEERING	Research Gate	09/02/2021	ISSN-2214-7853	https://www.researchgate.net/	https://www.researchgate.net/publication/349260244-The-lubricating-properties-of-Graphene-NiO-coconut-Oil-Hybrid-Nanofluids	YES
80	Design and fabrication of hybrid power generator	J Sumil J Prabhu G. Glaxton Shamuel A. Anavith Raj	MECHANICAL ENGINEERING	USRST- International Journal of Scientific Research in	10/04/2021	ISSN-2394-4099	https://jstsr.com/USRSET219834	https://jstsr.com/home/issue/view/article.php?id=USRSET219834	YES
81	Flexural Behaviour of RC Beams with a Circular Opening at the Flexural Zone and Shear Zone Strengthened Using Steel Plates	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	Advances in Civil Engineering	2021	Article ID 6733402	https://onlinelibrary.wiley.com/doi/10.1002/ce.17074	https://www.researchgate.net/publication/356732303-Flexural-Behaviour-of-RC-Beams-with-a-Circular-Opening-at-the-Flexural-Zone-and-Shear-Zone-Strengthened-Using-Steel-Plates	YES
82	Stress-Strain Behaviour of Bacterial Concrete Incorporated With Sugarcane Fibres	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	Turkish Journal of Computer and Mathematics Education	Jan 2021	Vol 12 No.3(2021), 5596-5606	https://turcomat.org/	https://turcomat.org/index.php/turkbilmat/article/view/2231	YES
83	A STUDY ON BACTERIAL CONCRETE WITH SUGARCANE FIBERS FLEXURAL BEHAVIOR	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	International Journal of Mechanical and Production Engineering	Feb 2021	ISSN (P): 2249-6890; ISSN (E) 2249-8001	http://www.ijmpes.org/journalof-mechanical-engineering	https://www.ijmpes.org/journalof-mechanical-engineering	YES
84	Experimental Study on the Durability of Bacterial Concrete Incorporated with Sugarcane Fibres	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	Journal of Green Engineering (JGE)	March 2021	Volume-11, Issue-3,	https://www.scimagoir.com/journalsearch.php?q=21109237401&tip=std&clean=0		YES
85	Perceptual Based Color Image Segmentation And Object detection Through A BBO Algorithm Modified With Evolutionary Strategy.	S. Berlin Shaheema	CSE	International Journal of Scientific Research and Engineering	2021	ISSN-2394-4099	http://www.ijstred.com/	https://jstred.com/volume4/issue2/49-percentual-based-color-image-segmentation-and-object-detection-through-a-bbo-algorithm-modified-with-evolutionary-strategy.html	YES
86	Solar powered smart Assistance for irrigation system	P. Divya Jothi J. Jayakumar P.M. Ansho	ECE	International Journal of Scientific Research in Science,	10/04/2021	ISSN-2394-4099	https://jstsr.com/	https://jstsr.com/home/issue/view/article.php?id=USRSET219843	YES
87	MRI based brain tumor detection using spearmann algorithm with optimized	R. Robert J. Jayakumar S.P. Keerthika kumar R. Parvathy	ECE	International Journal of Scientific Research in Science,	10/04/2021	ISSN-2394-4099	https://jstsr.com/	https://jstsr.com/home/issue/view/article.php?id=USRSET219878	YES
88	"NeoGen AgriCare" Advancing Crop Resilience via Real-Time Disease Detection and IoT-Driven results for Banana crop	L.MUTHUKUMAR J.JEGANNATHAN ²	AI/DS	INTERNATIONAL RESEARCH JOURNAL IN GLOBAL	June 2021 - August 2021	ISSN : 2456-172X/18GES 2022-2023	http://www.ijres.com/	http://ijres.com/Volume2/Issue2/Issue2.pdf	YES
89	SMART WALKING STICK	V.VEETIA ¹ P.VEETIA ²	AI/DS	INTERNATIONAL RESEARCH JOURNAL IN GLOBAL	June 2021 - August 2021	ISSN : 2456-172X/18GES 2022-2023	http://www.ijres.com/	http://www.ijres.com/Volume2/Issue2/Issue2.pdf	YES



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Sl. No.	BLIND PERSON	Author	Journal Name	Volume	Issue	Date	ISSN	Journal Website	Article Link	Year
90	REAL TIME BI & ANALYTICS	B.JENIFA K.DAVITHA ¹ P.ANITHA SAIYAMA M.PRAMILA ² G.RADHIKA ¹ M.PRAMILA ¹ LIANE JENOLIN ²	INTERNATIONAL JOURNAL ON RECENT RESEARCHES IN GLOBAL ENGINEERING AND SCIENCE	CSE	June 2021 - August 2021	ISSN : 2347-6729 / IJRASET-2022-23	http://www.ijraset.com/	http://www.ijraset.com/Vol/volmz2/issue2/paper4.pdf	YES	
91	Fibermap Detecting System Using IoT	R.Mini G.Golding Sheeba ² Shijula Indry ³ Dev ⁴	INTERNATIONAL JOURNAL ON RECENT RESEARCHES IN GLOBAL ENGINEERING AND SCIENCE	CSE	June 2021 - August 2021	ISSN : 2347-6729 / IJRASET-2022-23	http://www.ijraset.com/	http://www.ijraset.com/Vol/volmz2/issue2/paper6.pdf	YES	
92	Structural and chemical interpretation of bioactive molecule 4-Formylsalicylic acid with Molecular Docking Simulations	R.Mini G.Golding Sheeba ² Shijula Indry ³ Dev ⁴	International Journal on Recent Researches in Science, Engineering & Technology (IJRASET)	S&H	Jul-21	ISSN : 2347-6729 / IJRASET-2021-22	http://www.ijraset.com/	http://www.ijraset.com/2021/July/paper6.pdf	YES	
93	IMPROVE SYNTHESIZED COPPER (II) AND SILVER (I) COMPLEXES WITH CEFUROXIME ON SOME CEPHALOSPORIN RESISTANCE BACTERIA IN MECHANOCHEMICALLY	Sajitha Shijula Indry ³ R.Mini Dev ⁴	International Journal on Recent Researches in Science, Engineering & Technology (IJRASET)	S&H	1-Jul-21	ISSN : 2347-6729 / IJRASET-2022-23	http://www.ijraset.com/	http://www.ijraset.com/2021/July/paper5.pdf	YES	
94	DFT STUDIES, STRUCTURAL DETERMINATION, CHEMICAL PROPERTIES AND TOPOLOGICAL ANALYSIS OF	Shijula Indry ³ G.Golding Sheeba ² R.Mini Dev ⁴	International Journal on Recent Researches in Science, Engineering & Technology (IJRASET)	S&H	September 2021-2022	ISSN : 2347-6729 / IJRASET-2021-22	http://www.ijraset.com/	http://www.ijraset.com/2021/Sept/paper5.pdf	YES	
95	FOOD CONNECT : UTILIZING WEB DEVELOPMENT TECHNOLOGIES TO BUILD A LOGISTICAL NETWORK THAT CONNECT KANNIARUMARI'S SURPLUS AND DEFICIENT FOOD RESOURCES	P.Remaka E.Rajawani M.Ganga Devi R.Sambhya	International Journal on Recent Researches in Science, Engineering & Technology (IJRASET)	ECE	1-Jul-21	ISSN : 2347-6729 / IJRASET-2021-22	http://www.ijraset.com/	http://www.ijraset.com/2021/July/paper7.pdf	YES	
96	ASSESSING THE INTEGRITY OF THE SUPPLY CHAIN AND CONFIRMING THE LEGITIMACY OF MEDICINAL HERBS	P.Remaka Sree Vinisha Shalini Ganga V	International Journal on Recent Researches in Science, Engineering & Technology (IJRASET)	ECE	September 2021-2022	ISSN : 2347-6729 / IJRASET-2021-22	http://www.ijraset.com/	http://www.ijraset.com/2021/Sept/paper6.pdf	YES	
97	Low Velocity Impact, Fatigue and Visco-elastic Behaviour of Carbon/E-glass Intra-ply fibre Reinforced Epoxy Resin Composite	Saiheesh Kumar Dr.A.Johny	Springer	MECHANICAL ENGINEERING	June 2020	ISSN 1876-990X	https://www.springer.com/	https://link.springer.com/article/10.1007/s12633-020-00556-3	YES	
98	Experimental Study on Reinforced Eco-Friendly Compacting	Dr. R. Angelina Prabhavathy	International Journal of Engineering Research and	CIVIL ENGINEERING	2020	ISSN 0974-3154,	https://www.ijert.org/	http://www.ijert.org/issue20/ijert2012031.pdf	YES	




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99	A Study on the Behaviour of Bacterial Concrete With Sugar Case Fibers	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	Journal of Green Engineering (JGE)	Oct-2020	Volume-10, Issue-10.	https://www.scopus.com/journal/home?ui=submit&search.php?ui=21100237401&ig=ys&sk=if&start=0	https://www.scopus.com/journal/home?ui=submit&search.php?ui=21100237401&ig=ys&sk=if&start=0	YES
100	Application of Neural Network for Prediction of Compressive strength of silica Fume Concrete	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	International Journal of Civil Engineering and Technology	February 2019	ISSN Print 0976-6308 and ISSN Online 0976-6316	https://iaeme.com/MasterAdmin/Journal_upload/JCIET/VOLUME_10_ISSUE_2/JCIET_10_02_183.pdf	https://iaeme.com/MasterAdmin/Journal_upload/JCIET/VOLUME_10_ISSUE_2/JCIET_10_02_183.pdf	YES
101	Artificial Neural Network and Particle Swarm Optimization in Orange Identification	Mr. J. Javakumar	ECE	International Research Journal of Research and Technology	01.03.2019	e-ISSN: 2395-0036 p-ISSN: 2395-0072	https://www.idret.net/	https://www.idret.net/archives/V6-I3-IRJET-V6I3I150.pdf	YES
102	STUDY OF PORE STRUCTURE OF SILICA FUME CONCRETE FOR OPTIMUM REPLACEMENT	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	International Journal of Civil Engineering and Technology	2018	ISSN Print 0976-6308 and ISSN Online 0976-6316	https://iaeme.com/MasterAdmin/Journal_upload/JCIET/VOLUME_9_ISSUE_3/JCIET_09_03_192.pdf	https://iaeme.com/MasterAdmin/Journal_upload/JCIET/VOLUME_9_ISSUE_3/JCIET_09_03_192.pdf	YES
103	EXPERIMENTAL STUDY ON ECOFRIENDLY POLY PROPYLENE FIBRE	Dr. R. Angelina Prabhavathy	CIVIL ENGINEERING	ARPJN Journal of Engineering and Applied Sciences	December 2018	ISSN 1819-6608	http://www.arpjournals.com/journals	http://www.arpjournals.com/journals/research_papers/m_2018/iss_1218_7449.pdf	YES



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**FABRICATION OF AND CORROSION PREVENTION MECHANISMS OF TIN
OXIDE (SnO₂) DECORATED REDUCED GRAPHENE OXIDE (rGO) FOR
ANODIC PROTECTION OF ZN METAL SURFACES**

Haewon Byeon¹, V. Puvana Devi², P. Peter Anandkumar³, Ashwini Balakumar⁴, S. Bharathi
Raja⁵, D. Prince Sahaya Sudherson⁶ and J. Sunil^{7*}

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ABSTRACT. The hydrothermal approach was utilized to prepare SnO₂ and rGO-SnO₂ composite, and its physicochemical properties and corrosion resistance application are examined in this study. The results suggest that the SnO₂, rGO-SnO₂ composite exhibits a well-defined and uniform morphology, with SnO₂ NPs homogeneously distributed and anchored on the rGO. XRD analysis confirms the crystalline tetragonal structure with 19.1 nm and 20.8 crystalline size. Further, the corrosion resistance application of the rGO-SnO₂ composite is evaluated through electrochemical measurements, such as potentiodynamic polarization and electrochemical impedance spectroscopy (EIS). The composite-coated substrate is subjected to NaCl electrolyte using a Zn plate. The corrosion performance is compared with that of bare Sn and rGO-SnO₂ counterparts to assess the synergistic effect of the composite which exhibits enhanced anticorrosion properties. The synergistic effect of Sn and rGO in the composite offers superior corrosion resistance, making it a promising material for various corrosion-prone applications. Overall, the findings contribute to developing novel and effective strategies for combating corrosion, ensuring the durability and reliability of materials in diverse industrial environments.

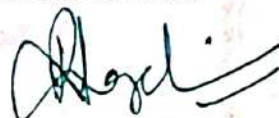
KEY WORDS: Sn-rGO composite, Tafel plot, Corrosion protection, Surface analysis, Synergistic effect

INTRODUCTION

Corrosion control has become a significant priority across several sectors in the persistent need for innovative and sustainable technical solutions. Corrosion may cause serious problems, including financial consequences and safety hazards [1]. Developing effective anticorrosion materials and coatings is essential to protect vital infrastructure, extend the useful life of engineering components, and improve overall system dependability. Regarding corrosion inhibitors to a corrosive environment or the application of corrosion inhibitors to the surface of a metal may slow or stop the corrosion process [2]. The metal is protected from degradation due to the inhibitors' ability to hinder the electrochemical processes that lead to corrosion. Anticorrosion

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Effect of ceramic particles on the mechanical and tribological properties of short carbon fibre reinforced epoxy composites

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Abstract: In this investigation, an effort has been made to develop the short carbon fibre stiffened epoxy composites (CFSEC) mixed with multi-walled carbon nano-tubes (MWCNT) and silicon carbide particles (SiCp) using a compression moulding process. The content of MWCNT varied as 0.5%, 1%, and 1.5%, and SiCp content was maintained at 10% by weight of the composite. The impact of the ceramic particles on mechanical characteristics such as hardness, tensile, flexural, and wear behaviour of CFSEC was investigated. For all the mechanical characteristics, the rise in the proportion of MWCNT in the composite has shown a significant improvement. The specific wear rate (SWR) and coefficient of friction (COF) of the composite were studied using the pin-on-disc tester. The wear parameters yielding the lowest SWR and COF were identified from the wear testing process parameters. The fractography analysis of tensile specimens was carried out using a scanning electron microscope (SEM).

Keywords: epoxy; carbon fibre; multi-walled carbon nano-tubes; silicon carbide; compression moulding; tribology.



Tribological characteristics of carbon fibre reinforced epoxy composite filled with ceramic particles: influence of multi-walled carbon nanotubes

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Abstract: In this experimentation, an endeavour has been taken to develop the short carbon fibre (SCF) reinforced epoxy composites mixed with multi-walled carbon nano-tubes (MWCNT) and silicon carbide particles (SiCp) using a compression moulding machine. The quantity of MWCNT was modified by 0.5%, 1%, and 1.5%, and SiCp quantity has been taken as 15% by weight of the composite. The influence of the ceramic particles on the wear characteristics of SCF stiffened epoxy was explored. The wear testing variables, namely normal load, sliding speed, and sliding distance, were considered for the dry sliding wear test. As per the ASTM standards, the wear test was executed utilising the pin-on-disc apparatus, and the composite's rate of wear and friction coefficient were studied. The worn-out area on the wear test specimen was examined utilising a scanning electron microscope (SEM) to recognise the wear mechanism of the composites.

Keywords: epoxy, carbon fibre; multi-walled carbon nano-tubes; silicon carbide; compression moulding; tribology.



EVALUATION OF PHYSIOCHEMICAL AND ELECTROCHEMICAL BEHAVIOUR OF REDUCED GRAPHENE FUNCTIONALIZED COPPER NANOSTRUCTURE AS AN EFFECTIVE CORROSION INHIBITOR

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ABSTRACT. This study examines the physicochemical properties and corrosion resistance of hydrothermally produced copper oxide-reduced graphene oxide nanocomposite (CuO/rGO). The CuO/rGO nanocomposite has a well-defined and homogeneous structure, decreased crystal size, and uniformly distributed CuO nanoparticles tethered to the rGO. X-Ray diffraction confirms the fabrication of 15.1 nm crystalline monoclinic CuO nanoparticles. EDX confirms the composite's composition by detecting Cu, O, and C components. Electrochemical impedance spectroscopy (EIS) and potentiodynamic polarization (LSV) tests evaluate the CuO/rGO nanocomposite's corrosion resistance. A mild steel plate under an HCl electrolyte with corrosion in the PPM ratio treats the nanocomposite-coated substrate. The composite's synergistic effect is assessed by comparing its corrosion performance to CuO/rGO concentrations in ppm. The corrosion resistance data demonstrate that the CuO/rGO composite improves with inhibitor concentrations of 0, 25, 50, 75, and 100 ppm. Adding rGO to the composite protects it and speeds up charge transfer, reducing corrosion and improving stability. The composite's synergistic effect of CuO and rGO provides excellent corrosion resistance regardless of concentration, making it a viable material for corrosion-prone applications. The research develops novel and effective anti-corrosion methods to preserve materials in the food, automotive, and large-scale energy industries.

KEY WORDS: CuO/rGO nanocomposite, Tafel plot, Corrosion protection, Surface analysis

INTRODUCTION

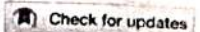
Corrosion, the degradation of metals via chemical or electrochemical interactions with their surroundings, is still a significant and cost-prohibitive problem in many fields [1]. Innovative and practical ways to reduce corrosion's damaging impacts on metal buildings, equipment, and infrastructure are required. Coatings and protective layers that may prolong the service life and improve the durability of metal substrates have received much attention due to the increased usage of sophisticated materials for anti-corrosion applications. Incorporating composites as anti-corrosion materials has attracted much interest because of the possibility of increased protective performance [2]. Among the emerging materials for anti-corrosion applications, the copper

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OPEN Underwater wireless sensor network-based multihop data transmission using hybrid cat cheetah optimization algorithm

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For the conservation and sustainable use of the oceanic environment, monitoring of underwater regions is ineluctable and is effectuated with the aid of an underwater wireless sensor network. It is accoutered with smart equipment, vehicles and sensors and utilized for the transmission of acquired data from the monitoring region and forwarded to the sink nodes (SN) where the data are retrieved. Moreover, data transmission from sensor nodes to SN is complicated by the aquatic environment's inherent complexities. To surpass those issues, the work in this article focuses to propose a Hybrid Cat Cheetah optimization algorithm (HC²OA) that purveys the energy efficient clustering based routing. The network is then partitioned into numerous clusters, each of which is led by a cluster head (CH) and comprised of many sub-clusters (CM). Based on the factors such as distance and residual energy the CH selection is optimized and collects data from the respective CMs and forwarded to the SN with a multi-hop transmission approach. The proposed HC²OA chooses the optimized multi-hop route from the CH to SN. Thus mitigates the complexities over multi-hop routing and CH selection. Simulations are effectuated in the NS2 simulator and analyzed the performance. The results of the study show that the proposed work has significant advantages over state-of-the-art works in terms of network lifetime, packet delivery ratio, and energy consumption. The energy consumption of the proposed work is 0.2 J with a packet delivery ratio is 95%. The network life time of proposed work, with respect to the coverage area around 14 km is approximately 60 h.

The underwater wireless sensor network¹ is a platform utilized to measure an enterprise's ability within a defined location; it is furnished with real-time data collection and automobiles designed to cooperate through communication channels. The earth's crust sink gathers information from edge devices. Echolocation systems² are used in aural perception to describe the shoreline, guide submersibles, and detect below objects. Submerged diagnostics for material assessment, colorimetry, and fluorophotometry for measuring various factors are examples of electro-optic biosensors used in Atlantic Adventures. Currently, the subterranean flow of information is accomplished through several of biophysical factors, including the geomagnetic force, photonic domain, and sound waves³. Reverberant listening is important for data transmission because saltwater absorbs electrostatic and photonic

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SYNTHESIZED AND HYPOTHESIZED SCHIFF BASE LIGAND AND ITS METAL(II) COMPLEXES DNA BINDING MODE

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ABSTRACT. Metal complexes play an important role in agriculture, pharmacology, medicine, and industrial chemistry. Schiff base metal compounds are the fusion products of propene and aldehydes, require a metal surrounded by an ion or cluster of molecules to form. Metal complexes of Co(II), Ni(II), Cu(II), and Zn(II) have also been created. Elemental analysis is used to analyse the structure and related compounds of the produced Schiff base ligand. According to deoxyribose nucleic acid (DNA) binding tests, Schiff base metal(II) complexes attach to DNA in an intercalative form with weak covalent connections. The predicted DNA binding mode supports an increase in the complexes' binding activity in the presence of newly generated ligand. The cleavage activities of the DNA were recorded using gel-electrophoresis in the presence and absence of the complexes. The findings of the cleavage experiment show that all of the produced chelates can successfully cut DNA.

KEY WORDS: Schiff base ligand, DNA, Metal(II) complex, Hetero-ligand cobalt(II), Aldehydes

INTRODUCTION

The interaction of transition metal(II) ions with bioactive ligands important in many physiological processes has been studied in bioinorganic chemistry. Anticancer medicines such as cis-platin and trans-platin are now widely used. Cis-platin has been demonstrated to be a successful chemotherapeutic drug for a range of cancers. Diffusion and active transport allow the medication to pass past the cell membrane [1, 2]. This substance platinates the DNA inside the cell membrane by forming adducts and crosslinking, generally through the amino acid guanine, which is the most electron rich location in the cell and hence easily oxidized. The distortion caused by the adduct formation causes DNA replication to be inhibited. Protein binding to the platinized DNA adduct has been suggested as a way to boost the drug's anticancer effects. Apart from its capacity to kill cancer cells, cis-platin has a number of unpleasant side effects.

The vast range of uses for Schiff base compounds, such as chemo sensors, light emitting diodes (LEDs), photochromic materials, catalysts, and anticorrosion agents, has piqued attention. Antimicrobial, anticancer, antibacterial, antifungal, and antioxidative actions are all demonstrated by base ligand of Schiff and their complexes [3-5]. Schiff base complexes have previously been

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A study on the mechanical and durability properties of bacterial culture with Ground Granulated Blast Furnace Slag (GGBS) as partial replacement for cement

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ARTICLE INFO

Keywords:

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Bacillus cereus KOV15
 Load-deflection studies
 Durability
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ABSTRACT

In concrete structures, the formation of cracks leads to reduction in the strength of the structures. Bioconcrete is an environmentally friendly material used for healing of cracks. In this study, the indigenous bacteria *Bacillus cereus* KOV15 obtained from the soil is used in bioconcrete with Ground Granulated Blast Furnace Slag (GGBS) as partial replacement for cement. Five different mixes of concrete such as conventional concrete and various mixes of concrete with bacterial broth culture (30% GGBS + 5% bacterial broth culture), (30% GGBS + 10% bacterial broth culture), (40% GGBS + 5% bacterial broth culture) and (40% GGBS + 10% bacterial broth culture) were used to find the mechanical and durability properties and to study the microstructure of bioconcrete. The maximum percentage increase in the cube compressive strength, the split tensile strength and the flexural strength of bioconcrete was 26.79%, 11.69% and 21.3% respectively for concrete with 30% cement replaced with GGBS and 10% bacterial broth culture in comparison with the control concrete at the 28th day. The XRD, SEM and EDX analyses were performed to identify the calcium carbonate formation in bioconcrete. The SEM images of the bioconcrete with GGBS as replacement for cement have better hydrated form and have lesser pores than the conventional concrete. The EDX results exhibited a significant increase in the amount of calcium in the bioconcrete with 30% GGBS and 10% bacterial broth culture by 103.82% than that of the conventional concrete. The permeability of chloride ion was very low (903.2 Coulombs) in concrete with 10% bacterial broth culture and 30% GGBS as partial replacement for cement. The water absorption was maximum (3.03%) in the conventional concrete specimens when compared to other bioconcrete specimens with bacterial broth culture and GGBS as partial replacement for cement. Bioconcrete showed very low permeability and higher acid resistance than the conventional concrete. The Load deflection studies exhibited higher ultimate load and ductility factor for bioconcrete and the failure pattern of bioconcrete indicated lesser number of cracks, minimum crack width and no shear failure pattern. The indigenous *Bacillus cereus* KOV15 strains can be used for the synthesis of green construction materials like calcite-based biocement.

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Research Article

Liping Yu, S. Berlin Shaheema, J. Sunil, Vedyappan Govindan, P. Mahimiraj, Yijie Li*, Wasim Jamshed, and Ahmed M. Hassan

Breast cancer segmentation using a hybrid AttendSeg architecture combined with a gravitational clustering optimization algorithm using mathematical modelling

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Abstract: Breast cancer diagnosis relies on breast ultrasound (BUS) and the early breast cancer screening saves lives. Computer-aided design (CAD) tools diagnose tumours via BUS tumour segmentation. Thus, breast cancer analysis automation may aid radiologists. Early detection of breast cancer might help the patients to survive and in context with this many approaches have been demonstrated by different researches, however, some of the works are weak in the segmentation of breast cancer images. To tackle these issues, this study propose a novel Hybrid Attendseg based gravitational clustering optimization (HA-GC) method which is utilized to segment breast cancer as normal malignant, and benign. For this we have taken the dataset known as breast ultrasound (BUS) images. This method constructively segments the breast cancer images. Prior to the segmentation, pre-processing is carried out which can be used to normalize the images incorporated with the removal of unwanted noises and format the images. Optimization selects the best qualities. An experiment is conducted and compared

the results with the parameters such as Dice coefficient, Jacquard, Precision, and Recall and attained over 90% and ensures the usage of present work in the segmentation of breast cancer images.

Keywords: segmentation, breast cancer, breast ultrasound, deep learning

1 Introduction

Breast cancer is the most common malignancy in females and the leading cause of death among women worldwide [1]. In 2020, more than 7.8 million cases of breast cancer were detected worldwide, and 2.3 million women received a diagnosis. Worldwide, 685,000 individuals lost their lives to the illness [2]. Humans' transition from a traditional to a modern lifestyle hastens the development of breast cancer. Through screening, breast cancer can be found early, which significantly lowers mortality and improves patient survival [3]. However, accurate and reliable diagnosis is necessary for early detection and localization. There are two types of tumours: benign and malignant. Malignant tumours are thought to be hazardous and are referred to as such, whereas benign tumours, which do not contain cancerous cells, are seen to be less toxic. The variables that show the level of risk in breast tumours include the tumour size, shape, location, behaviour, and growth rate.

Breast cancer may be detected and treated early with the use of a variety of imaging methods. Breast ultrasonography is often used in clinical practise for diagnosis [4]. Ultrasonography has lately been one of the most extensively used procedures for the clinical diagnosis of breast cancer due to its cheap cost, non-invasive nature, and absence of radioactivity. The most common abnormalities are masses and micro calcifications [5,6]. Micro calcifications, which are deposits of calcium, will show up as

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

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Effect of Partial Replacement of Cement with Silica fume on the Strength of High-Performance Concrete

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Abstract

Maintenance, repair and rehabilitation of existing cement concrete structures involve a lot of problem leading to significant expenditure. In the recent past, there has been considerable attention for improving the properties of concrete with respect to strength and durability, especially in aggressive environments. High performance concrete (HPC) appears to be better choice for a strong and durable structure. Suitable addition of mineral admixtures such as silica fume (SF), ground granulated blast furnace slag and fly ash in concrete improves the strength and durability of concrete due to considerable improvement in the microstructure of concrete composites, especially at the transition zone. Very few studies have been reported in India on the use of SF for development of HPC and also durability characteristics of these mixes have not been reported. In order to make a quantitative assessment of different cement replacement levels with SF on the strength for M60 grade of HPC trial mixes and to arrive at the maximum levels of replacement of cement with SF, investigations were taken. This paper reports on the performance of HPC trial mixes having different replacement levels of cement with silica fume. The strength of these mixes are compared with the mixes without silica fume. Compressive strengths of 60 MPa at 28 days were obtained by using 20%, 25% and 30% percent replacement of cement with silica fume.

Keywords: High performance concrete (HPC), strength and durability, Silica fume (SF), Replacement of cement, Superplasticizer, water-binder ratio.



Behaviour of Reinforced Concrete Beams with Circular Opening Strengthened by Steel Plates in the Flexural Zone

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Abstract

The objective of this paper is to study the behaviour of R.C beam with circular opening in the flexure zone strengthened with steel plate. In this experiment, four beams using M20 concrete and Fe415 steel were tested. Beam 1 casted as solid control beam and the beam 2 with unstrengthened circular opening of 150mm diameter in the flexure zone. The other two beams were casted with circular opening strengthened by circular steel plates stiffened by 4 and 8 shear connectors. The beams were tested as simple beam with two concentrated load. The test results revealed that the strength of the beams with circular opening strengthened by steel plates was reduced up to 15% compared to the regular beam and the strength is increased up to 70% compared to the unstrengthened beams. Thus, from the tests, it was found that strengthening of beams with circular opening in the flexure zone using steel plates are effective.

Keywords—flexural zone; circular opening; steel plates

1. Introduction

In modern buildings, web openings in the beams occur quite often in practice to provide convenient passage for environmental services. As a result, story heights in buildings can be reduced and slight reduction in concrete beams weight would improve the demand on the supporting frame both under gravity loading and seismic excitation which resulting in major cost savings. These openings may be of different shapes and sizes [4]. Although numerous shapes are possible, circular and rectangular openings are the most common ones. The presence of an opening in the web of a reinforced concrete beam leads to many problems in the beam behaviour such as reduction in the beam stiffness, excessive cracking, excessive deflection and reduction in the beam strength. [7 and 5]

Strengthening of beams provided with openings depends mainly on whether those openings are pre-planned or post-planned. In the case of pre-planned openings, both the upper and lower chords are designed and reinforced to resist the internal forces that they are subjected to two



COMPRESSIVE BEHAVIOUR OF RC COLUMNS CONFINED WITH BASALT FIBRE REINFORCED POLYMERS

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Abstract

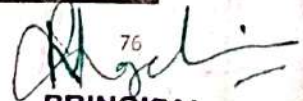
As a reinforcing agent for the production of lightweight and low-cost polymer composites, there has been a recent increase in the use of environmentally friendly natural fibers around the world. One of the interesting materials that are currently widely used is basalt, which offers inexpensive and excellent glass properties. The outstanding advantages of this composite material include high mechanical physicochemical properties, biodegradability and non-abrasive properties. This article presents the compression behavior of reinforced concrete columns (RCC), limited by basalt, used as reinforcement for composite materials. This paper also explores the basic and structural properties of underlying basalt fibers. It also encompasses efforts to showcase new trends in scientific research publications and activities in the field of basalt fibers. Further sections discuss the height of the RC column (0.9m, 1.2m, 1.5m and 1.8m) and number of plies (single and double plies) investigation is done. Comparatively short RC columns (height = 0.9m) confined with basalt fiber reinforced polymers have higher compressive strength than the other RC columns confined with basalt fiber reinforced polymers for both single and double plies.

Keywords: BFRP; RC column; Strengthening; Confinement; Compressive strength.

Introduction

Many older structures today require strengthening of their existing civil engineering infrastructure. This need arises due to factors such as aging, corrosion from environmental factors, increased stress from functional changes in design, or deficiencies from poor designs that no longer meet modern, stringent requirements, particularly in seismic areas. To withstand higher structural loads or enhance ductility, reinforcement or modernization of old structures has been performed using traditional materials, such

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DETECTING BOTNET TRAFFIC BY USING MACHINE LEARNING

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ABSTRACT

Many cyber security mishaps have been recorded globally in recent years as a result of distributed denial of service assaults. Many of these assaults were carried out via a botnet, which is often made up of hacked computers, cell phones, or IoT devices. This research suggests a machine learning technique for detecting botnet traffic. First, we used Malware Capture Facility Project datasets. The files comprise network traffic data acquired from the target machine's victim. Botnet traffic and regular traffic are both included in the network traffic data. Second, we preprocessed the traffic data and retrieved information such as source and destination addresses, ports, and packet sizes. Third, we used a machine learning system to distinguish between botnet and regular traffic. The botnet detection module is trained using a single huge dataset that includes botnet and regular traffic records. After the trained model has achieved high accuracy, new dataset is loaded into the module for detection. The suggested method can detect botnet traffic with high accuracy.

Keywords: Botnet, Machine Learning, Network, Network Security

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Timing System for Bus Entry with Arduino

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Abstract

In today's technologically advanced world, various innovations aim to enhance and simplify daily life. Accurate bus arrival times are crucial for efficient transportation management and passenger convenience. This system leverages image processing to capture and verify bus arrival details. By integrating bus numbers and images with existing data, we utilize Arduino IDE and GSM technology, specifically the SIM808 module, to transmit captured data to a web server. This process ensures that timely notifications are sent to mobile devices regarding bus arrivals. Upon the bus's arrival at the college, it is automatically identified, minimizing the need for manual oversight and optimizing time management. This system reduces the workload of guards and provides precise bus arrival times.

Keywords: Arduino, Bus Arrival Time, Intelligent Transportation System, Machine Learning

1. Introduction

The need for efficient vehicle tracking systems began in the shipping industry, where real-time location data was crucial for managing fleets and ensuring timely operations. As technology has advanced, automated tracking systems have become more sophisticated, extending their use beyond shipping to various forms of transportation, including public buses.

In contemporary urban settings, public transportation systems, such as buses, often face significant challenges in providing accurate arrival times to passengers. This is particularly problematic in campuses or large institutions where precise timing is critical for both operational efficiency and passenger convenience. Traditional bus schedules typically offer estimated arrival times, which can lead to confusion and dissatisfaction among users if the actual arrival times deviate from the estimates.

A real-time bus tracking system addresses these issues by utilizing GPS (Global Positioning System) technology to monitor the precise location of each bus. GPS technology operates through a network of satellites that continuously send signals to GPS receivers installed on buses. These receivers calculate the bus's exact location and relay this information to a central server.

To communicate the bus's location to passengers, the system employs GSM (Global System for Mobile Communications) and SMS (Short Message Service) technologies. GSM provides a reliable network for transmitting data, while SMS allows for the delivery of text-based updates to users' mobile phones.

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A Survey on Sentiment Analysis About COVID-19 Vaccines in Social Media

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Abstract

Sentiment analysis, often referred to as "opinion mining," is a natural language processing (NLP) technique that determines the emotional undertone of a piece of writing. In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic. As of late 2022, COVID-19 continues to be a global health issue. The introduction of COVID-19 vaccines has been crucial in combating the virus. According to the WHO, 50 vaccines have been approved worldwide by at least one country, with 11 receiving Emergency Use Listing (EUL). These include non-replicated viral vectors, inactivated vaccines, protein subunit vaccines, and RNA vaccines. This article reviews several studies that have conducted sentiment analysis on public opinions towards COVID-19 vaccines on social media platforms, particularly Twitter. Tweets reflect a range of emotions including eagerness, dissatisfaction, reservations, and apprehension regarding COVID-19 vaccines. Public opinion on COVID-19 vaccinations has varied significantly over time and across different regions. Research indicates that approximately 83% of people in the Philippines have had positive and enthusiastic sentiments towards vaccination, while negative sentiments were more common in Korea. In India, 78.5% of tweets about the COVID-19 vaccine were neutral or positive. Real-time sentiment analysis can help public health authorities develop localized vaccination education initiatives to address concerns about COVID-19 vaccines.


Keywords: Sentiment Analysis, COVID-19 Vaccine, Social Media, NLP, Twitter, Topic Modeling, LDA

1. Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), commonly known as COVID-19 or the new coronavirus, is a highly infectious respiratory infection. Discovered in December 2019 in Wuhan, China, it has since spread globally, affecting millions of people. The virus is primarily transmitted through the coughs and sneezes of infected individuals, but it can also be contracted by touching contaminated surfaces and then touching the eyes, nose, or mouth. In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic, and it remains an ongoing issue as of late 2022.

Vaccines have been developed and distributed globally to prevent the spread of COVID-19. These vaccines represent a critical tool in the fight against the virus. As of the latest updates, 50 vaccines have been approved worldwide, with 11 receiving Emergency Use Listing (EUL) from the WHO. These include various types such as:

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REAL-TIME BI & ANALYTICS

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ABSTRACT

In today's fast-paced world, traditional business intelligence (BI) that relies on historical data is no longer sufficient. Real-time BI and analytics (RTBI&A) emerge as a powerful solution, enabling organizations to analyze data as it arrives, offering near-instant insights for proactive decision-making. RTBI&A is a game-changer, providing a competitive edge in the data-driven landscape. It equips businesses with the ability to act on insights in real-time, shaping a future of proactive and informed decision-making. RTBI&A prioritizes analyzing data with minimal latency, allowing businesses to react to trends, issues, and opportunities as they unfold. By providing real-time insights, RTBI&A empowers businesses to optimize operations, personalize customer experiences, and mitigate risks proactively. Stream processing engines, in-memory computing, and real-time data visualization techniques are crucial for analyzing and presenting insights from high-velocity data streams. Organizations can leverage RTBI&A to achieve improved operational efficiency, increased productivity, reduced costs, enhanced customer satisfaction, and superior decision-making.

Keywords: Real-time Analytics, Streaming Analytics, Stream Processing.

INTRODUCTION

In the era of big data, where information flows like a raging river, businesses need insights faster than ever. Enter real-time business intelligence (RTBI) and analytics, the dynamic duo that analyzes data as it arrives, providing near-instantaneous knowledge to guide decisions. RTBI and analytics act like a crystal ball, offering a glimpse into the present to make informed choices about the future. By monitoring key metrics like production line efficiency, businesses can identify areas for improvement in real-time. Understanding customer behavior as it happens allows for more personalized interactions, leading to a more satisfying customer experience. Proactively identifying potential issues enables preventive actions to safeguard the business. The magic behind RTBI and analytics lies in its speed, utilizing techniques like streaming data ingestion and real-time processing to analyze massive amounts of data with minimal lag. This enables businesses to react instantly to changing market conditions, customer preferences, and internal operations.

REAL-TIME BI & ANALYTICS TECHNIQUES

Real-time BI and analytics (RTBI&A) leverage a combination of advanced techniques to analyze data with near-zero latency. Below is a breakdown of some key methods:



To Enhance the Performance of the WSN Using Software Defined Network and Gaussian Filter

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ABSTRACT

In this paper, we analyze the effectiveness of Software Defined Network (SDN) control in Wireless Sensor Networks (WSN) to estimate packet flow, utilizing a Gaussian filter to filter the transmitted signal. A Wireless Sensor Network is a wireless network consisting of independent sensors that communicate with each other in a distributed fashion to monitor the environment. Sensors are typically attached to microcontrollers and powered by batteries. The goal of a Wireless Sensor Network is to achieve a long lifetime and high reliability with maximum coverage. The practical aim of this method is to predict the next step of packet flow in advance, helping to reduce congestion if it occurs. The proposed method (SDN-WSN with Gaussian filter) enhances signal transmission, thereby reducing data errors and network congestion, which further minimizes data overflow. In the proposed method, nodes are first distributed randomly, then K-means clustering is applied to select the optimal position of the head cluster node, and finally, the network is connected using the LEACH protocol. Routing techniques are crucial for networks with limited resources. LEACH is one of the first hierarchical routing approaches for sensor networks. The Wireless Sensor Network (WSN) plays an important role in the Cell-LEACH based approach, where WSN refers to Wireless Sensor Network. In such a network, which has a large number of nodes and sensors, Software Defined Network with a Gaussian filter is proposed to control the network and minimize data errors. This is achieved by adding buffer memory to each node to store data. The data transmission process is controlled by SDN, and a Gaussian filter is applied before transmitting data to minimize errors.

Keywords: Wireless Sensor Network, Network Lifetime, LEACH, Cell-LEACH.

INTRODUCTION

WSN is a network composed of numerous sensor nodes, which are highly deployed in specific areas. The base station determines the data sensed and sends it to the committed nodes, which



TO OPTIMIZING ENERGY UTILITY USING CELL-LEACH PROTOCOL IN WIRELESS SENSOR NETWORK

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ABSTRACT

In this paper, we analyse the effectiveness of Cell-LEACH protocol in optimizing energy-constrained wireless sensor networks. Wireless sensor network consisting of independent sensor, communicating with each other in distributed fashion in order to monitor the environment. Sensors are attached to microcontroller and are powered by battery. The aim of Wireless sensor network is to have high reliability and long life time with maximum coverage. Routing techniques, which are the most important issue for networks where resources are limited. LEACH is one of the first hierarchical routing approaches for wireless sensor networks. Wireless Sensor Network (WSN) originates an important role in the Cell-Leach based approach where WSN is known for Wireless Sensor Network. In a WSN, which has a large number of nodes and many number of sensors connected to each node. In a WSN, which integrates various circuits, several computing embedded systems, many sensors, distributes large wireless communication, certain modern networks, gives out technological acquisition and allocates more information processors. Wireless sensor networks have powered battery sensor nodes and they are used for transmitting information over the environment monitors. At this point energy efficiency is an important problem in numerous WSN. Consequently, in various routing techniques have progressed such as to improve lifespan of the network, to achieve greatest scalability and also to increase the highest reliability. On other side, WSN uses a common hierarchical clustering protocol called LEACH and it initiates a standard algorithm. The proposed algorithm used is Cell-LEACH and which is elaborated as Cell Low Energy Adaptive Clustering Hierarchy. Numerous sensors are built-in with each of the cell-heads. In this formation no recalling and re-clustering is done. Here, the cell head sends all data at a specific time by TDM. In this, Cell head performs aggregation of data and sends the processed data to cluster heads while it executes similar function and transfers data to base stations while it executes similar function and transfers data to base station.

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SKIN CANCER DETECTION USING COMBINED DECISION OF DEEP LEARNERS

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Abstract

Cancer, characterized by the uncontrolled growth of cells, remains a leading public health challenge with a significant mortality rate. Skin cancer, one of the most prevalent forms, originates in the upper layer of the skin. Historically, machine learning techniques have been employed for skin cancer detection using protein sequences and various imaging modalities. However, these methods often rely on manually engineered features, which can be labor-intensive and time-consuming. Deep learning offers a solution by automating feature extraction, thus addressing some limitations of traditional machine learning approaches. In this study, convolutional neural networks (CNNs) are utilized for skin cancer detection using the ISIC public dataset. Given the critical nature of accurate cancer detection, relying on a single model may not always yield the best results. To improve accuracy, this research employs ensemble learning, which combines multiple models to enhance predictive performance. Specifically, an ensemble of deep learning models—VGG, CapsNet, and ResNet—has been developed to detect skin cancer. The experimental results demonstrate that the ensemble approach significantly outperforms individual models in terms of sensitivity, accuracy, specificity, F-score, and precision. These findings suggest that ensemble deep learning techniques could be effectively applied to other disease detection scenarios.

Keywords: Deep Learning, VGG, CapsNet, ResNet, Skin Cancer

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Risk Assessment in Business

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Abstract

Risk assessment and management have been recognized as a scientific discipline for approximately 30–40 years. The foundational principles and methods for conceptualizing, assessing, and managing risk were developed during this period and continue to underpin the field today. Despite this, significant advancements have been made in both theoretical frameworks and practical models. This paper reviews these advancements with a focus on the core concepts and ideas driving the evolution of risk assessment and management. It explores trends in perspectives and approaches, and reflects on areas where further development is necessary and should be promoted. This review is intended for a broad audience, including those without specialized expertise in risk management.

Keywords: Risk assessment, Risk management, Foundational issues, Review


1. Introduction

The concept of risk and risk assessments has a deep historical context. Over 2400 years ago, the Athenians demonstrated their capacity to assess risk before making critical decisions (Bernstein, 1996). However, risk assessment and management as a formal scientific field is relatively young, emerging only within the past 30–40 years. During this time, the first scientific journals, papers, and conferences addressing fundamental ideas and principles on risk assessment and management were established.

These foundational ideas and principles still underpin the field today, serving as the building blocks for the risk assessment and management practices that have evolved since the 1970s and 1980s. Despite this, the field has undergone significant development. More sophisticated analytical methods and techniques have been introduced, and risk analysis is now employed across various societal sectors. For example, the Society for Risk Analysis (www.sra.org) features specialty groups focusing on diverse areas such as Dose Response, Ecological Risk Assessment, Emerging Nanoscale Materials, Engineering and Infrastructure, Exposure Assessment, Microbial Risk Analysis, Occupational Health and Safety, Risk Policy and Law, and Security and Defense.

Recent advances in the field have also addressed fundamental issues that hold broad relevance and potential to impact a wide range of applications. This paper aims to review these recent advances with a focus on the core ideas and theories that form the foundation of risk research and development.

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Enhancing Employability Skills for the Student Development Program

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Abstract

Employability represents a pivotal element in today's workforce, encapsulating the skills, knowledge, and attributes that are crucial for individuals to acquire and sustain meaningful employment. This paper delves into the employability and skills of MBA graduates, drawing insights from reviewed studies and literature. It highlights the challenges employers face during the hiring process, particularly when selecting MBA degree holders. Employers are increasingly seeking candidates who not only possess quantitative, analytical, and strategic thinking skills but also demonstrate capabilities to manage higher responsibilities effectively. Leadership and management skills emerge as critical components that higher education institutions must foster in their students to meet industry demands. The student development program should encompass activities and projects aimed at enhancing skills in change management, risk management, and human resource management, thereby equipping students with the competencies required for professional success.

Keywords: Skills, Skill Development, Management Students Employability, Competency, Student Development.

1. Introduction

Advanced graduate studies provide an avenue for ongoing professional education, catering to individuals from various industries and academic backgrounds to further develop skills and knowledge pertinent to their professional roles. Theories in educational economics often identify education as a crucial investment in human capital, which can lead to significant economic development and productivity growth (Janer, Deri, Dio, Marbella, & Ricafort, 2015).

The Master of Business Administration (MBA) program specifically aims to enhance the value of its graduates by equipping them with essential managerial and leadership competencies (Baruch, Bell, & Gray, 2005). This enhancement is reflected in improved management skills, increased self-confidence, and various aspects of career development (Baruch & Leeming, 2001). An MBA program should, therefore, focus on academic growth, employment opportunities, and leadership capabilities (Macatangay, 2013).

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EVALUATION AND TESTING OF FIBER- REINFORCED POLYMERIC COMPOSITES THROUGH EXPERIMENTATION

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Abstract

The quest for metal and alloy substitutes has been ongoing for a number of decades in an effort to reduce the high cost of manufacturing, maintenance, and repairs for metal structures harmed by corrosion and repeated use. This sparks curiosity about finding new metal structure substitutes. by developing novel composite materials that maintain their strength, durability, and excellent mechanical properties without sacrificing any of these qualities. Fiber Reinforced Polymers' presence A relatively new class of composite materials called polymeric composite (FRP) is made of reinforcing fibers and a polymeric matrix. Its improved strength, reduced weight, and recyclable nature all at a low cost of production have demonstrated its effectiveness. FRPs' mechanical qualities make them perfect for a wide range of global applications in the building industry and other industries. Plant fibers have drawn a lot of interest lately as an alternative to reinforcements made of synthetic fibers. This is due to the fact that thermoplastics reinforced with natural fibers have a significant chance of replacing traditional inorganic fibers in the future. Furthermore, natural fibers are elements that are found in nature that have cellulose fibrils embedded in a lignin matrix. Researchers' attention has turned from synthetic to natural fiber-reinforced polymer composites due to the special qualities of NFRP, which include low density, low cost, high specific strength, environmental friendliness, and more. The production and testing of natural fiber reinforced polymeric composite's mechanical properties are the main objectives of this project.

Keywords: *FRP, Fibers, Resin, Composite*

1.INTRODUCTION

The most common emerging materials during the past thirty years have been composite materials, polymers, and ceramics. Composite materials have become more widely used and have a greater range of uses. They are aggressively encroaching on new markets. In the market for engineered materials, which ranges from commonplace goods to complex applications, modern composite materials make up a sizeable share. Although the value of composites as materials that reduce weight has previously been established, their cost-effectiveness remains a problem. The composites industry today uses a number

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Shakespeare's Sonnets: A Critical Study

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ABSTRACT

William Shakespeare needs no introduction to scholars of English literature, particularly those interested in poetry. As a sonnet writer, he composed 154 sonnets that have gained immense popularity among readers across the world and through various ages. His sonnets are seen as a continuation of the sonnet tradition that began with Petrarch in 14th-century Italy and was introduced to 16th-century England by Thomas Wyatt. Wyatt's work, along with Henry Howard's establishment of the rhyming meter and division into quatrains, set the stage for the English sonnet. While Shakespeare's sonnets generally adhere to the stylistic conventions of the English sonnet—such as the rhyme scheme, the 14 lines, and the meter—they introduce significant departures in content. These departures often seem to challenge the well-established traditions of the form.

Instead of idealizing an unattainable female love object as seen in the works of Petrarch, Dante, and Philip Sidney, Shakespeare introduces a young man as well as the "Dark Lady," who is decidedly not divine. He explores themes such as lust, homoeroticism, misogyny, infidelity, and acrimony, challenging traditional notions and opening new avenues for the sonnet form. Shakespeare's Sonnets remain among the most fascinating and influential poems in the English language.

KEYWORDS

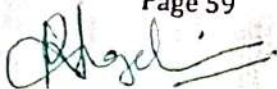
Shakespearean sonnets, Italian model, theme of love, compensation and separation, Wyatt and Surrey's style, Youth-hood

INTRODUCTION

English poetry has been significantly influenced by Italian poetry. Italian poets such as Petrarch, Dante, Tasso, Ariosto, Michelangelo, and Colonna cultivated high-quality poetry, including the Petrarchan sonnet—a 14-line poem with an octave (rhyming abba abba) and a sestet (with various rhyme schemes). The octave introduces the subject, while the sestet provides a resolution. Petrarchan sonnets feature a "turn" (volte) at the end of the octave, which English sonneteers did not follow, opting instead for varied sestet rhyme schemes. While Petrarchan

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BASIC PROPERTIES OF n - INNER PRODUCT SPACE

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ABSTRACT

In this paper we discuss certain fundamental properties of n -inner product space via an n – normed linear space.

Keywords: n -inner product, n -inner product space, n -normed product space.

Introduction:1.1

This paper is dealt with some properties of an n – inner product space $n \geq 2$. Also we establish the explicit forms of n – inner product space via an n – normed linear space. Some inter related results among n – normed linear space and n – inner product space also shown here.

Definition:1.2

Let " n " be a positive integer and X be a vector space of dimension $d \geq n$ (d may be infinite) over the field of real numbers R . A real valued function $\langle \cdot, \cdot | \cdot, \dots, \cdot \rangle$ is defined on $X \times X \times \dots \times X = X^{n+1}$ satisfying the following conditions

(I1) $\langle x_1, x_1 | x_2, \dots, x_n \rangle \geq 0$ for any $x_1, x_2, \dots, x_n \in X$ and

$\langle x_1, x_1 | x_2, \dots, x_n \rangle = 0$ if and only if x_1, x_2, \dots, x_n are linearly dependent vectors.

(I2) $\langle x_1, x_1 | x_2, \dots, x_n \rangle = \langle x_{i_1}, x_{i_1} | x_{i_2}, \dots, x_{i_n} \rangle$ for every permutation

(i_1, i_2, \dots, i_n) of $(1, 2, \dots, n)$

(I3) $\langle x, y | x_2, \dots, x_n \rangle = \langle y, x | x_2, \dots, x_n \rangle \forall x, y, x_2, \dots, x_n \in X$


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Improved Synthesis of Copper (II) And Silver (I) Complexes with Cefuroxime: Mechanochemical Study On Cephalosporin-Resistant Bacteria

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ABSTRACT

Complexation is a pivotal technique in drug development, offering significant modifications to the pharmacological, toxicological, and physico-chemical properties of drugs. This study focuses on the mechanochemical synthesis of Copper (II) and Silver (I) complexes with cefuroxime, utilizing a solvent-free approach. The synthesized complexes were characterized using various physico-chemical methods, including infrared spectroscopy (IR), UV/Visible spectroscopy, elemental analysis, melting point determination, solubility tests, and conductivity measurements. The proposed molecular formulas for the synthesized complexes are $[\text{Cu}(\text{CFU})_2\text{H}_2\text{O}]$ and $[\text{Ag}(\text{CFU})\text{NO}_3]$, where CFU denotes cefuroxime. The characterization results indicate that these complexes exhibit enhanced antimicrobial activity compared to the free ligand. The IR spectral data reveal coordination of cefuroxime to the metal ions through the carboxyl group ($\nu(\text{COO})$), carbonyl group ($\nu(\text{C=O})$), and the oxygen atom of a water molecule. Notably, the melting points, color, and electronic spectra of the complexes differ from those of the free ligand, confirming the formation of new coordination compounds. The study highlights the potential of these metal complexes as effective agents against cephalosporin-resistant bacterial strains, underscoring the advantages of mechanochemical synthesis in pharmaceutical applications.

Keywords: Antibiotic resistance, Cephalosporin, Silver, Copper, Mechanochemical synthesis

1. Introduction

The treatment of infectious diseases presents an ongoing and complex challenge due to factors such as emerging pathogens and the rising prevalence of multi-drug resistant microbial strains. Despite the extensive arsenal of antibiotics and chemotherapeutics



Identification of Structure Activity Relation of A Synthetic Drug 2,6-Pyridine Dicarbonitrile Using Experimental And Theoretical Investigation

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Abstract

The structural activity relationship of the compound 2,6-pyridinedicarbonitrile has been analyzed by using structural and bonding investigation. The optimized molecular structure of (26PDC) molecule was computed by gradient corrected density functional theory (DFT) method with three parameter hybrid functional Becke 3(B3)) for the exchange part and Lee–Yang–Parr (LYP) correlation function level of theory using Gaussian 09 program package with 6-311++G (d,p) basis sets The harmonic vibrational wavenumbers for 2,6PDC have been calculated by using the DFT method at 6-311++G (d,p) level.. The calculated HOMO - LUMO band gap energies confirm that charge transfer occurs within the molecule.

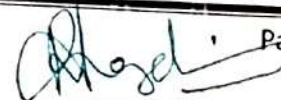
Keywords: DFT, Molecular structure, NBO, HOMO and LUMO

Introduction:

Pyridine is a basic heterocyclic organic compound with the chemical formula C_5H_5N . It is structurally related to benzene, with one methine group ($=CH-$) replaced by a nitrogen atom. Most of the Pyridine derivatives are biologically and pharmacologically important molecules. So, the Pyridine derivatives are widely used in the synthesis of various biologically and pharmacologically active molecules. These not only become the subject of great interest due to their diverse biological and medical activities but also because of their other activities. Some of the pyridine derivatives represent an important group of organic compounds that are used as reagents in analytical chemistry. Some of the other pyridine derivatives view anesthetic properties and are used as medicine for some brain diseases. Additionally, they are known to exhibit biologically active antibacterial, antiviral, antifungal, and antitumor properties. These are widely used as agricultural chemical agents such as herbicides, insecticides and fungicides. They are also widely used as agricultural chemical agents such as herbicides, insecticides and fungicides. In medical applications, these compounds share an important part. Pyridine derivatives target different biological problems by interacting with enzymes, proteins and DNA.

In recent years density functional theory (DFT) has become a powerful tool in the investigation of molecular geometrical structures. The vibrational spectra with density functional theory (DFT) calculation have been used as an effective tool in the functional group analysis of drugs, biological and NLO active materials. The DFT calculations are powerful and very reliable tools for calculating various molecular properties. DFT is a universally useful computational

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DFT STUDIES, STRUCTURAL DETERMINATION, CHEMICAL PROPERTIES AND TOPOLOGICAL ANALYSIS OF 1-ACETYL-2-(4-ETHOXY-3-METHOXYPHENYL) CYCLOPROPANE

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Abstract

In the present study, structural, wave functional, electronic and charge transfer properties of 1 acetyl-2-(4-ethoxy-3-methoxyphenyl) cyclopropane is investigated by making the use of DFT tools Gaussian 09 W, and Gauss View. The optimized geometrical parameters, wave functional properties like reduced density gradient, chemical bonding and electron localization function are reported. The calculated energies of HOMO and LUMO have been found to represent the electron excitation properties. Spectroscopic wave numbers (IR) is investigated computationally and experimentally. The Mulliken and natural atomic charge distribution also were calculated.

Keywords

Mulliken, Gaussian, DFT, NBO, wavefunction.

INTRODUCTION:

Cyclopropane does not occur naturally but derivatives are known in some fatty acids. These cyclopropanes were also used in the medicinal field for general anaesthetics [1]. Cyclopropane itself is mainly of theoretical interest but many of its derivatives are of commercial or biological significance [2]. Acetyl with cystein has been used to cure lung disease [3].

In the past decades, density functional theoretical (DFT) calculation is an effective tool to predict the molecular structure, charge transfer interaction, and inter- and intramolecular hydrogen bonding. Various reports are accessible in the literature concerning the structure and DFT studies [4]. Many reports have commended the success of DFT in comparison to other conventional methods, in computing molecular and chemical properties such as geometries, harmonic frequencies and energies [5]. DFT approach is found to be the best compromise between accuracy and computational cost in comparison to other conventional methods [6].



Convergence In N – Inner Product Space

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Abstract: The concept of convergence in an nnn -inner product space extends the classical understanding of convergence in vector spaces. This study explores the foundational principles underlying nnn -inner product spaces and their associated nnn -normed spaces. It delves into the properties and structures that distinguish nnn -inner product spaces from traditional inner product spaces, emphasizing the unique convergence criteria that arise in these higher-dimensional frameworks. By examining the interplay between nnn -inner products and nnn -norms, the paper contributes to a deeper understanding of the geometric and analytic characteristics of nnn -inner product spaces, paving the way for further research in functional analysis and its applications.

Keywords: nnn -inner product, nnn -inner product space, nnn -normed product space.

1.1 Introduction

The study of convergence in various mathematical structures is a cornerstone of functional analysis, providing essential insights into the behavior of sequences and their limits within these spaces. In particular, nnn -inner product spaces, an extension of the classical inner product spaces, present a rich framework for examining convergence properties in higher-dimensional contexts. These spaces generalize the concept of an inner product by considering multiple vectors simultaneously, which leads to the development of nnn -norms and corresponding notions of convergence.

In this paper, we focus on two critical types of convergence in nnn -inner product spaces: strong convergence and weak convergence. These concepts, well-established in the context of standard



Exploring Themes and Symbolism in C.S. Lewis's 'The Chronicles of Narnia'

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Abstract:

This paper explores the rich thematic and symbolic tapestry woven into C.S. Lewis's cherished fantasy series, "The Chronicles of Narnia." By conducting a close reading and critical analysis of key novels such as "The Lion, the Witch, and the Wardrobe" and "The Magician's Nephew," the study aims to uncover the intricate layers of allegory and Christian symbolism that pervade the narrative. "The Chronicles of Narnia," through its captivating storytelling and richly imagined world, offers a profound exploration of universal themes including morality, redemption, and the journey of self-discovery. Lewis's use of allegory, particularly through the character of Aslan, serves as a powerful representation of Christ-like sacrifice and resurrection, reflecting his deep Christian faith. This paper examines how Lewis integrates these religious elements with a broader moral framework, presenting a narrative that encourages readers to reflect on themes of good versus evil, courage, and forgiveness. In addition to Christian symbolism, the paper analyzes the series' engagement with classical mythological elements and their impact on the story's moral and philosophical underpinnings. The transformation of characters and the symbolism embedded in Narnia's landscapes and magical elements are explored to reveal how they contribute to the narrative's moral lessons and thematic depth. The enduring appeal of "The Chronicles of Narnia" is also discussed, highlighting how its themes resonate with readers across different age groups and cultural backgrounds. By connecting Lewis's imaginative storytelling with broader literary and philosophical discussions, this paper underscores the lasting significance of Narnia as a profound and thought-provoking literary work. Through this comprehensive analysis, the paper aims to demonstrate how Lewis's imaginative world not only entertains but also invites deep reflection on important moral and existential questions, affirming the series' place as a timeless and influential piece of literature.

Keywords: C.S. Lewis, The Chronicles of Narnia, Christian Symbolism, Allegory, Literary Analysis



Navigating Identity and Alienation in Virginia Woolf's Modernistic Landscape

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Abstract:

This paper delves into Virginia Woolf's exploration of identity and alienation in her Modernistic literature. Woolf, a central figure in Modernist literature, profoundly examines the complexities of selfhood and the experience of estrangement within the rapidly changing modern world. The study focuses on three of Woolf's seminal works: *Mrs. Dalloway*, *To the Lighthouse*, and *Orlando*. Through a detailed analysis of these texts, the paper highlights how Woolf's characters grapple with questions of identity, belonging, and alienation. *Mrs. Dalloway* is analyzed for its depiction of internal conflict and the impact of societal expectations on personal identity. *To the Lighthouse* explores the fluidity of selfhood and the influence of time and perception on the characters' sense of self. *Orlando* offers a unique perspective on identity through its exploration of gender and historical transformation. By drawing on literary theory and close textual analysis, the paper illuminates Woolf's innovative narrative techniques, such as stream of consciousness and fragmented narrative structures, which reflect the complexities of identity formation. The study also examines the impact of Woolf's Modernistic approach on the portrayal of alienation, showing how her characters' experiences of estrangement are emblematic of broader societal shifts. This paper aims to contribute to the understanding of Woolf's literature as a nuanced exploration of the self in the context of modernity, shedding light on how her work remains relevant to contemporary discussions of identity and alienation.

Keywords: Virginia Woolf, Modernism, Identity, Alienation, Literary Analysis

Introduction:

Virginia Woolf is widely recognized as a pivotal figure in Modernistic literature, whose innovative narrative techniques and profound thematic explorations have left an indelible mark on literary studies. As a central voice in the Modernist movement, Woolf's works are celebrated for their deep psychological insight and experimentation with narrative form, particularly in their exploration of identity and alienation.

Woolf's literature, characterized by its stream of consciousness technique and fragmented narrative structures, provides a nuanced portrayal of the self and its struggles within the context of early 20th-century modernity. Her novels, such as *Mrs. Dalloway* (1925), *To the Lighthouse* (1927), and *Orlando*



Exploring the Challenges Faced by Women in Bapsi Sidhwa's 'Water'

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Abstract:

This paper delves into the intricate portrayal of women and the myriad challenges they face in Bapsi Sidhwa's novel *Water*. Set in the socio-political landscape of colonial India in 1938, the narrative vividly depicts the harsh realities of widowhood, and the systemic marginalization endured by women. By conducting a close textual analysis, the study explores the intersection of gender, tradition, social stigma, and resistance, unravelling the multifaceted struggles that women confront within a deeply patriarchal and oppressive society. The analysis not only highlights the cultural and religious practices that contribute to their suffering but also examines the subtle acts of defiance that signify their resilience. This exploration provides a nuanced understanding of the ways in which these women navigate their constrained lives, offering critical insights into the broader discourse on gender and social justice.

Keywords: Gender, Patriarchy, Widowhood, Social Stigma, Resistance, Colonial India, Bapsi Sidhwa, Women's Rights, Tradition, Oppression

Introduction:

Bapsi Sidhwa, a renowned Pakistani novelist, is celebrated for her profound exploration of social issues, particularly those affecting women in South Asia. Her novel *Water*, which is an adaptation of Deepa Mehta's film of the same name, provides a poignant portrayal of the lives of widows in colonial India. Set in 1938, during a time of significant political and social upheaval, the narrative offers a critical lens into the rigid and oppressive societal norms that dictated the lives of women, especially widows, who were often relegated to the fringes of society.

The novel is set against the backdrop of Varanasi, one of the oldest cities in India, where religious orthodoxy was deeply entrenched. Widows, according to the prevailing customs, were considered inauspicious and were often subjected to severe austerities, including confinement in ashrams or widow houses. Sidhwa's *Water* vividly brings to life the suffering, exploitation, and dehumanization that these women endured, while also highlighting their silent yet powerful resistance against such injustices.

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A MENTAL HEALTH CHATBOT USING ARTIFICIAL INTELLIGENCE

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Abstract

The project "A Mental Health Chatbot Using Artificial Intelligence" aims to provide accessible and confidential mental health support to individuals using a chatbot powered by artificial intelligence (AI). The chatbot uses natural language processing (NLP) and machine learning algorithms to understand and respond to user queries related to mental health. The project's methodology involves designing and implementing a chatbot system that can simulate conversations with users, providing them with resources, coping strategies, and empathetic responses. The key findings of the project include the successful development and deployment of the chatbot, as well as positive user feedback indicating its effectiveness in providing support and reducing stigma associated with seeking help for mental health issues. Additionally, the chatbot's implementation includes features such as sentiment analysis to better understand user emotions and tailor responses accordingly. The project demonstrates the potential of AI-driven chatbots in enhancing mental health care accessibility and providing personalized support to individuals in need.

Keywords: Artificial Intelligence (AI), Machine Learning Algorithm (ML), Mental health, chatbot

1. Introduction

Mental health is a crucial component of overall well-being, yet it is often overlooked or stigmatized, leading to a lack of access to appropriate support systems. The project "A Mental Health Chatbot Using Artificial Intelligence" addresses this challenge by providing a novel solution for individuals seeking mental health support. The chatbot offers a confidential and easily accessible platform for users to discuss their mental health concerns and receive guidance and support. The objectives of this project extend beyond providing immediate support; they also include destigmatizing mental health issues and encouraging individuals to seek help when needed. By offering a non-judgmental and anonymous space for users to express their feelings and seek advice, the chatbot aims to break down barriers to accessing mental health care. Moreover, the project seeks to empower individuals by providing them with resources and coping strategies to manage their mental health more effectively. At the core of this innovative approach is the utilization of artificial intelligence, specifically natural language processing (NLP) and machine learning algorithms. These technologies



Effect of Partial Replacement of Cement with Silica fume on the Strength of High-Performance Concrete

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Abstract

Maintenance, repair and rehabilitation of existing cement concrete structures involve a lot of problem leading to significant expenditure. In the recent past, there has been considerable attention for improving the properties of concrete with respect to strength and durability, especially in aggressive environments. High performance concrete (HPC) appears to be better choice for a strong and durable structure. Suitable addition of mineral admixtures such as silica fume (SF), ground granulated blastfurnace slag and fly ash in concrete improves the strength and durability of concrete due to considerable improvement in the microstructure of concrete composites, especially at the transition zone. Very few studies have been reported in India on the use of SF for development of HPC and also durability characteristics of these mixes have not been reported. In order to make a quantitative assessment of different cement replacement levels with SF on the strength for M60 grade of HPC trial mixes and to arrive at the maximum levels of replacement of cement with SF, investigations were taken. This paper reports on the performance of HPC trial mixes having different replacement levels of cement with silica fume. The strength of these mixes are compared with the mixes without silica fume. Compressive strengths of 60 MPa at 28 days were obtained by using 20%, 25% and 30% percent replacement of cement with silica fume.

Keywords: High performance concrete (HPC), strength and durability, Silica fume (SF), Replacement of cement, Superplasticizer, water-binder ratio.



Behaviour of Reinforced Concrete Beams with Circular Opening Strengthened by Steel Plates in the Flexural Zone

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Abstract

The objective of this paper is to study the behaviour of R.C beam with circular opening in the flexure zone strengthened with steel plate. In this experiment, four beams using M20 concrete and Fe415 steel were tested. Beam 1 casted as solid control beam and the beam 2 with unstrengthened circular opening of 150mm diameter in the flexure zone. The other two beams were casted with circular opening strengthened by circular steel plates stiffened by 4 and 8 shear connectors. The beams were tested as simple beam with two concentrated load. The test results revealed that the strength of the beams with circular opening strengthened by steel plates was reduced up to 15% compared to the regular beam and the strength is increased up to 70% compared to the unstrengthened beams. Thus, from the tests, it was found that strengthening of beams with circular opening in the flexure zone using steel plates are effective.

Keywords—flexural zone; circular opening; steel plates

1. Introduction

In modern buildings, web openings in the beams occur quite often in practice to provide convenient passage for environmental services. As a result, story heights in buildings can be reduced and slight reduction in concrete beams weight would improve the demand on the supporting frame both under gravity loading and seismic excitation which resulting in major cost savings. These openings may be of different shapes and sizes [4]. Although numerous shapes are possible, circular and rectangular openings are the most common ones. The presence of an opening in the web of a reinforced concrete beam leads to many problems in the beam behaviour such as reduction in the beam stiffness, excessive cracking, excessive deflection and reduction in the beam strength. [7 and 5]

Strengthening of beams provided with openings depends mainly on whether those openings are pre-planned or post-planned. In the case of pre-planned openings, both the upper and lower chords are designed and reinforced to resist the internal forces that they are subjected to two



Enhancing Employability Skills for the Student Development Program

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Abstract

Employability represents a pivotal element in today's workforce, encapsulating the skills, knowledge, and attributes that are crucial for individuals to acquire and sustain meaningful employment. This paper delves into the employability and skills of MBA graduates, drawing insights from reviewed studies and literature. It highlights the challenges employers face during the hiring process, particularly when selecting MBA degree holders. Employers are increasingly seeking candidates who not only possess quantitative, analytical, and strategic thinking skills but also demonstrate capabilities to manage higher responsibilities effectively. Leadership and management skills emerge as critical components that higher education institutions must foster in their students to meet industry demands. The student development program should encompass activities and projects aimed at enhancing skills in change management, risk management, and human resource management, thereby equipping students with the competencies required for professional success.

Keywords: Skills, Skill Development, Management Students Employability, Competency, Student Development.

1. Introduction

Advanced graduate studies provide an avenue for ongoing professional education, catering to individuals from various industries and academic backgrounds to further develop skills and knowledge pertinent to their professional roles. Theories in educational economics often identify education as a crucial investment in human capital, which can lead to significant economic development and productivity growth (Janer, Deri, Dio, Marbella, & Ricafort, 2015).

The Master of Business Administration (MBA) program specifically aims to enhance the value of its graduates by equipping them with essential managerial and leadership competencies (Baruch, Bell, & Gray, 2005). This enhancement is reflected in improved management skills, increased self-confidence, and various aspects of career development (Baruch & Leeming, 2001). An MBA program should, therefore, focus on academic growth, employment opportunities, and leadership capabilities (Macatangay, 2013).

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Exploring Themes and Symbolism in C.S. Lewis's 'The Chronicles of Narnia'

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Keywords: C.S. Lewis, The Chronicles of Narnia, Christian Symbolism, Allegory, Literary Analysis



Exploring the Challenges Faced by Women in Bapsi Sidhwa's 'Water'

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Abstract:

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Keywords: Gender, Patriarchy, Widowhood, Social Stigma, Resistance, Colonial India, Bapsi Sidhwa, Women's Rights, Tradition, Oppression

Introduction:

Bapsi Sidhwa, a renowned Pakistani novelist, is celebrated for her profound exploration of social issues, particularly those affecting women in South Asia. Her novel *Water*, which is an adaptation of Deepa Mehta's film of the same name, provides a poignant portrayal of the lives of widows in colonial India. Set in 1938, during a time of significant political and social upheaval, the narrative offers a critical lens into the rigid and oppressive societal norms that dictated the lives of women, especially widows, who were often relegated to the fringes of society.

The novel is set against the backdrop of Varanasi, one of the oldest cities in India, where religious orthodoxy was deeply entrenched. Widows, according to the prevailing customs, were considered inauspicious and were often subjected to severe austerities, including confinement in ashrams or widow houses. Sidhwa's *Water* vividly brings to life the suffering, exploitation, and dehumanization that these women endured, while also highlighting their silent yet powerful resistance against such injustices.



BASIC PROPERTIES OF n- INNER PRODUCT SPACE

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ABSTRACT

In this paper we discuss certain fundamental properties of n-inner product space via an n – normed linear space.

Keywords: n-inner product, n-inner product space, n-normed product space.

Introduction:1.1

This paper is dealt with some properties of an n – inner product space $n \geq 2$. Also we establish the explicit forms of n – inner product space via an n – normed linear space. Some inter related results among n – normed linear space and n – inner product space also shown here.

Definition:1.2

Let "n" be a positive integer and X be a vector space of dimension $d \geq n$ (d may be infinite) over the field of real numbers R. A real valued function $\langle \cdot, \cdot | \cdot, \dots, \cdot \rangle$ is defined on $X \times X \times \dots \times X = X^{n+1}$ satisfying the following conditions

(I) $\langle x_1, x_1 | x_2, \dots, x_n \rangle \geq 0$ for any $x_1, x_2, \dots, x_n \in X$ and

$\langle x_1, x_1 | x_2, \dots, x_n \rangle = 0$ if and only if x_1, x_2, \dots, x_n are linearly dependent vectors.

(II) $\langle x_1, x_1 | x_2, \dots, x_n \rangle = \langle x_{i_1}, x_{i_1} | x_{i_2}, \dots, x_{i_n} \rangle$ for every permutation

(i_1, i_2, \dots, i_n) of $(1, 2, \dots, n)$

(III) $\langle x, y | x_2, \dots, x_n \rangle = \langle y, x | x_2, \dots, x_n \rangle \forall x, y, x_2, \dots, x_n \in X$



Exploring Themes and Symbolism in C.S. Lewis's 'The Chronicles of Narnia'

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Keywords: C.S. Lewis, The Chronicles of Narnia, Christian Symbolism, Allegory, Literary Analysis



Navigating Identity and Alienation in Virginia Woolf's Modernistic Landscape

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Woolf's literature, characterized by its stream of consciousness technique and fragmented narrative structures, provides a nuanced portrayal of the self and its struggles within the context of early 20th-century modernity. Her novels, such as *Mrs. Dalloway* (1925), *To the Lighthouse* (1927), and *Orlando*

S.M. Siva Mehala et.al.



Exploring the Challenges Faced by Women in Bapsi Sidhwa's 'Water'

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Abstract:

This paper delves into the intricate portrayal of women and the myriad challenges they face in Bapsi Sidhwa's novel *Water*. Set in the socio-political landscape of colonial India in 1938, the narrative vividly depicts the harsh realities of widowhood, and the systemic marginalization endured by women. By conducting a close textual analysis, the study explores the intersection of gender, tradition, social stigma, and resistance, unravelling the multifaceted struggles that women confront within a deeply patriarchal and oppressive society. The analysis not only highlights the cultural and religious practices that contribute to their suffering but also examines the subtle acts of defiance that signify their resilience. This exploration provides a nuanced understanding of the ways in which these women navigate their constrained lives, offering critical insights into the broader discourse on gender and social justice.

Keywords: Gender, Patriarchy, Widowhood, Social Stigma, Resistance, Colonial India, Bapsi Sidhwa, Women's Rights, Tradition, Oppression

Introduction:

Bapsi Sidhwa, a renowned Pakistani novelist, is celebrated for her profound exploration of social issues, particularly those affecting women in South Asia. Her novel *Water*, which is an adaptation of Deepa Mehta's film of the same name, provides a poignant portrayal of the lives of widows in colonial India. Set in 1938, during a time of significant political and social upheaval, the narrative offers a critical lens into the rigid and oppressive societal norms that dictated the lives of women, especially widows, who were often relegated to the fringes of society.

The novel is set against the backdrop of Varanasi, one of the oldest cities in India, where religious orthodoxy was deeply entrenched. Widows, according to the prevailing customs, were considered inauspicious and were often subjected to severe austerities, including confinement in ashrams or widow houses. Sidhwa's *Water* vividly brings to life the suffering, exploitation, and dehumanization that these women endured, while also highlighting their silent yet powerful resistance against such injustices.



A MENTAL HEALTH CHATBOT USING ARTIFICIAL INTELLIGENCE

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Abstract

The project "A Mental Health Chatbot Using Artificial Intelligence" aims to provide accessible and confidential mental health support to individuals using a chatbot powered by artificial intelligence (AI). The chatbot uses natural language processing (NLP) and machine learning algorithms to understand and respond to user queries related to mental health. The project's methodology involves designing and implementing a chatbot system that can simulate conversations with users, providing them with resources, coping strategies, and empathetic responses. The key findings of the project include the successful development and deployment of the chatbot, as well as positive user feedback indicating its effectiveness in providing support and reducing stigma associated with seeking help for mental health issues. Additionally, the chatbot's implementation includes features such as sentiment analysis to better understand user emotions and tailor responses accordingly. The project demonstrates the potential of AI-driven chatbots in enhancing mental health care accessibility and providing personalized support to individuals in need.

Keywords: Artificial Intelligence (AI), Machine Learning Algorithm (ML), Mental health, chatbot

1. Introduction

Mental health is a crucial component of overall well-being, yet it is often overlooked or stigmatized, leading to a lack of access to appropriate support systems. The project "A Mental Health Chatbot Using Artificial Intelligence" addresses this challenge by providing a novel solution for individuals seeking mental health support. The chatbot offers a confidential and easily accessible platform for users to discuss their mental health concerns and receive guidance and support. The objectives of this project extend beyond providing immediate support; they also include destigmatizing mental health issues and encouraging individuals to seek help when needed. By offering a non-judgmental and anonymous space for users to express their feelings and seek advice, the chatbot aims to break down barriers to accessing mental health care. Moreover, the project seeks to empower individuals by providing them with resources and coping strategies to manage their mental health more effectively. At the core of this innovative approach is the utilization of artificial intelligence, specifically natural language processing (NLP) and machine learning algorithms. These technologies

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RESEARCH ARTICLE | JANUARY 06 2022

Preface: International Conference on Advances in Materials, Computing and Communication Technologies (ICAMCCT 2021)

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<https://doi.org/10.1063/1.50006410>

Article PDF first page preview

Preface: International Conference on Advances in Materials, Computing and Communication Technologies (ICAMCCT 2021)

The International Conference on Advances in Materials, Computing and Communication Technologies (ICAMCCT 2021) is the premier forum for the presentation of new advances and research results in the fields of Materials, Computing, Communication Technologies and Environmental Sciences. The conference was successfully organized at Anna Vailankanni College of Engineering, Tamil Nadu, India on July 10, 2021. The primary goal of the conference is to provide the opportunities for academicians, professionals, practitioners and policy maker in the engineering fields to share their thoughts and empirical works both to those involved in their field or those interested in the subject being researched.

The objectives of this conference are:

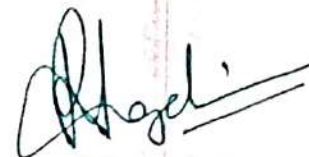
- > To provide a forum for researchers, educators, students and industries to share and exchange ideas and research findings in both fields of researches.
- > To give an opportunity to both academia and industries to communicate on problems faced in current research and the industries.
- > To create networks and stimulate potential collaborations between researchers in the same field of research.

On behalf of the organizing committee of ICAMCCT 2021, we would like to express our warmest welcome for all our participants and speaker for their valuable participation on this conference. Gratitude is also deserved for the Chief Patrons (Dr. D. Peter Jesudhas and Er. P. Praveen Jesudhas), Patrons (Dr. A. Benham and Dr. G. Garwin Kastro), Executive Heads (Mr. D. David Philip Daniel and Mr. B. Mankandan), coordinators, program committee members and reviewers who have invested significant time in analyzing and assessing multiple papers, who hold and maintain a high standard of quality for this conference. Additional thanks given to Dr. V. Balaji (Sacred Heart College, Tirupattur, India), all our editors and AIP publisher team for their warm service to publish this volume of proceeding. Finally, thank you very much and we are looking forward for your next participation on the next conference.

Dr. J. SUNIL
Convener
ICAMCCT 2021

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AN INTEGRATED APPROACH FOR THE CHARACTERIZATION OF GROUNDWATER QUALITY USING MULTIVARIATE STATISTICAL TECHNIQUES AND SPATIAL ANALYSIS

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ABSTRACT. Ground water accessed via wells in areas of Tiruvallur district of the southern Indian state of Tamil Nadu has been a subject to increase sea-water intrusion. The present study highlights the potable water crisis in the northern district evaluated using GIS-assisted determination of water quality parameters across fifty sampling sites. The most informative parameters evaluated within this study were TDS, EC, TH, Na⁺, Mg²⁺, Ca²⁺, Cl⁻ and SO₄²⁻ while parameters such as pH, CO₃²⁻, etc. had limited correlated significance to water quality. The total dissolved solids (TDS) and electrical conductivity (EC) determined in the study area indicated significantly elevated levels across the sampling sites. Weighted arithmetical indexing (WAI) of the water quality parameters indicated 30 out of 50 water sources meet the tolerance limits for both drinking and irrigation. Based on BIS standards, only 13 sites met acceptable limits for safe drinking water. Principal component analysis and piper plot analysis revealed a significant involvement of Mg²⁺, Na⁺, Cl⁻ and SO₄²⁻ in the impairment of water quality, particularly in the coastal zones. Spatial hydro-chemical profiles developed in this study reveal 'hot-spots' of sea-water tainted water sources, and the hydro-chemical dominance of alkali earth components. Altogether, the study findings indicate a widening water crisis on top of over-exploited water resources and discuss possible factors and remedial steps in addressing the situation.


KEY WORDS: Ground water, Principal component analysis, Piper Plot, Water quality index, Irrigation suitability

INTRODUCTION

Incremental exploitation of ground water resources on account of growing human population and activities is further compounded in crisis with a worsening quality of accessible water [1-3]. As observed increasingly across the developing world, over-exploitation of ground water has led to retreating of the water table deeper in the ground; this phenomenon is further associated with increasing content of total dissolved solids in the water, frequently linked to leaching of minerals from lower strata of rocks. In addition to this, surface run-offs from agricultural land, direct input from human activity (construction/industry) also drive TDS in ground water. The ability to sustain human growth and agriculture is directly related to maintenance of acceptable water sources [4]. The growing need and depleting resource for irrigation water is confounded by diminishing water quality in parts of the country and demonstrated in the present study conducted in the northern Tiruvallur district within the southern Indian state of Tamil Nadu. The study area, comprising of five administrative blocks borders the Bay of Bengal on the eastern front. To the north of this territory lies the Pulicat lagoon, which experiences periods of hyper-salinity due to pronounced evaporation and land development [5]. Over the last decade, water quality reports in the region have accentuated a diminished access to usable water in the Minjur block, which contains critical to semi-critical water reserves [6, 7]. While the salinity of the water is discussed, it is unclear how the hydro-geo-chemical patterns impact the local region. The extended disadvantages of using drinking water with elevated levels of TDS and salt is often manifested as gastric disturbances and according to a scientific report, an increase in cardiovascular conditions [8].

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RESEARCH ARTICLE | JANUARY 06 2022

Experimental investigation on the nanomechanical properties of lubricated and non-lubricated AISI 1018 mild steel using nanoindentation technique

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+ Author & Article Information

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<https://doi.org/10.1063/5.0070985>

In this study, AISI 1018 Mild/Low Carbon Steel is used as a metal substrate for investigating the nanoindentation effects at room temperature in the dry and lubricated regimes. The Oliver-Pharr technique is employed to estimate the unloading data of nanoindentation according to the Power law and the peak load (P_{max}) is increased from 0-10000 μN for all the nanoindentation experiments. The Coconut oil and different concentrations of Graphene-Coconut oil nanofluids are used to lubricate the metal substrate and their mechanical properties such as hardness, Young modulus, residual indentation depth, and contributions of elastic as well as plastic parts to total nanoindentation deformation are observed. The mechanism of the change in surface deformation rate of nanofluid lubricated metal substrate is also demonstrated through their indentation hardness AFM micrographs. The results exhibit that the lubrication of metal substrate by 0.1 wt% of Graphene-Coconut oil nanofluid significantly reduces the permanent plastic surface deformations.

Topics

Deformation, Elastic modulus, Alloys, Graphene, Nano-indentation, Nanofluidics



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Experimental investigation on the thermal conductivity and thermal stability of CuO-coconut oil nanofluids

Cite as: AIP Conference Proceedings 2385, 020009 (2022); <https://doi.org/10.1063/5.0070797>
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N. Senniangiri, K. Balaji, M. Elango, et al.



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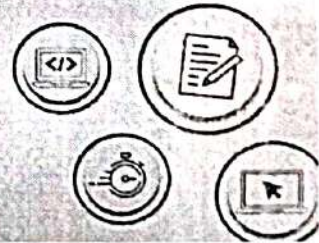
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Improving overall equipment effectiveness in welding robots by using single minute exchange of dies and adding additional positioners and fixtures in bull machines

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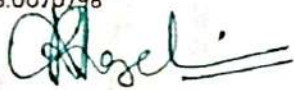


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Investigation on vibrational spectral activity and theoretical computation of an anticancer drug 1-(p-toluenesulfonyl) imidazole

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**IDENTIFICATION OF CALCIUM CARBONATE PRODUCING
NOVEL *Bacillus cereus* KOV15 ISOLATED FROM SOIL
MICROBIAL COMMUNITIES TOWARDS GREENER
CONSTRUCTION MATERIALS**

K. SHANMUGAM, P. ANGELINE, V. PREETHI*

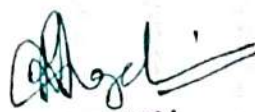
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ABSTRACT

The aim of this study was to focus on screening of ureolytic bacteria from the soils and to evaluate their efficacy in calcium carbonate (CaCO_3) formation in autoclaved soils, as a main application of biocement. Ureolytic bacteria were screened through qualitative observation of colour changes from yellow to magenta colour on Christensen's urea agar plate. Based on the ureolytic assay, 13 strains were selected as urease positive from the total number of 524 isolates. Among these strains, KOV15 strain exhibited the maximum CaCO_3 precipitation within 48 h and its biocement yield was 18.31 g/l. Moreover, biomass of strain KOV15 had the highest substrate hydrolytic activity of 28.75 mM urea per min $1/\text{OD}^{-1}$ when compared to others. Hence, the strain KOV15 was selected and further identified as *Bacillus cereus* KOV15 based on biochemical characterisation and 16S rRNA analysis. Moreover, the *B. cereus* KOV15 optimised with its physiochemical parameters showed maximum urease activity of 5.34, 6.84, 5.55, 4.63 U/ml at 12 h incubation, pH 7, 30°C temperature and 0.3% substrate, respectively. Furthermore, *in vitro* assays of bacterial treated sand column showed an increased compressive strength and had carried over 550 g of weight at 14 days when compared to the control column. Subsequently, biocemented column samples were subjected to X-ray diffraction (XRD) analysis and the spectrum of results exhibited 20 values corresponding to the CaCO_3 crystal. These results suggest that *B. cereus* KOV15 could be regarded as potential bio-factory for biocement production as well as for promoting self-healing in construction.

Keywords: ureolytic bacteria, calcium carbonate precipitation, *Bacillus cereus* KOV15, compressive strength, XRD, biocement.

* For correspondence.


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BACTERIAL FORAGING OPTIMIZATION BASED ON DISEASE RECOGNITION

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Abstract

In this paper the most aim is to grow the plants healthy and safely while not touching any diseases or flora. Here existing system is, affected crops are known by human and medication is additionally given manually. Chemical foods are used for plant growth. therefore on reach this, the planned system here is affected crops is known through image process. reckoning on severity, the drugs quantity is given to the crops victimisation pump motor. India may be a cultivated country and concerning seventieth of the population depends on agriculture. Farmers have massive vary of diversity for choosing varied appropriate crops and finding the appropriate pesticides for plant. Disease on plant ends up in the many reduction in each the standard and amount of agricultural merchandise. The studies of disease check with the studies of visually discernible patterns on the plants. watching of health and malady on plant plays a vital role in in cultivation of crops within the farm. In period, the watching and analysis of plant diseases were done manually by the experience person therein field. needs [this needs] tremendous quantity of labor and conjointly requires excessive time interval. The image process techniques are often utilized in the disease detection. In most of the cases malady symptoms are seen on the leaves, stem and fruit. The plant leaf for the detection of malady is taken into account that shows the malady symptoms. Then relying upon the diseases, the individual medication are often given to the crops through a machine-driven model.

Keywords: CNN Algorithm ,UART Protocol, Preprocessing Technique ,MATLAB Software

1) Introduction

In beholding, a worldwide descriptor is simpler to use as a result of it processes the complete image. and every one the pixels of the image appreciate area unit [the world | the realm] of interest are taken under consideration within the description. If plant diseases aren't discovered in time, food insecurity can increase. Early detection is that the basis for effective bar and management of plant diseases, and that they play a significant role within the management and deciding of agricultural production. In recent years, disease identification has been a vital



Effect of Partial Replacement of Cement with Silica fume on the Strength of High-Performance Concrete

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Abstract

Maintenance, repair and rehabilitation of existing cement concrete structures involve a lot of problem leading to significant expenditure. In the recent past, there has been considerable attention for improving the properties of concrete with respect to strength and durability, especially in aggressive environments. High performance concrete (HPC) appears to be better choice for a strong and durable structure. Suitable addition of mineral admixtures such as silica fume (SF), ground granulated blast furnace slag and fly ash in concrete improves the strength and durability of concrete due to considerable improvement in the microstructure of concrete composites, especially at the transition zone. Very few studies have been reported in India on the use of SF for development of HPC and also durability characteristics of these mixes have not been reported. In order to make a quantitative assessment of different cement replacement levels with SF on the strength for M60 grade of HPC trial mixes and to arrive at the maximum levels of replacement of cement with SF, investigations were taken. This paper reports on the performance of HPC trial mixes having different replacement levels of cement with silica fume. The strength of these mixes are compared with the mixes without silica fume. Compressive strengths of 60 MPa at 28 days were obtained by using 20%, 25% and 30% percent replacement of cement with silica fume.

Keywords: High performance concrete (HPC), strength and durability, Silica fume (SF), Replacement of cement, Superplasticizer, water-binder ratio.



Behaviour of Reinforced Concrete Beams with Circular Opening Strengthened by Steel Plates in the Flexural Zone

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Abstract

The objective of this paper is to study the behaviour of R.C beam with circular opening in the flexure zone strengthened with steel plate. In this experiment, four beams using M20 concrete and Fe415 steel were tested. Beam 1 casted as solid control beam and the beam 2 with unstrengthened circular opening of 150mm diameter in the flexure zone. The other two beams were casted with circular opening strengthened by circular steel plates stiffened by 4 and 8 shear connectors. The beams were tested as simple beam with two concentrated load. The test results revealed that the strength of the beams with circular opening strengthened by steel plates was reduced up to 15% compared to the regular beam and the strength is increased up to 70% compared to the unstrengthened beams. Thus, from the tests, it was found that strengthening of beams with circular opening in the flexure zone using steel plates are effective.

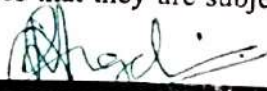
Keywords—flexural zone; circular opening; steel plates

1. Introduction

In modern buildings, web openings in the beams occur quite often in practice to provide convenient passage for environmental services. As a result, story heights in buildings can be reduced and slight reduction in concrete beams weight would improve the demand on the supporting frame both under gravity loading and seismic excitation which resulting in major cost savings. These openings may be of different shapes and sizes [4]. Although numerous shapes are possible, circular and rectangular openings are the most common ones. The presence of an opening in the web of a reinforced concrete beam leads to many problems in the beam behaviour such as reduction in the beam stiffness, excessive cracking, excessive deflection and reduction in the beam strength. [7 and 5]

Strengthening of beams provided with openings depends mainly on whether those openings are pre-planned or post-planned. In the case of pre-planned openings, both the upper and lower chords are designed and reinforced to resist the internal forces that they are subjected to two

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COMPRESSIVE BEHAVIOUR OF RC COLUMNS CONFINED WITH BASALT FIBRE REINFORCED POLYMERS

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Abstract

As a reinforcing agent for the production of lightweight and low-cost polymer composites, there has been a recent increase in the use of environmentally friendly natural fibers around the world. One of the interesting materials that are currently widely used is basalt, which offers inexpensive and excellent glass properties. The outstanding advantages of this composite material include high mechanical physicochemical properties, biodegradability and non-abrasive properties. This article presents the compression behavior of reinforced concrete columns (RCC), limited by basalt, used as reinforcement for composite materials. This paper also explores the basic and structural properties of underlying basalt fibers. It also encompasses efforts to showcase new trends in scientific research publications and activities in the field of basalt fibers. Further sections discuss the height of the RC column (0.9m, 1.2m, 1.5m and 1.8m) and number of plies (single and double plies) investigation is done. Comparatively short RC columns (height = 0.9m) confined with basalt fiber reinforced polymers have higher compressive strength than the other RC columns confined with basalt fiber reinforced polymers for both single and double plies.

Keywords: BFRP; RC column; Strengthening; Confinement; Compressive strength.

Introduction

Many older structures today require strengthening of their existing civil engineering infrastructure. This need arises due to factors such as aging, corrosion from environmental factors, increased stress from functional changes in design, or deficiencies from poor designs that no longer meet modern, stringent requirements, particularly in seismic areas. To withstand higher structural loads or enhance ductility, reinforcement or modernization of old structures has been performed using traditional materials, such

C. Prathhesh, S. Subramania Raja, E. Ida Jebakani


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DETECTING BOTNET TRAFFIC BY USING MACHINE LEARNING

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ABSTRACT

Many cyber security mishaps have been recorded globally in recent years as a result of distributed denial of service assaults. Many of these assaults were carried out via a botnet, which is often made up of hacked computers, cell phones, or IoT devices. This research suggests a machine learning technique for detecting botnet traffic. First, we used Malware Capture Facility Project datasets. The files comprise network traffic data acquired from the target machine's victim. Botnet traffic and regular traffic are both included in the network traffic data. Second, we preprocessed the traffic data and retrieved information such as source and destination addresses, ports, and packet sizes. Third, we used a machine learning system to distinguish between botnet and regular traffic. The botnet detection module is trained using a single huge dataset that includes botnet and regular traffic records. After the trained model has achieved high accuracy, new dataset is loaded into the module for detection. The suggested method can detect botnet traffic with high accuracy.

Keywords: Botnet, Machine Learning, Network, Network Security



Timing System for Bus Entry with Arduino

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Abstract

In today's technologically advanced world, various innovations aim to enhance and simplify daily life. Accurate bus arrival times are crucial for efficient transportation management and passenger convenience. This system leverages image processing to capture and verify bus arrival details. By integrating bus numbers and images with existing data, we utilize Arduino IDE and GSM technology, specifically the SIM808 module, to transmit captured data to a web server. This process ensures that timely notifications are sent to mobile devices regarding bus arrivals. Upon the bus's arrival at the college, it is automatically identified, minimizing the need for manual oversight and optimizing time management. This system reduces the workload of guards and provides precise bus arrival times.

Keywords: Arduino, Bus Arrival Time, Intelligent Transportation System, Machine Learning

1. Introduction

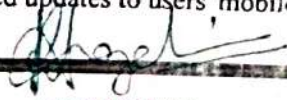
The need for efficient vehicle tracking systems began in the shipping industry, where real-time location data was crucial for managing fleets and ensuring timely operations. As technology has advanced, automated tracking systems have become more sophisticated, extending their use beyond shipping to various forms of transportation, including public buses.

In contemporary urban settings, public transportation systems, such as buses, often face significant challenges in providing accurate arrival times to passengers. This is particularly problematic in campuses or large institutions where precise timing is critical for both operational efficiency and passenger convenience. Traditional bus schedules typically offer estimated arrival times, which can lead to confusion and dissatisfaction among users if the actual arrival times deviate from the estimates.

A real-time bus tracking system addresses these issues by utilizing GPS (Global Positioning System) technology to monitor the precise location of each bus. GPS technology operates through a network of satellites that continuously send signals to GPS receivers installed on buses. These receivers calculate the bus's exact location and relay this information to a central server.

To communicate the bus's location to passengers, the system employs GSM (Global System for Mobile Communications) and SMS (Short Message Service) technologies. GSM provides a reliable network for transmitting data, while SMS allows for the delivery of text-based updates to users' mobile phones.

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A Survey on Sentiment Analysis About COVID-19 Vaccines in Social Media

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Abstract

Sentiment analysis, often referred to as "opinion mining," is a natural language processing (NLP) technique that determines the emotional undertone of a piece of writing. In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic. As of late 2022, COVID-19 continues to be a global health issue. The introduction of COVID-19 vaccines has been crucial in combating the virus. According to the WHO, 50 vaccines have been approved worldwide by at least one country, with 11 receiving Emergency Use Listing (EUL). These include non-replicated viral vectors, inactivated vaccines, protein subunit vaccines, and RNA vaccines. This article reviews several studies that have conducted sentiment analysis on public opinions towards COVID-19 vaccines on social media platforms, particularly Twitter. Tweets reflect a range of emotions including eagerness, dissatisfaction, reservations, and apprehension regarding COVID-19 vaccines. Public opinion on COVID-19 vaccinations has varied significantly over time and across different regions. Research indicates that approximately 83% of people in the Philippines have had positive and enthusiastic sentiments towards vaccination, while negative sentiments were more common in Korea. In India, 78.5% of tweets about the COVID-19 vaccine were neutral or positive. Real-time sentiment analysis can help public health authorities develop localized vaccination education initiatives to address concerns about COVID-19 vaccines.

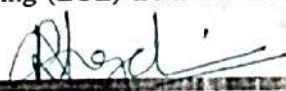
Keywords: Sentiment Analysis, COVID-19 Vaccine, Social Media, NLP, Twitter, Topic Modeling, LDA

1. Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), commonly known as COVID-19 or the new coronavirus, is a highly infectious respiratory infection. Discovered in December 2019 in Wuhan, China, it has since spread globally, affecting millions of people. The virus is primarily transmitted through the coughs and sneezes of infected individuals, but it can also be contracted by touching contaminated surfaces and then touching the eyes, nose, or mouth. In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic, and it remains an ongoing issue as of late 2022.

Vaccines have been developed and distributed globally to prevent the spread of COVID-19. These vaccines represent a critical tool in the fight against the virus. As of the latest updates, 50 vaccines have been approved worldwide, with 11 receiving Emergency Use Listing (EUL) from the WHO. These include various types such as:

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NEAREST NEIGHBOUR BASED FUNGAL DISEASE DETECTION APPROACH IN LEAF IMAGES

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ABSTRACT

The study of image processing techniques used to identify and classify fungal disease symptoms affected on different agriculture/horticulture crops. The plant disease diagnosis is limited by the human visual capabilities because most of the first symptoms are microscopic. As plant health monitoring is still carried out by humans due to the visual nature of the plant monitoring task, computer vision techniques seem to be well adapted. One of the areas considered here is the processing of images of disease affected agriculture/horticulture crops. The quantity and quality of plant products gets reduced by plant diseases. The goal is to detect, to identify, and to accurately quantify the first symptoms of diseases. Plant diseases are caused by bacteria, fungi, virus, nematodes, etc., of which fungi is the main disease causing organism. Focus has been done on the early detection of fungal disease based on the symptoms. In existing, to detect the diseases they used the spectroscopic techniques. These techniques are very expensive and can only be utilized by trained persons only.

1. INTRODUCTION

1.1 DIGITAL IMAGING

Digital imaging is a method of improving visibility of objects in a dark environment by detecting the objects' infrared radiation and creating an image based on that information. Digital imaging, near-infrared illumination, low-light imaging and are the three most commonly used night vision technologies. Unlike the other two methods, thermal imaging works in environments without any ambient light. Like near-infrared illumination, thermal imaging can penetrate obscurants such as smoke, fog and haze. Thermal images are normally gray scale in nature black objects are cold, white objects are hot and the depth of gray indicates variations between the two. Some thermal cameras, however, add colour to images to help users identify objects at different temperatures.

1.2 IMAGE PROCESSING

Improve digital image processing routines in the application of thermal image processing. Develop special image processing approaches based on the features of thermal images. Thermal Image processing is any form of signal processing for which the input is thermal image, such as a photograph or video frame; the output of image processing may be either an image or a set of characteristics or parameters related to the image.



To Enhance the Performance of the WSN Using Software Defined Network and Gaussian Filter

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ABSTRACT


In this paper, we analyze the effectiveness of Software Defined Network (SDN) control in Wireless Sensor Networks (WSN) to estimate packet flow, utilizing a Gaussian filter to filter the transmitted signal. A Wireless Sensor Network is a wireless network consisting of independent sensors that communicate with each other in a distributed fashion to monitor the environment. Sensors are typically attached to microcontrollers and powered by batteries. The goal of a Wireless Sensor Network is to achieve a long lifetime and high reliability with maximum coverage. The practical aim of this method is to predict the next step of packet flow in advance, helping to reduce congestion if it occurs. The proposed method (SDN-WSN with Gaussian filter) enhances signal transmission, thereby reducing data errors and network congestion, which further minimizes data overflow. In the proposed method, nodes are first distributed randomly, then K-means clustering is applied to select the optimal position of the head cluster node, and finally, the network is connected using the LEACH protocol. Routing techniques are crucial for networks with limited resources. LEACH is one of the first hierarchical routing approaches for sensor networks. The Wireless Sensor Network (WSN) plays an important role in the Cell-LEACH based approach, where WSN refers to Wireless Sensor Network. In such a network, which has a large number of nodes and sensors, Software Defined Network with a Gaussian filter is proposed to control the network and minimize data errors. This is achieved by adding buffer memory to each node to store data. The data transmission process is controlled by SDN, and a Gaussian filter is applied before transmitting data to minimize errors.

Keywords: Wireless Sensor Network, Network Lifetime, LEACH, Cell-LEACH.

INTRODUCTION

WSN is a network composed of numerous sensor nodes, which are highly deployed in specific areas. The base station determines the data sensed and sends it to the committed nodes, which

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TO OPTIMIZING ENERGY UTILITY USING CELL-LEACH PROTOCOL IN WIRELESS SENSOR NETWORK

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ABSTRACT

In this paper, we analyse the effectiveness of Cell-LEACH protocol in optimizing energy-constrained wireless sensor networks. Wireless sensor network consisting of independent sensor, communicating with each other in distributed fashion in order to monitor the environment. Sensors are attached to microcontroller and are powered by battery. The aim of Wireless sensor network is to have high reliability and long life time with maximum coverage. Routing techniques, which are the most important issue for networks where resources are limited. LEACH is one of the first hierarchical routing approaches for wireless sensor networks. Wireless Sensor Network (WSN) originates an important role in the Cell-Leach based approach where WSN is known for Wireless Sensor Network. In a WSN, which has a large number of nodes and many number of sensors connected to each node. In a WSN, which integrates various circuits, several computing embedded systems, many sensors, distributes large wireless communication, certain modern networks, gives out technological acquisition and allocates more information processors. Wireless sensor networks have powered battery sensor nodes and they are used for transmitting information over the environment monitors. At this point energy efficiency is an important problem in numerous WSN. Consequently, in various routing techniques have progressed such as to improve lifespan of the network, to achieve greatest scalability and also to increase the highest reliability. On other side, WSN uses a common hierarchical clustering protocol called LEACH and it initiates a standard algorithm. The proposed algorithm used is Cell- LEACH and which is elaborated as Cell Low Energy Adaptive Clustering Hierarchy. Numerous sensors are built-in with each of the cell-heads. In this formation no recalling and re-clustering is done. Here, the cell head sends all data at a specific time by TDM. In this, Cell head performs aggregation of data and sends the processed data to cluster heads while it executes similar function and transfers data to base stations while it executes similar function and transfers data to base station.



SKIN CANCER DETECTION USING COMBINED DECISION OF DEEP LEARNERS

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Abstract

Cancer, characterized by the uncontrolled growth of cells, remains a leading public health challenge with a significant mortality rate. Skin cancer, one of the most prevalent forms, originates in the upper layer of the skin. Historically, machine learning techniques have been employed for skin cancer detection using protein sequences and various imaging modalities. However, these methods often rely on manually engineered features, which can be labor-intensive and time-consuming. Deep learning offers a solution by automating feature extraction, thus addressing some limitations of traditional machine learning approaches. In this study, convolutional neural networks (CNNs) are utilized for skin cancer detection using the ISIC public dataset. Given the critical nature of accurate cancer detection, relying on a single model may not always yield the best results. To improve accuracy, this research employs ensemble learning, which combines multiple models to enhance predictive performance. Specifically, an ensemble of deep learning models—VGG, CapsNet, and ResNet—has been developed to detect skin cancer. The experimental results demonstrate that the ensemble approach significantly outperforms individual models in terms of sensitivity, accuracy, specificity, F-score, and precision. These findings suggest that ensemble deep learning techniques could be effectively applied to other disease detection scenarios.

Keywords: Deep Learning, VGG, CapsNet, ResNet, Skin Cancer



Risk Assessment in Business

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Abstract

Risk assessment and management have been recognized as a scientific discipline for approximately 30–40 years. The foundational principles and methods for conceptualizing, assessing, and managing risk were developed during this period and continue to underpin the field today. Despite this, significant advancements have been made in both theoretical frameworks and practical models. This paper reviews these advancements with a focus on the core concepts and ideas driving the evolution of risk assessment and management. It explores trends in perspectives and approaches, and reflects on areas where further development is necessary and should be promoted. This review is intended for a broad audience, including those without specialized expertise in risk management.

Keywords: Risk assessment, Risk management, Foundational issues, Review

1. Introduction

The concept of risk and risk assessments has a deep historical context. Over 2400 years ago, the Athenians demonstrated their capacity to assess risk before making critical decisions (Bernstein, 1996). However, risk assessment and management as a formal scientific field is relatively young, emerging only within the past 30–40 years. During this time, the first scientific journals, papers, and conferences addressing fundamental ideas and principles on risk assessment and management were established.

These foundational ideas and principles still underpin the field today, serving as the building blocks for the risk assessment and management practices that have evolved since the 1970s and 1980s. Despite this, the field has undergone significant development. More sophisticated analytical methods and techniques have been introduced, and risk analysis is now employed across various societal sectors. For example, the Society for Risk Analysis (www.sra.org) features specialty groups focusing on diverse areas such as Dose Response, Ecological Risk Assessment, Emerging Nanoscale Materials, Engineering and Infrastructure, Exposure Assessment, Microbial Risk Analysis, Occupational Health and Safety, Risk Policy and Law, and Security and Defense.

Recent advances in the field have also addressed fundamental issues that hold broad relevance and potential to impact a wide range of applications. This paper aims to review these recent advances with a focus on the core ideas and theories that form the foundation of risk research and development.



Enhancing Employability Skills for the Student Development Program

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Abstract

Employability represents a pivotal element in today's workforce, encapsulating the skills, knowledge, and attributes that are crucial for individuals to acquire and sustain meaningful employment. This paper delves into the employability and skills of MBA graduates, drawing insights from reviewed studies and literature. It highlights the challenges employers face during the hiring process, particularly when selecting MBA degree holders. Employers are increasingly seeking candidates who not only possess quantitative, analytical, and strategic thinking skills but also demonstrate capabilities to manage higher responsibilities effectively. Leadership and management skills emerge as critical components that higher education institutions must foster in their students to meet industry demands. The student development program should encompass activities and projects aimed at enhancing skills in change management, risk management, and human resource management, thereby equipping students with the competencies required for professional success.


Keywords: Skills, Skill Development, Management Students Employability, Competency, Student Development.

1. Introduction

Advanced graduate studies provide an avenue for ongoing professional education, catering to individuals from various industries and academic backgrounds to further develop skills and knowledge pertinent to their professional roles. Theories in educational economics often identify education as a crucial investment in human capital, which can lead to significant economic development and productivity growth (Janer, Deri, Dio, Marbella, & Ricafort, 2015).

The Master of Business Administration (MBA) program specifically aims to enhance the value of its graduates by equipping them with essential managerial and leadership competencies (Baruch, Bell, & Gray, 2005). This enhancement is reflected in improved management skills, increased self-confidence, and various aspects of career development (Baruch & Leeming, 2001). An MBA program should, therefore, focus on academic growth, employment opportunities, and leadership capabilities (Macatangay, 2013).

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RESORCED NATURAL FIBER COMPOSITE'S POTENTIAL ENHANCEMENT

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ABSTRACT

To create and evaluate cost-effective high strength material technologies that might drastically lower the weight of the product without compromising cost, performance, or safety issues, materials innovation and application have become more and more important in recent years. Natural fiber polymeric composites have advanced from basic research conducted at the laboratory scale to commercial use. Thermoplastics, as opposed to thermosets, are taken into consideration in this study due to their many benefits without compromising their traditional values, such as their high impact strength, recyclable nature, environmental friendliness, ease of converting waste into valuable materials, and added benefit of not producing volatiles during processing. A number of biodegradable resins and diverse fibers are examined from the standpoint of the efficient use of natural fiber reinforced plastic (NFRP), and additional comparisons of different fiber properties are made. This paper gives an overall view of different natural fibers its technical comparisons, selection of best binders, coupling agents which suits the fiber and discussed about the development possibilities in the future.

Keywords: *Natural Fiber Reinforced Plastic, Synthetic fibers, Thermoplastic, Thermosetting plastic, Interfacial bonding, Resins, Composites, Elastomers.*

INTRODUCTION

The past several decades have seen a revolution in material science due to advancements in the field of natural fiber-polymeric composites, with particular effects on the automotive, aircraft, marine, manufacturing, and construction industries. The creation of natural fiber materials piques our curiosity because of ecological limitations. It started out as laboratory research and has since been successfully applied in a variety of industrial sectors due to its recyclable nature and environmental friendliness, which pave the way for the introduction of new, inexpensive, light-weight materials with good intrinsic mechanical characteristics. While synthetic fibers such as glass and carbon fibers have a high specific strength and are rarely employed due to their higher manufacturing costs, natural fibers can be used as an alternative to synthetic materials.

JUTE-BASED SANDWICH COMPOSITE: FABRICATION AND VIBRATION TESTING

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ABSTRACT

The search for steel and alloy substitutes has been going on for years in an effort to lower the expensive upkeep and repair of structures that have been harmed by corrosion and severe use. A relatively new type of composite materials, fiber reinforced polymer (FRP) is made of fibers and resins and has shown to be both effective and affordable. The most prevalent method for producing FRP is compression molding. "Electric Die for FRP Composites" is a recently created tool that increases the strength of FRP composites. As the name suggests, heat and pressure are applied simultaneously in an electric die, which generates heat using electrical power. As a result, a stronger FRP composite can be produced. This paper's primary goal is to create a composite material with high shock absorbing capacity at cheaper rate compared to other materials. Vibration testing is conducted for the material.

Keywords: *Sandwich Composites Natural fibres, FRP*

INTRODUCTION

Engineered or naturally occurring materials with two or more constituent materials with significantly different physical or chemical properties that remain separate and distinct at the macroscopic or microscopic scale within the finished structure are known as composite materials, often shortened to composites or composition materials. Natural cellulose fibers encased in a lignin matrix make up wood. Straw and mud were mixed to create bricks, the first man-made composite material used in building construction. The Metropolitan Museum of Art's collection of Egyptian tomb paintings still depicts the ancient brick-making technique. Constituent materials are the discrete materials that make up composites. Constituent materials fall into two categories: reinforcement and matrix. Each type must have at least one piece. The matrix material surrounds and supports the reinforcement materials by maintaining their relative positions. The unique mechanical and physical qualities of the reinforcements are imparted to improve the matrix properties. The large range of matrix and reinforcing elements enables the product or structure designer to select the best combination, while a synergism generates

SISAL-BASED FIBER-REINFORCED COMPOSITE FABRICATION AND TESTING OF ITS MECHANICAL BEHAVIOR

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ABSTRACT

New technologies addressing environmental issues have garnered a great deal of attention lately. The continued availability of natural resources, such as natural fiber reinforced polymeric composite, is pushing the emerging industrial sector to look for and evaluate environmentally friendly materials. In the industry as a whole, the use of composites in manufacturing tools and goods is gaining significant traction. Furthermore, when these materials are examined independently of their constituents, they reveal special qualities. Nonetheless, it is well recognized that caution must be exercised throughout their creation due to the importance of fiber adhesion, the employment of suitable processes, and the composition of each component in determining the product's ultimate mechanical strength. Additionally, one should consider whether the composites are ecologically cordial. In order to improve the mechanical behavior of the specific product, a largely ecological composite was created in this work using sisal, a natural fiber with well-known mechanical qualities, as reinforcement in the dispersion phase of the composite in the polypropylene resin.

Keywords: Natural fibres, FRP, Composites

INTRODUCTION

Gay (1991) states that a composite is made up of many elements, is homogenous under a microscope, and can contain either long or short fibers, which are used in the material's reinforcing phase. The matrix, which serves as an agglutinant and encourages the reinforcement to operate cohesively to support the mechanical load, is another aspect of the composite (Pardini et al., 2006). Only with the development of structural composites were a number of recent technological advances made possible, especially those pertaining to pertinent applications in the fields of aeronautics, aerospace, petrochemical, shipbuilding, bioengineering, automotive, construction, and sporting goods (Levy, 2006). Numerous studies and efforts in the field of composites have been undertaken in the pursuit of sustainability in order to guarantee environmental preservation and offer a better standard of living to the society. Due to the vast range of potential species that may be studied, there is a growing body of study in this field that looks for ways to apply natural resources in the creation of materials. One such application is



Convergence In $N -$ Inner Product Space

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Abstract: The concept of convergence in an nnn -inner product space extends the classical understanding of convergence in vector spaces. This study explores the foundational principles underlying nnn -inner product spaces and their associated nnn -normed spaces. It delves into the properties and structures that distinguish nnn -inner product spaces from traditional inner product spaces, emphasizing the unique convergence criteria that arise in these higher-dimensional frameworks. By examining the interplay between nnn -inner products and nnn -norms, the paper contributes to a deeper understanding of the geometric and analytic characteristics of nnn -inner product spaces, paving the way for further research in functional analysis and its applications.

Keywords: nnn -inner product, nnn -inner product space, nnn -normed product space.

1.1 Introduction

The study of convergence in various mathematical structures is a cornerstone of functional analysis, providing essential insights into the behavior of sequences and their limits within these spaces. In particular, nnn -inner product spaces, an extension of the classical inner product spaces, present a rich framework for examining convergence properties in higher-dimensional contexts. These spaces generalize the concept of an inner product by considering multiple vectors simultaneously, which leads to the development of nnn -norms and corresponding notions of convergence.

In this paper, we focus on two critical types of convergence in nnn -inner product spaces: strong convergence and weak convergence. These concepts, well-established in the context of standard

IMPLEMENTATION OF ROBOTIC-BASED WASTE COLLECTOR AND SEGREGATOR USING IoT

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ABSTRACT

The Seashore Plastic Waste Collection and Recycling System is an innovative solution designed to address coastal plastic pollution. By leveraging IoT technology, ultrasonic sensors, waste sorting mechanisms, and real-time messaging, the system enhances the efficiency of plastic waste collection and recycling along seashores. It utilizes motor-driven conveyors, ultrasonic sensors, motor drivers, an IoT module, and dedicated waste bins to automate the waste management process. This automation reduces manual labor and improves operational efficiency by streamlining the movement of plastic waste from the seashore to waste bins. The IoT module provides real-time data to a centralized control system, while dedicated waste bins facilitate easy transportation for recycling. The system aims to contribute to cleaner coastal environments and promote sustainable waste disposal practices by optimizing recycling efficiency and minimizing the environmental impact of coastal cleanup efforts. Additionally, it effectively segregates plastic waste based on moisture content and material properties.

1. INTRODUCTION

The Seashore Plastic Waste Collection & Recycling System is a comprehensive approach to combating plastic pollution in coastal areas worldwide. It integrates advanced technology with environmental stewardship to efficiently manage plastic waste along coastlines. The system features automated collection mechanisms strategically placed across coastal regions, utilizing sensor-based sorting technology to segregate various types of plastic waste. Designed with sustainability in mind, the system minimizes its environmental footprint while maximizing operational efficiency. Collected plastic waste undergoes rigorous sorting and processing before being transformed into reusable materials at state-of-the-art recycling facilities. Community engagement and public awareness initiatives are essential components of the system. Collaborations with local governments, environmental organizations, and other stakeholders underscore a collective commitment to preserving oceans, safeguarding marine ecosystems, and promoting a cleaner, healthier planet for future generations. The Seashore Plastic Waste Collection & Recycling System exemplifies a unified effort to protect marine environments and ensure a sustainable future.

Existing System

AN EFFICIENT CLOUD SECURITY SYSTEM USING DOUBLE SECRET KEY DECRYPTION TO PREVENT RANSOMWARE ATTACKS

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ABSTRACT

Internet technology is advancing rapidly, enabling users to process, store, and share data with increasing efficiency. Cloud computing leverages shared infrastructure managed either internally or by third parties, where users store their data in encrypted formats. Attribute-Based Encryption (ABE) is a public-key encryption scheme that allows users to encrypt and decrypt data based on specific attributes associated with their identity. Access control for encrypted data in the cloud is enforced using access policies and attributes linked to private keys and ciphertexts. Existing ABE schemes face challenges due to costly decryption operations and complex access policies that scale with the number of attributes. This project addresses these issues by simplifying access policies into a single ciphertext. We use the security model of ABE with verifiable outsourced decryption, providing a verification key at the time of output decryption. Additionally, a user revocation scheme is implemented to address key leakage problems, and this approach is designed for real-time cloud environments. To mitigate the risk of ransomware attacks, we integrate anomaly detection algorithms within the cloud infrastructure. These algorithms continuously monitor user behavior, file access patterns, and system activities to identify suspicious or unauthorized activities indicative of a ransomware attack. Upon detection, the system isolates affected files or systems to prevent further encryption and notifies users and administrators for prompt action.

Keywords: Cloud Service, Attribute-Based Encryption, Ransomware, IoT, Verifiable Outsourced Decryption

1. INTRODUCTION

Cloud computing represents a paradigm shift in the way computing resources are provided and consumed. It involves a large pool of systems connected through private or public networks to deliver dynamically scalable infrastructure for application hosting, data storage, and file management. This technology significantly reduces the cost of computation, application hosting, content storage, and delivery, transforming traditional data centers from capital-intensive setups to variable pricing environments.

AI-Powered Nutrition Analyser for Fitness Enthusiasts

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Abstract

This paper aims to design a comprehensive system for recommending personalized dietary plans and exercise regimes based on an individual's Body Mass Index (BMI) using Support Vector Machine (SVM) algorithms. BMI, a widely accepted measure of body fat based on height and weight, serves as a pivotal indicator in assessing an individual's nutritional status and associated health risks. Leveraging SVM, a robust machine learning technique capable of handling classification and regression tasks, our system endeavors to analyze BMI data alongside other relevant factors to tailor dietary and exercise recommendations that promote optimal health and well-being. The proposed system begins by collecting BMI data from users, along with additional relevant information such as age, gender, medical history, and lifestyle factors. Through feature engineering and preprocessing techniques, the data is prepared for SVM modeling, ensuring accurate and efficient analysis. SVM, known for its ability to identify complex patterns and classify data into distinct categories, is employed to develop predictive models that classify individuals into different BMI categories and recommend appropriate dietary and exercise interventions. Furthermore, the system integrates a nutrition food database containing nutritional information for a wide array of foods, enabling personalized meal planning based on individual dietary preferences, restrictions, and caloric requirements. Concurrently, exercise recommendations are tailored to each user's BMI category, fitness level, and activity preferences, ensuring a holistic approach to health management. The efficacy of the proposed system will be evaluated through rigorous testing and validation procedures, including cross-validation techniques and comparison with existing benchmarks. Ultimately, this project aims to empower individuals to make informed decisions regarding their dietary habits and physical activity levels, thereby promoting healthier lifestyles and reducing the prevalence of obesity-related health issues.

Keywords: Machine Learning, Support Vector Machine, Body Mass Index, Fitness

Fake Profile Detection Based on Machine Learning and Blockchain

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Abstract

The theft of user information through fraudulent profiles is a prevalent issue on social media platforms, significantly impacting users on sites like Facebook, Instagram, LinkedIn, and Twitter. This project presents a machine learning model designed to identify fake profiles. The system utilizes machine learning techniques to train and test predictions on data, employing various classification methods. Python is used for implementing both blockchain technology and machine learning techniques. Blockchain technology is integrated for data security, transport, and storage, with Ethereum being the preferred blockchain type for this project. The Ethereum (ETH) Blockchain Explorer website is utilized to leverage the intrinsic immutability and transparency of blockchain. By creating a decentralized, immutable repository for user profiles, the project ensures data validity and integrity. The combination of blockchain and machine learning offers enhanced security, privacy protection, and resistance to manipulation. Additionally, the approach allows for continuous learning and adaptation to evolving tactics employed by malicious actors.

Keywords: Machine Learning, Blockchain Technology, Artificial Intelligence, Detection, Social Media

Introduction

Platforms for social media like Facebook, Twitter, Instagram, and others have a profound impact on our lives. People from around the world are actively engaged on these platforms. However, these platforms also face the challenge of dealing with false profiles. Fake accounts can be created by individuals, software, or automated systems. This project aims to address this issue by using machine learning algorithms to detect whether data is real or fake, leveraging blockchain technology for enhanced security.

Machine Learning

Machine Learning (ML) is a field of study that enables computers to learn and make decisions without being explicitly programmed. It is a technology that mimics human learning processes by using data and algorithms to improve accuracy over time. ML involves training a model on a dataset and using that trained model to make predictions on new, unseen data.

Types of Machine Learning:

1. **Supervised Learning:** Involves training a model on a labeled dataset, where both input and output parameters are known. The model learns to map inputs to the correct outputs.

DETECTING AVALANCHE VICTIMS EFFICIENTLY IN HARSH CONDITIONS

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Abstract:

Ensuring the safety of miners and other individuals in hazardous environments remains a significant challenge. In this paper, we propose a robust system for detecting avalanche victims using an IoT platform to transmit data. The system is designed to monitor and control various parameters critical for detecting avalanche victims, including light detection, temperature, and humidity conditions. The sensors, integrated into a unified IoT module, continuously upload data to the IoT system for real-time analysis.

In the event of any deviations from normal temperature levels, a buzzer is activated to alert individuals in the vicinity. The microcontroller triggers an alert when predefined threshold conditions are met, sending the information to the monitoring section via the IoT module. The collected data is then displayed on a web page through the IoT system, enabling continuous monitoring and timely response to potential threats.

Keywords: Arduino, Detecting Victims, Transmit Data, IoT Embedded Systems

1. INTRODUCTION

The Internet of Things (IoT) plays a crucial role in enhancing safety in hazardous environments, such as coal mines, where traditional communication systems may fall short. Mining operations, inherently fraught with risks, require innovative solutions to safeguard workers against various dangers. The integration of IoT technologies offers a promising approach to address these safety challenges by deploying advanced devices and systems designed to monitor and respond to potential hazards in real-time.

In mining environments, where communication systems can be expensive and challenging to maintain, IoT solutions provide a cost-effective and reliable alternative. The proposed system utilizes various IoT devices, including collision detectors, gas detectors, and smart helmets, to continuously monitor critical parameters. These devices are designed to detect potential hazards such as collisions, gas leaks, and helmet removal, and to trigger timely alerts to ensure the safety of miners.

Collision Detectors: These sensors are essential for identifying and alerting workers to potential collisions or hazardous impacts within the mine. By integrating collision detection technology, the system can provide immediate warnings to prevent accidents and injuries.

AI MEDICINAL ROBOT: AN IoT INNOVATION FOR HEALTHCARE

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Abstract

In recent years, the integration of Artificial Intelligence (AI) and the Internet of Things (IoT) has revolutionized various sectors, including healthcare. This paper introduces an innovative AI-driven medicinal robot designed to enhance healthcare delivery through IoT technology. The proposed system leverages AI algorithms to perform precise diagnostic and therapeutic functions, while IoT capabilities enable real-time monitoring and communication between the robot and healthcare providers. The AI medicinal robot is equipped with advanced sensors and actuators to facilitate medication administration, patient monitoring, and data collection. By integrating these technologies, the robot aims to improve patient outcomes, reduce medical errors, and streamline healthcare processes. The paper discusses the architecture, functionalities, and potential benefits of the AI medicinal robot, highlighting its role in advancing healthcare through automation and intelligent systems.

Keywords: Artificial Intelligence (AI), Internet of Things (IoT), Medicinal Robot, Healthcare Automation, Real-time Monitoring, Diagnostic Systems, Therapeutic Functions, Patient Monitoring.

I. Introduction

As the global population ages, the demand for healthcare services such as hospitals, retirement homes, and assisted living facilities continues to rise. Smart technology has emerged as a pivotal solution to support older individuals, enabling them to live independently and securely while receiving the care they need. This project focuses on the development of an AI-powered medicinal robot designed specifically for individuals with memory loss. This robot assists patients in adhering to their medication schedules, ensuring timely and accurate administration of medicines. Additionally, it provides essential support such as delivering water with medications and sending notifications to healthcare providers if a dose is missed. The integration of heartbeat sensors and IoT connectivity into this robot further enhances its capabilities, allowing for real-time health monitoring and comprehensive patient care. By incorporating these technologies, the AI medicinal robot aims to improve the quality of life for elderly patients and streamline healthcare processes.

II. Existing System

The convergence of Artificial Intelligence (AI) and the Internet of Things (IoT) has significantly transformed the healthcare industry, leading to innovative solutions such as AI Medicinal Robots. These robots offer a groundbreaking approach to patient care, especially for individuals suffering from memory-related conditions such as amnesia. Amnesia, marked by partial or



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Effects of temperature and particles concentration on the thermal conductivity of graphene-NiO/coconut oil hybrid nanofluids

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ABSTRACT

The present study makes an experimental and theoretical exploration on the thermal conductivity of Graphene/NiO-Coconut oil hybrid nanofluids. The Scanning Electron Microscope (SEM) micrographs are used to characterize the nanomaterials. The Graphene with the average sheet thickness of 1–4 nm and NiO nanomaterials (70:30) are used as an additive for preparing nanofluids. The thermal conductivity of different concentrations of the hybrid nanofluid is studied by KD2-Pro thermal analyzer which measures based on transient hot wire method. The experimental outcomes show that the thickness of nanoparticle-base fluid interface and aggregated path of nanomaterials play a significant role in enhancing thermal conductivity over base fluid.

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1. Introduction

Strong environmental concerns over contamination and pollution of environment have accelerated the necessity for formulating renewable and bio-degradable lubricants. Recently, bio-lubricating agents like sunflower oil, soybean oil, cotton seed oil, rapeseed oil, coconut oil, jojoba oil, corn oil, palm oil and pongamia oil are found as alternative to mineral based lubricating oils as they are less toxic in nature. Bio-lubricants are preferable for all applications to minimize the friction and wear of interacting surfaces which are generally derived from bio-base oils for reducing the dependency on imported petroleum oils.

The unique characteristics of mono-nanofluids attract many researchers to use them to develop innovative thermal and heat transfer systems for different heat transfer as well as mechanical applications. The hybrid nanofluid is formulated by mono-dispersing two or more nanomaterials with the base fluid to concurrently produce superior tribological, thermo-physical and chemical behaviors. They can potentially be utilized for enhancing

the convective heat transfer characteristics of the processes existing in industries like electronics, mechanical etc. Chitra and Kumar (2016) have formulated Water-EG (70:30 ratio) ceramic nanofluids at different weight fractions by utilizing ultrasonication technique and obtained more than 2 months of dispersion stability. They also have observed 75% of thermal conductivity improvement at 0.6 wt % of nanomaterial concentration [1]. Nikkam et al. (2014) have formulated Cu nanofluids through single-step method and observed 3.5%, 6% and 7.2% of thermal conductivity enhancement with 0.4 wt%, 0.8 wt%, and 1.6 wt% of nanomaterials concentration respectively at 200 C. They have concluded that metallic nanofluids are potentially used as coolant in industrial heat transfer applications [2]. Sundar et al. (2014) have observed 29% of thermal conductivity enhancement at 0.3% volume concentration of MWCNT/Fe₃O₄-water hybrid nanofluid [3]. The thermal conductivity of Graphene nanoplatelet/platinum hybrid nanofluid shows an enhancement of 17.77% at 40 °C and 0.1% of weight concentration (Yarmand et al., 2016) [4]. Ranjbarzadeh et al. (2019) have formulated an eco-friendly water/silica nanofluid using two-step method and estimated their thermal conductivity in different temperatures ranging from 25 °C to 55 °C and solid volume fractions of 0.1–3%.

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Design and Development of Unmanned River Water Trash Collector

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ABSTRACT

Water is the most vital source for sustainability of life. River water quality in rapidly urbanizing Asian cities threatens to damage the resource base on which human health, economic growth and poverty reduction all depend. This project emphasis the design and fabrication of unmanned river water surface trash collecting machine. In this project we have fabricated the remote operated river cleaning machine. The main aim of the project is to reduce the man power, time consumption for surface trash collection the river. An automated the operation of river cleaning with help of a motor and chain drive arrangement is developed.

Keywords:- River water; trash collecting machine; water quality; human health.

I. INTRODUCTION

Rivers carry water and nutrients to areas all around the earth. They play a very important part in the water cycle, acting as drainage channels for surface water. Rivers drain nearly 75% of the earth's land surface. Rivers provide excellent habitat and food for many of the earth's organisms. However, river absorbs more than a billion gallons of waste each day, three-quarters of it raw sewage and domestic waste while the rest industrial effluent, making it one of the ten most polluted rivers in the world. Unquestionably clean, healthy rivers reduce human health risk and improved quality of life. Less trash increase recreational activities along rivers-clean and safe walk and run trails for the community.

Water running through a water drainage system mostly carries along waste materials most which are non-biodegradable which not only cause flooding but also climate change. Overflow of water drainage system occurs when there is a blockage of an end of the drainage system forcing the water to find its way elsewhere apart from the mapped out drainage system, therefore the running water spills over the horizontal height of the drainage systems spreading to regions alongside the drainage system, thereby causing problems such as pushing down of structures such as fences, water logging of farm lands and residential building, etc.

The impurities present in water can cause hazardous and disease. As long as the draining system is



Design and Fabrication of Hybrid Power Generator

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ABSTRACT

Nowadays, mostly electricity generation is based on Thermal Power Stations. Thermal Power Stations are consuming more fuel and their availability is decreasing drastically. Due to combustion of fuel, the Exhaust gases from the Thermal Power Plant causes the Ozone as well as pollutes the environment. To overcome the insufficiency of fuel and environmental pollution due to the exhaust emission it is necessary for us to use the Renewable Energy Sources for a better future. Generally the constructing the Solar or Wind Power Plants requires huge area. This necessitates us to build a Hybrid System using Wind and Solar Energy. We are depending on power from Renewable and Non-Renewable energy sources but mostly on non renewable energy sources. But as far as there is a steep increase in population and leak in availability of fuel it is not safe to depend on Non-Renewable energy resources. Hence, our Hybrid Power Generation System will be one of the solutions for this worldwide energy resource crisis.








Keywords: Thermal Power Stations; Environmental pollution, Solar Energy; Hybrid Power Generation

I. INTRODUCTION

Wind energy is one of the most cleanly and reliable source of renewable energy. Bladeless Wind Turbine uses a radically new approach to capturing wind energy. Our device captures the energy of Vorticity, an aerodynamic effect that has plagued structural engineers and architects for ages (vortex shedding effect). As the wind bypasses a fixed structure, its flow changes and generates a cyclical pattern of vortices. Once these forces are strong enough, the fixed structure starts oscillating, may enter into resonance with the lateral forces of the wind, and even collapse. There is a classic academic example of the Tacoma Narrows Bridge, which collapsed three months after its inauguration because of the Vortex shedding effect as well as effects of fluttering and galloping. Instead of avoiding these aerodynamic instabilities our technology maximizes the resulting oscillation and captures that energy. Naturally, the design of such device is completely different from a

Research Article

Flexural Behaviour of RC Beams with a Circular Opening at the Flexural Zone and Shear Zone Strengthened Using Steel Plates

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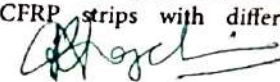
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In this paper, an investigation on the behaviour of RC beams with circular openings in the flexural zone and shear zone strengthened using steel plates is presented. Totally seven beams were cast: a control beam, one beam with a circular opening of size of one-third the depth of the beam (100 mm ϕ) in the flexural zone, one beam with opening strengthened using the steel plate, one beam with a circular opening of size of 100 mm ϕ in the shear zone, one beam with an opening in the shear zone strengthened using the steel plate, one beam with two circular openings of size of 100 mm ϕ in the shear zone, and another beam with two openings in the shear zone strengthened using the steel plate. The experiments were conducted in a loading frame of 400 kN capacity. The beams were subjected to two-point loading. The ultimate load carrying capacity reduced marginally by 1.78% and 2.8% compared to that of the control beam when a circular opening of 100 mm ϕ was provided in the flexural zone and shear zone, respectively, and when the opening was strengthened with steel plates, it reduced by 3.04% and 25%, respectively, but the ductility increased when steel plates were provided. Beams with an opening of size of one-third the depth of the beam (100 mm ϕ) in the flexural zone strengthened with the steel plate can be provided, as the load carrying capacity is only marginally reduced compared to the control beam, and the ductility is more when compared with beams with unstrengthened openings.

1. Introduction

In high-rise framed structures, providing service ducts is necessary for various purposes. If the ducts placed under the beams are covered by a false ceiling, the height of each floor increases, resulting in a considerable increase of the total height. The service ducts are provided through openings in RC beams. As a result, the stiffness decreases, which reduces the load carrying capacity and causes excessive deflection under the service load. Many researchers have studied the strengthening of RC beam with openings which increased the load capacity effectively. In order to enhance the shear capacity and regain the strength of the beams with openings, numerous strengthening techniques were suggested. FRP

can play a key part in reinforcing and strengthening the structures. The reinforced concrete beams with openings can be strengthened by CFRP sheets, GFRP sheets, laminates, rods, fabrics, and so forth with different strengthening schemes. The load carrying capacity of the reinforced concrete beams with openings increases when strengthened externally with CFRP sheets in RC T-section deep beams [1], fibre reinforced polymer sheets in RC beams [2], unidirectional CFRP fabrics in RC T-beams [3], and NSM (near surface mounted) GFRP rods saturated with epoxy in RC self-compacting concrete deep beams [4]. CFRP laminates fully wrapped around the openings in RC beams with large openings [5], CFRP and GFRP sheets both around and inside the opening [6], CFRP strips with different



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Stress-Strain Behaviour of Bacterial Concrete Incorporated With Sugarcane Fibres

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Abstract: Bacterial concrete is one of the methods of rectifying the micro-cracks developed in the structural elements made of concrete. The gram-positive type bacteria *Bacillus subtilis* when acquainted with concrete produces calcite precipitation which heals the micro cracks in the concrete. *Bacillus subtilis* was used with a cell concentration of 106. The optimised percentage replacement of fine aggregates with sugarcane fibres of grain size less than 4.75 mm was 0.1 %. The effect of sugarcane fibres on the durability of bacterial concrete is presented in this paper. To study the Stress -Strain behaviour of Sugarcane based Bacterial concrete (SBC), appropriate analytic SS model is developed that resembles the experimental behaviour of the various samples such as Conventional Concrete (CC), Bacterial Concrete (BC) and SBC. This work mainly targets on utilizing the earlier models and offers a new SS model that can well represent the actual SS behaviour of SBC samples. After finding the SS behaviour of CC, BC and SBC specimens experimentally, equations are developed to characterise axial SS behaviour of CC, BC and SBC samples. From these mathematical equations, theoretical stress for CC, BC and SBC are calculated and compared with test values. The proposed equations have exposed good connection with test values authorizing the mathematical model developed.

Keywords: Bacterial concrete, Stress-Strain curves, Saenz model, *Bacillus Subtilis*.

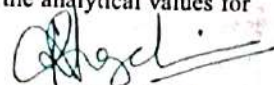
I. Introduction

Concrete is generally used as a building material because it is readily available and cheap. The durability of concrete needs to be checked for many reasons namely the expansion of reinforcement bars, freezing and thawing effects, physical damage, chemical damage and crack formation. Formation of cracks is an inevitable quality of concrete structures. Crack formation in concrete structures is the reason for strength loss. They offer substances such as chlorides, carbon dioxide, oxygen and water to enter into it which leads to corrosion. Healing of cracks is necessary to strengthen the concrete structures and to increase the life span and to serve the purpose for which it is intended. Bacterial concrete is a new invention of crack healing in an environmentally friendly manner without human intervention. The cracks are sealed by biologically produced calcium precipitate. A gram positive, rod shaped with tough protective endospore, *Bacillus subtilis* is used. It can remain viable for decades. In this study, sugarcane fibres are used with bacterial concrete to enhance the biological process of bacteria. Sugarcane fibres increase crack control, ductility and reduce environmental pollution.

For many years, researchers have developed mathematical models for SS relationships to define the nature of concrete in compression. The SS model is a reliable tool to estimate the strength, elongation, contraction and shear behaviour of concrete structural members like beams, columns and slabs. The compressive SS behaviour of concrete is a noteworthy subject in the flexural analysis of RC beams and columns and for exploring the ductility of concrete. The quantity of energy absorbed can also be obtained by calculating the total area under the SS curve.

Figure 1 shows the SS curve of a ductile material. The stress and strain values obtained from the cylinder compressive strength test are plotted here. It is noted from the graph that, the curve does not follow any specific pattern.

Figure 2 shows the SS curve for cement paste and aggregates individually and it is a linear curve. But for concrete, the internal crack formation results in non-linearity of SS curve. After conducting cylinder compressive strength tests for various concrete samples such as CC, BC and SBC, the SS behaviour of each sample was analysed. A mathematical model is suggested to confirm the experimental values against the analytical values for CC, BC and SBC specimens.



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A STUDY ON BACTERIAL CONCRETE WITH SUGARCANE FIBERS FLEXURAL BEHAVIOR

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ABSTRACT

This work estimates the flexural behavior of conventional concrete (CC), bacterial concrete (BC), and bacterial concrete incorporated with sugarcane fibers (SBC) and spotlights the role of sugarcane fibers in the bacterial concrete. The bacteria used in this analysis was *Bacillus subtilis* in liquid form to an optimized value of 1% with a concentration of 10⁶. The sugarcane fibers with the grain size passing through a 4.75mm sieve in replacement of fine aggregates with an optimized value of 0.1% were used. The beams which were cast using conventional, bacterial, and with sugarcane fibers concrete are total 36 numbers for 28, 56, 84, and 112 days respectively. In those beams, different stirrups spacing is adopted as 130mm, 150mm, and 200mm. The concrete grade used for preparing concrete specimens was M25 and the beams were tested as per IS code 516 – 1999. The load at first crack, cracking behavior, cracking pattern, the pattern of deflections, and load at failure were observed and the values are tabulated. It is observed that the flexural behavior of bacterial concrete incorporated with sugarcane fibers was slightly improved compared to bacterial concrete and conventional concrete.

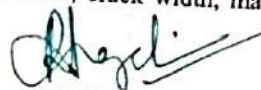
KEYWORDS: Stirrups, *Bacillus Subtilis*, Sugarcane fibers, Crack pattern, Deflections

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1. INTRODUCTION

The beams are loading transferable members from slabs to columns which in turn are transferred to foundations. Crack formation in beams decides the longevity of the other structural members. It is necessary to check the load-deflection characteristics of beams. These beams are categorized into three types. In a beam, the actual neutral axis is less than the critical neutral axis, then those beams are under reinforced beams and steel fails at first. When the actual neutral axis coincides with the critical neutral axis, then those beams are balanced sections and strain in steel and strain in concrete reaches maximum simultaneously. When the maximum strain in the concrete reaches first then those sections are over reinforced sections. The over reinforced sections are not provided to avoid brittle failure [1]. Flexural members are slender members that deform primarily by bending moments caused by concentrated couples or transverse forces. Flexural characterization is the most performed mechanical test on bio-composites after the tensile test. The flexural behavior of beams can be evaluated by conducting many tests [2]. The concrete with various types of fibers can improve the ductility, reduction in crack formation, and toughness.

Therefore, this study plans to compare the flexural behavior of CC, BC, and SBC beams that have almost the same compressive strength. The stirrups spacing's was kept as 130mm, 150mm, and 200mm spacing. The comparison of beams was done in terms of first crack load, maximum load, crack width, maximum deflection,



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Experimental Study on the Durability of Bacterial Concrete Incorporated with Sugarcane Fibres

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Abstract

Bacterial concrete is one of the methods of rectifying the micro-cracks developed in the structural elements made of concrete. The effect of sugarcane fibres on the durability of bacterial concrete is presented in this paper. The gram-positive type bacteria *Bacillus subtilis* was used with cell concentration of 106. The optimized percentage replacement of fine aggregates with sugarcane fibres of grain size less than 4.75 mm was 0.1 %. The qualitative analysis such as Scanning Electron Microscopy (SEM) and X-Ray Diffraction (XRD) Analyses were conducted which provided satisfactory results. Rapid chloride penetration test and Ultrasonic Pulse Velocity Test (UPV) were also performed to predict the durability behaviour of Conventional Concrete (CC), Bacterial Concrete (BC) and Bacterial Concrete with Sugarcane fibres (SBC) at 28 days, 56 days and 84 days. The SBC samples were found with better hydrated form, good homogeneity and less pores due to the formation of CaSiO (C-S-H gel). Ca and Si contents are more for SBC specimens as per the XRD results when compared to the CC and BC which contributed to higher compressive strength of SBC over CC and BC. The chloride ion penetration was less for SBC samples compared to the CC and BC samples. The quality of concrete

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Perceptual Based Color Image Segmentation And Object detection Through A BBO Algorithm Modified With Evolutionary Strategy.

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Abstract -Color image segmentation is one of the challenging problems in image analysis and pattern recognition. It can be treated as a process of dividing a color image into regions with some coherent internal properties and each region is homogeneous. This paper addresses a perceptual based color image segmentation approach using a Biogeography based optimization (BBO) algorithm combined with Evolutionary Strategy (ES), which exploits the structurally challenging objects based on color, texture, edge information and saliency map in the CIE L*a*b color space. The color and texture of each segment does not typically exhibit uniform geometric characteristics in the segmentation of natural scenes. The proposed approach combines knowledge of human perception based on Gestalt law with an understanding of signal characteristics in order to segment natural scenes into perceptually uniform regions. The objects are grouped together without depending on a priori knowledge of the structurally challenging objects. The experimental results show that the proposed method outperformed the current state-of-the-art image segmentation approaches and achieved accurate segmentation quality on natural scene in terms of both qualitative and quantitative assessment.

Keywords – Water Cycle Optimization (BBO), Evolutionary Strategy (ES), Gestalt law, Image Segmentation, CIE L*a*b

I INTRODUCTION

Color image segmentation is an area of great importance in the field of image processing as it is a fundamental task for many applications of computer vision such as image analysis and pattern recognition. Color image segmentation is defined as the process of splitting or separating an image into meaningful object that exhibit similar features with respect to criterion such as color,

texture, gradient [1],[2]. Color images carry much more information than gray ones; hence extracting object from color images is a difficult and challenging task [3]. Color image segmentation has been studied for decades and recently received much attention in image retrieval, video surveillance and object classification [4]. Image segmentation algorithms are generally based on one of two basic properties of the intensity values of the image pixels: discontinuity and similarity. In discontinuity, the methodology is to partition an



MRI Based Brain Tumor Detection Using Spearman Algorithm with Optimized CNN Classifier

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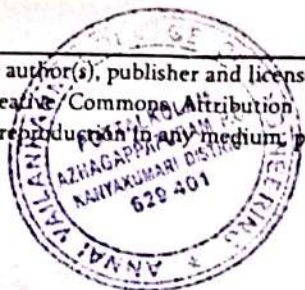
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ABSTRACT

Medical image processing is the most challenging and emerging field now a day. Magnetic Resonance Images (MRI) act as the source for the development of classification system. The extraction, identification and segmentation of infected region from Magnetic Resonance (MR) brain image is significant concern but a dreary and time-consuming task performed by radiologists or clinical experts, and the final classification accuracy depends on their experience only. To overcome these limitations, it is necessary to use computer-aided techniques. To improve the efficiency of classification accuracy and reduce the recognition complexity involves in the medical image segmentation process, we have proposed Spearman based brain tumor segmentation. CNN classifier used to compare the trained and test data, from this we can get the classified result for tumor. The experimental results of proposed technique have been evaluated and validated for classification performance on magnetic resonance brain images, based on accuracy, sensitivity, and specificity. Detection, extraction and classification of tumor from MRI scan images of the brain is done by using MATLAB software.

I. INTRODUCTION

Computer aided image evaluation has pulled in large interest from each signal process and medical researchers because of its ability to surmount the challenges related with the subjective experimentation of microscopic images. Characterization of biomedical images acting as a second reader for quantitative tools, it mitigates the consequences of inter and intra reader variability on diagnosis and complement the option. Decisions can be made in a straight forward manner whereas Computer Assisted Diagnosis (CAD) systems prevent pathologists from wasting their time on



“NexGen AgriCare: Advancing Crop Resilience via Real-Time Disease Detection and IoT-Driven Results for Banana Crop

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I. ABSTRACT:

Banana cultivation is a cornerstone of global agriculture, offering both nutritional sustenance and economic stability to countless communities. However, the industry faces significant challenges, particularly from diseases like Panama Disease, which pose a grave threat to banana crops. In response to this urgent need, we introduce 'NexGen AgriCare,' a revolutionary system designed to enhance crop resilience through real-time disease detection. Our innovative approach integrates cutting-edge technologies, including Internet of Things (IoT) sensors, Google Cloud infrastructure, and sophisticated deep learning models such as the super-resolution convolutional network (SRCNN) and the pretrained MobileNet-V2. By continuously monitoring crucial parameters in banana cultivation, our system ensures the real-time acquisition of data essential for assessing crop health. The validation and training of our model are conducted using the diverse PlantVillage dataset, which encompasses various instances of banana diseases across different environmental conditions, thereby enhancing the adaptability and robustness of our disease detection system. The results of our experiment demonstrate the effectiveness of NexGen AgriCare in achieving precise and timely disease detection, thereby significantly contributing to enhanced crop resilience. The cloud-based architecture of our system not only ensures scalability but also provides farmers with immediate insights for implementing targeted interventions.

II. INTRODUCTION:

“NexGen AgriCare: Advancing Crop Resilience via Real-Time Disease Detection and IoT-Driven Results for Banana Crops” represents a transformative approach to banana cultivation, leveraging the MobileNet architecture for robust disease detection while fostering farmer-system interaction through a dedicated mobile application. By employing MobileNet's cutting-edge mobile vision capabilities and the super-resolution convolutional network (SRCNN), NexGen AgriCare empowers banana growers to quickly and accurately identify signs of diseases in their crops through image analysis of banana leaves. This early disease detection is further complemented by real-time environmental monitoring facilitated by Raspberry Pi-based IoT devices, providing critical data on pH, humidity, temperature, moisture, and light levels. This information is seamlessly integrated into Google Cloud Services, offering comprehensive insights. Additionally, farmers can actively interact with the system via the mobile app, receiving timely alerts, actionable recommendations, and an avenue to report observations.

SMART WALKING STICK FOR BLIND PERSON

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ABSTRACT

This project introduces the design and implementation of a smart walking stick tailored to enhance the mobility and independence of visually impaired individuals. The smart walking stick is equipped with advanced sensors that not only detect obstacles but also measure the distance to these objects using an ultrasonic sensor, thereby providing real-time feedback to the user. Unlike traditional walking sticks, which offer limited assistance in obstacle detection, this innovative device integrates a range of technologies to ensure safer and more comfortable navigation. The hardware system includes components such as an Arduino Uno, IR sensor, ultrasonic sensor, water detection sensor, buzzer, GPS, Bluetooth connectivity, and a fire sensor, collectively offering a comprehensive solution for blind individuals to perform daily tasks with ease and confidence.

Keywords: Arduino Uno, IR Sensor, Ultrasonic Sensor, Water Detection Sensor, Buzzer, GPS, Bluetooth Connectivity, Fire Sensor

INTRODUCTION

Visually impaired individuals face significant challenges in interacting with and perceiving their environment. Their limited ability to connect with their surroundings makes physical movement particularly difficult, as distinguishing locations and navigating from one place to another can be a daunting task. To navigate unfamiliar places, they often rely on the support of a sighted family member or friend. This dependence on others limits their autonomy and contributes to a high unemployment rate among the visually impaired—over half of the legally blind population globally remains unemployed, as their mobility restrictions limit the types of jobs they can perform. As a result, many rely on their families not only for mobility but also for financial support, which further isolates them from social activities and community interaction. Previous systems designed to aid the visually impaired often fell short due to a lack of understanding of non-visual perception. Many of these systems were limited to indoor navigation and lacked features for detecting obstacles or determining location in outdoor environments.

According to World Health Organization (WHO) statistics, approximately 30 million people worldwide are blind. This project proposes the design and development of a portable unit—a smart walking stick—that aims to improve the independence and mobility of visually impaired individuals, particularly in public places. The smart walking stick is integrated with ultrasonic sensors, as well as light and water sensors, to enhance its functionality.

Our proposed system first employs ultrasonic sensors to detect obstacles ahead using ultrasonic waves. When an obstacle is detected, the sensor relays this information to the microcontroller, which processes the data to determine the proximity of the obstacle. If the obstacle is not close, the system remains inactive. However, if the obstacle is nearby, the microcontroller triggers a buzzer to alert the user. Additionally, the system sounds a different buzzer if it detects water,

REAL-TIME BI & ANALYTICS

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ABSTRACT

In today's fast-paced world, traditional business intelligence (BI) that relies on historical data is no longer sufficient. Real-time BI and analytics (RTBI&A) emerge as a powerful solution, enabling organizations to analyze data as it arrives, offering near-instant insights for proactive decision-making. RTBI&A is a game-changer, providing a competitive edge in the data-driven landscape. It equips businesses with the ability to act on insights in real-time, shaping a future of proactive and informed decision-making. RTBI&A prioritizes analyzing data with minimal latency, allowing businesses to react to trends, issues, and opportunities as they unfold. By providing real-time insights, RTBI&A empowers businesses to optimize operations, personalize customer experiences, and mitigate risks proactively. Stream processing engines, in-memory computing, and real-time data visualization techniques are crucial for analyzing and presenting insights from high-velocity data streams. Organizations can leverage RTBI&A to achieve improved operational efficiency, increased productivity, reduced costs, enhanced customer satisfaction, and superior decision-making.

Keywords: Real-time Analytics, Streaming Analytics, Stream Processing.

INTRODUCTION

In the era of big data, where information flows like a raging river, businesses need insights faster than ever. Enter real-time business intelligence (RTBI) and analytics, the dynamic duo that analyzes data as it arrives, providing near-instantaneous knowledge to guide decisions. RTBI and analytics act like a crystal ball, offering a glimpse into the present to make informed choices about the future. By monitoring key metrics like production line efficiency, businesses can identify areas for improvement in real-time. Understanding customer behavior as it happens allows for more personalized interactions, leading to a more satisfying customer experience. Proactively identifying potential issues enables preventive actions to safeguard the business. The magic behind RTBI and analytics lies in its speed, utilizing techniques like streaming data ingestion and real-time processing to analyze massive amounts of data with minimal lag. This enables businesses to react instantly to changing market conditions, customer preferences, and internal operations.

REAL-TIME BI & ANALYTICS TECHNIQUES

Real-time BI and analytics (RTBI&A) leverage a combination of advanced techniques to analyze data with near-zero latency. Below is a breakdown of some key methods:



Fisherman Detection System Using IoT

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ABSTRACT

In Tamil Nadu, fishermen face significant risks while at sea, particularly due to border disputes with Sri Lankan forces. Often, Sri Lankan soldiers detain our fishermen, sometimes leading to loss of life. These incidents occur because of the challenges in identifying sea borders between countries. This paper proposes a solution to improve the safety of fishermen by designing an embedded system using IoT (Internet of Things) and RF Transmitter/Receiver technology. The system monitors the fishermen's positions, comparing them with predefined safety zones and restricted zones. The embedded unit manages the overall system performance and alerts fishermen about their current location via an LCD display. IoT and RF communication units provide information about all sea zones. The system aims to enhance safety by alerting fishermen in advance, notifying their families, and integrating with patrol systems through software. This approach will significantly increase the safety of fishermen's lives.

Keywords: Fisherman, IoT, Embedded Control Unit

1. Introduction


Unmanned border patrol systems, including unmanned aerial vehicles and surveillance towers equipped with wireless cameras, have been used to monitor fishermen who rely on fishing as their primary economic activity. Tamil Nadu has about 18,000 boats fishing along the India-Sri Lanka border. Accidental border crossings often result in encounters with the Lankan navy, leading to loss of lives and economic damage. This paper presents a system designed to mitigate such issues and ensure fishermen's safety. The system uses Global Positioning System (GPS), Global System for Mobile Communication (GSM), and IoT technologies to alert fishermen about border areas before they cross them. This approach aims to reduce the need for extensive human involvement in border monitoring and enhance the protection of fishermen.

2. Literature Survey

A literature survey is crucial before starting a research project, as it provides essential insights into existing methodologies and technologies. This section offers a summary of key literature related to fishermen border alert systems, focusing on technologies and systems that have been explored in this domain.

Recent advancements in unmanned border patrol systems include high-tech devices such as unmanned aerial vehicles and surveillance towers equipped with wireless cameras. These systems are used to monitor fishermen who rely on fishing as their primary economic activity. In Tamil Nadu,

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DFT STUDIES, STRUCTURAL DETERMINATION, CHEMICAL PROPERTIES AND TOPOLOGICAL ANALYSIS OF 1-ACETYL-2-(4-ETHOXY-3-METHOXYPHENYL) CYCLOPROPANE

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Abstract

In the present study, structural, wave functional, electronic and charge transfer properties of 1 acetyl-2-(4-ethoxy-3-methoxyphenyl) cyclopropane is investigated by making the use of DFT tools Gaussian 09 W, and Gauss View. The optimized geometrical parameters, wave functional properties like reduced density gradient, chemical bonding and electron localization function are reported. The calculated energies of HOMO and LUMO have been found to represent the electron excitation properties. Spectroscopic wave numbers (IR) is investigated computationally and experimentally. The Mulliken and natural atomic charge distribution also were calculated.

Keywords

Mulliken, Gaussian, DFT, NBO, wavefunction.

INTRODUCTION:

Cyclopropane does not occur naturally but derivatives are known in some fatty acids. These cyclopropanes were also used in the medicinal field for general anaesthetics [1]. Cyclopropane itself is mainly of theoretical interest but many of its derivatives are of commercial or biological significance [2]. Acetyl with cystein has been used to cure lung disease [3]. In the past decades, density functional theoretical (DFT) calculation is an effective tool to predict the molecular structure, charge transfer interaction, and inter- and intramolecular hydrogen bonding. Various reports are accessible in the literature concerning the structure and DFT studies [4]. Many reports have commended the success of DFT in comparison to other conventional methods, in computing molecular and chemical properties such as geometries, harmonic frequencies and energies [5]. DFT approach is found to be the best compromise between accuracy and computational cost in comparison to other conventional methods [6].



FOOD CONNECT: UTILIZING WEB DEVELOPMENT TECHNOLOGIES TO BUILD A LOGISTICAL NETWORK THAT CONNECT KANIYAKUMARI'S SURPLUS AND DEFICIENT FOOD RESOURCES

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Abstract

The Leftover Food Management System(LFMS)aims to tackle the pervasive issues of food waste by efficiently connecting surplus food donors with recipients in need. The system comprises three module: Donor, Distributor and Receiver .The Donor Module enables individuals or organizations to upload information about available leftover food, including quantity ,expiry date, serving size, and location .Donors can also specify any dietary preferences or restrictions associated with the food .The Distributor module facilitates the organization and distribution of leftover food to recipients Distributor module facilitates the organization and distribution of leftover food to recipients .Distributors have access to information about available food and are responsible for coordinating deliveries to recipients at scheduled dates and times ,employ efficient routing algorithms to optimize distribution routes and ensure timely delivery. The receiver module provides a platform for individuals or organizations in need to browse and accept available leftover food offerings. If a receiver is located far from the food availability site, the system automatically matches them with nearby available food and arranges for distribution. The LFM operates on a distributed model, leveraging technology to bridge the gap between surplus food and those who can benefit from it. By facilitating the efficient redistribution of leftover food,the system not only reduces food waste but also addresses food insecurity in communities.

Keywords: left over food management system(LFMS),food agriculture organization (FAO),multi version concurrency control (MVCC)

1.Introduction

Food waste is a global issue of staggering proportions, with approximately one-third of all food produced for human consumption going to waste each year. Despite this abundance, millions of people around the world suffer from food insecurity, lacking reliable access to nutritious



ASSESSING THE INTEGRITY OF THE SUPPLY CHAIN AND CONFIRMING THE LEGITIMACY OF MEDICINAL HERBS WITH MACHINE LEARNING

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Abstract

Herbal plants are crucial to human existence for medical reasons, and they can also provide free oxygen to the environment. Many herbal plants are rich in therapeutic goods, and it includes the active elements that will benefit future generations. The sustainable sourcing of medicinal plants is crucial for the pharmaceutical and herbal medicine industries. However, the identification and traceability of these plants in the supply chain pose significant challenges. This project proposes an innovative approach that combines machine learning (ML) techniques for medicinal plant detection with supply chain management strategies to ensure transparency, quality, and sustainability. The project focuses on optimizing the entire lifecycle of medicinal plants, from cultivation to distribution, leveraging advanced image processing algorithms. By employing high-resolution imaging techniques, the system aims to enhance plant health monitoring, disease detection, and growth assessment in medicinal plant cultivation. This holistic approach aims to improve the overall efficiency of the medicinal plant industry, promoting sustainability, reducing wastage, and ensuring the delivery of high-quality plant-derived pharmaceuticals to meet growing healthcare demands. The integration of image processing technologies in medicinal plant management presents a transformative solution that aligns with the contemporary emphasis on precision agriculture and sustainable healthcare practices.

Keywords: Machine learning (ML), Image processing, Medicinal plants identification.

1. Introduction

Managing medicinal plants and optimizing their supply chain is crucial for ensuring the availability of high-quality medicinal products. In recent years, there has been a growing interest in leveraging image processing techniques to streamline the management of medicinal plants and enhance the efficiency of their supply chain. By harnessing the power of image processing technology, various aspects of medicinal

Low Velocity Impact, Fatigue and Visco-elastic Behaviour of Carbon/E-glass Intra-ply fibre-Reinforced Nano-silica Toughened Epoxy Composite

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A handwritten signature in black ink, appearing to read "Ajay".

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EXPERIMENTAL STUDY ON ECOFRIENDLY POLYPROPYLENE FIBRE REINFORCED CONCRETE USING FOUNDRY SAND

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ABSTRACT

This paper presents the results of an experimental investigation carried out to evaluate the mechanical properties of ecofriendly concrete with foundry sand and polypropylene fibres in which fine aggregate was partially replaced with foundry sand by weight. M30 grade of concrete was designed using Portland pozzolana cement (PPC) for control concrete. The experimental investigation was carried out with the optimum dosage of 1.00 Kg/m³ of Polypropylene fibres in concrete. The percentage of replacement was 0%, 10%, 20% and 30 % by weight of fine aggregate. The mechanical properties such as compressive strength, split tensile strength and flexural strength were studied. The compressive strength, split tensile strength and flexural strength were determined at 7 days and 28 days. The laboratory results showed that the addition of Polypropylene fibres and foundry sand in concrete increased the compressive strength with partial replacement of waste foundry sand and polypropylene fibres. The split tensile strength increased with increase in percentage of waste foundry sand up to 20%. The combination of waste foundry sand with polypropylene fibres showed a rise in the strength parameters and the highest strength was obtained at 10% replacement in the case of compressive and flexural strengths and it is comparable with conventional concrete.

Keywords: portland pozzolana cement, foundry sand, polypropylene fibres.

INTRODUCTION

Metal foundries use large amounts of sand as a part of the metal casting process. Foundries successfully recycle and reuse the sand many times during the casting process. The problem arising from technological and industrial development is the disposal of waste material. Foundry sand consists primarily of silica sand, with a thin film of burnt carbon, residual binder and dust. Foundry sand can be used as a partial replacement of fine aggregate in concrete. The successful utilization of waste as fine aggregate will turn this waste material into a valuable resource. Making eco-friendly concrete from recycled materials saves energy and conserves resources which lead to a safe sustainable and economical environment. Fibre reinforced concrete can offer a convenient, practical and economical method for overcoming micro cracks. In this study, the effect of using foundry sand as replacement for fine aggregate on ppc concrete with polypropylene fibres on the compressive strength, split tensile strength and flexural strength on M30 is investigated.

Khatib *et al.* [14] investigated the mechanical and fresh properties of concrete containing waste foundry sand (WFS). The workability decreased as the foundry sand content increased. The Compressive strength of concrete also decreased with increasing amounts of Waste foundry sand.

Gurpreet Singh and Siddique [15] performed experimental investigations to evaluate the strength and durability properties of concrete mixtures, in which natural sand was partially replaced with waste foundry sand. Test results obtained showed that, concrete mixtures made with waste foundry sand exhibited higher compressive strength than control concrete. Higher value of split tensile strength was observed at 15% WFS.

Monosi, Sani and Tittarelli [16] investigated the properties of mortars and concretes containing different dosages of used foundry sand (UFS) as partial replacement of sand in both fresh and hardened conditions. It was concluded that UFS reduced the workability when added as replacement for natural sand at the same water cement ratio and higher amount of superplasticizer was required in order to maintain the same workability.

Murahari, and Rao showed that the increase of mechanical properties such as compressive and flexural strength resulting from the addition of polypropylene fibres was relatively high.

Topcu and Canbaz [5] studied the effect of steel and polypropylene fibres on the mechanical properties of concrete containing fly ash. Addition of fibres provided better performance for the concrete while fly ash in the mixture adjusted the workability and the strength-loss caused by fibres and improved the strength gain.

Research Significance

The effect of adding polypropylene fibres and partially replacing the fine aggregate with waste foundry sand on the mechanical properties of concrete has been studied. The purpose of this research is to study the effect of adding polypropylene fibres on the compressive strength by flexural strength and split tensile strength by partially replacing the fine aggregate with waste foundry sand in ppc concrete.

MATERIALS AND METHODS

Waste foundry sand

Waste Foundry sand is a waste material generated from ferrous and non-ferrous metal casting industries. About 3/4 of the total by product consists of sand. Foundries recycle and reuse the sand many times and this causes

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A Study on the Behaviour of Bacterial Concrete Strengthened With Sugar Cane Fibers

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Abstract

Most of the failure of concrete elements are due to cracks of width less than 5mm. Bacterial concrete is one of the methods of rectifying the micro-cracks developed in the structural elements made of concrete. As the bacteria heals the cracks in its natural, eco-friendly way, in order to enhance the healing process and to feed the bacteria for its effective work, sugarcane fibers are added to the bacterial concrete. The effectiveness of bacteria is enhanced with the presence of sugar. But at the same time, higher percentage of sugar will increase the temperature during hydration. Therefore, squeezed sugarcane fibers having lesser percentage of sweetness are used which enhance the healing process of bacteria. In this paper, the overall behaviors of concrete with respect to strength and durability of concrete using *Bacillus subtilis* and sugarcane fibers are experimentally investigated and compared with conventional concrete. The study focuses on the compressive strength and the tensile strength of the bacterial concrete containing different cell concentrations of *Bacillus subtilis* (both in powder form and liquid form) with replacement of fine aggregate using 0.1% and 0.5% of sugarcane fibers (passing through 4.75mm sieve). Both conventional concrete and bacterial concrete with sugarcane fiber cubes and cylinders were tested at 7 and 28 days

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APPLICATION OF NEURAL NETWORK FOR PREDICTION OF COMPRESSIVE STRENGTH OF SILICA FUME CONCRETE

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ABSTRACT

Use of silica fume as mineral admixture has become more common these days for production of silica fume concrete. The extent of replacement has been different depending upon the exposure and prevailing conditions of the project and most of the silica fume concrete are tailor made. In this work, an exhaustive study was done experimentally optimizing the replacement extent of cement with silica fume. From more than 150 results from the study, this paper aims in predicting compressive strength of silica fume concrete using Artificial Neural network (ANN). The constituent materials added for production of concrete are taken as inputs. There are five different parameters: weight of cement, silica fume, fine aggregate, coarse aggregate and water in kgs that are considered in this prediction analysis. ANN is an effective tool in predicting the output if the training is done with proven sets of data. In this work, a portion of experimental data was used in the training phase of ANN. The compressive strength was fed as the target. The ANN was trained with the experimental data till the Mean Square Error (MSE) was consistent. After the training, few unknown sets were given as inputs to the ANN and the simulations were carried out. The compressive strength was predicted and the values were close to the experimental results. Hence we conclude that ANN can be used to predict the compressive strength for various values of input instead of conducting experiments.

Artificial Neural Network and Particle Swarm Optimization in Orange Identification

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Abstract - Advancement in technology has lead to the use of computer science and it's associated technology in agriculture and food science. Fruit industry contributes a major part in the growth of a nation. Identifying foods that looks similar is of major concern. And also, the rise in labour costs, shortage of efficient labourers and the need to improve the processes at the production side have all put pressure on producers and processors to demand for a time-saving, economic, consistent and non-destructive inspection method. In such scenarios, automation can reduce the costs while increasing the production efficiency. Automatic fruit grading and sorting requires the implementation of computer vision systems. Hybrid approaches that consists of artificial neural networks and meta-heuristic algorithms can provide satisfying solutions to these problems. This can provide fast and accurate ways in classifying fruits. This paper deals with the use of artificial neural networks and Particle Swarm Optimization (ANN-PSO) in identifying orange varieties.

Key Words: Artificial Neural Network (ANN), Metaheuristics, Artificial Neurons, Particle Swarm Optimization, Nature inspired metaheuristics.

1. INTRODUCTION

Fruits play vital part in a balanced diet. They are said to be good sources of minerals and vitamins and for their role in preventing related deficiencies. People those who have the habit of eating fruits as part of their daily diet are generally less prone to chronic diseases. Fruits provide many essential nutrients including fibre, potassium, folate and vitamin C. The nutrients in fruit are vital for maintaining the health of one's body. Oranges are relatively hard to classify when compared with other fruit varieties. Here, we mainly consider three types of oranges namely Bam, Pavyandi and Thomson.

The use of Computer Vision Systems in the field of agriculture has increased substantially in the recent years for the substantial information it provides about the nature and attributes of the produce while reducing costs and guaranteeing the maintenance of quality standards in real time. Computer vision is a new technology which acquires an image of a scene and analyses it using computers in order to control machines or to process it. It makes use of the chromatic (colour) and geometric (shape, size, texture)

attributes that are present on the image to predict the outcome.

The tasks involved in Computer vision are the methods to acquire, process, analyze and understand the digital images, and to extract high-dimensional data from those images so as to produce the decision in either numerical or symbolic forms. Artificial systems have been designed to act based on the science of computer vision which extracts information from images. The image data that can be used to extract the necessary information can be of many forms, such as sequence of video, multiple camera views from various angles or data from medical scanners that are usually multi-dimensional.

Computer vision along with artificial neural networks is used to identify the type or category to which the given image of orange belongs to.

2. LITERATURE SURVEY

Yudong Zhang and his associates have combined fitness-scaled chaotic artificial bee colony (FSCABC) algorithm[7] and feed forward neural network (FNN) which is a hybrid method to classify objects. The acquired images were processed for background removal and to obtain various features to create feature space. Since, the obtained feature space is large principal component analysis was performed to reduce the dimensions of the feature space. And then, these were fed to the FNN. The FSCABC algorithm was used to train the weights of the neural network. This method proved to acquire higher classification efficiency than other genetic algorithms.

Yudong Zhang and his associates proposed another novel fruit-classification system, with the goal of recognizing fruits in a more efficient way. It employs four-step pre-processing before the extraction of various geometric and chromatic attributes. Principal component analysis was utilized in the decrease of the quantity of features. Feed-forward neural network (FNN) and Biogeography-based optimization (BBO) [8] had been utilized to group the fruits from the diminished features. This technique had higher productivity in both precision and calculation time.


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STUDY OF PORE STRUCTURE OF SILICA FUME CONCRETE FOR OPTIMUM REPLACEMENT

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ABSTRACT

One of the main objectives of the research and development done in concrete is to improve the performance of concrete. The parameters that were considered are compressive strength and permeability which are direct indices of durability of concrete. The compressive strength and permeability could be enhanced by various methods and means and few of them are increasing the content of binder, decreasing the water content, proper gradation and minimizing the porous nature of concrete. In the present work, the pore structure of silica fume concrete is studied considering the optimum replacement for cement found in previous works, i.e. 13% replacement. Samples were casted of various grades, viz., M20, M25, M30, M35 and M40 grades for 0% replacement and 13% replacement and pore structure was studied using Scanning Electron Microscope (SEM) and chemical analysis was done using Energy Dispersive X-Ray Spectroscopy (EDAX).

Keywords: Silica fume, replacement, pore structure, interfacial transition zone, Scanning Electron Microscope, Energy Dispersive X-ray Spectroscopy.

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<http://www.iaeme.com/IJCIET/issues.asp?JType=IJCIET&VType=9&IType=3>

1. INTRODUCTION

With the advent of nano-science in early 2000s, it had a great impact on construction materials, thus increasing the usage of nano-technology products. These nano-products while