

R.M.K. COLLEGE OF ENGINEERING AND TECHNOLOGY



(AN AUTONOMOUS INSTITUTION)

RSM NAGAR, PUDUVOYAL – 601206, GUMMIDIPOONDI TALUK, THIRUVALLUR DISTRICT

Research & Innovation @ RMKCET

A Quarterly News Bulletin

Research is the distance between an Idea and its Realization.

-David Sarnoff

FEBRUARY 2022 ISSUE -2, VOL -1 Imagination is the highest form of Research.

-Albert Einstein

RMKCET is a Visionary in designing the future driven academic excellence, incorporating interdisciplinary, applied research and innovation.

Another Milestone...



The Founder-Chairman, R.M.K. Group of Institutions, Vidya Ratna **Shri R.S. Munirathinam** launched the AI-Powered Learning Platform, **RMK NextGen App**

Innovation The Crux of Engineering



Editorial Board

Dr.K.Ramar - Principal

Dr.C.Arun

Dr.K.Sivaram - Dean Research

Dr.P.K.Devan - Professor / Mech

- Professor / ECE

Dr.S.Gopinath - AP/ Mech

Ms.M.Ida - AP/ S&H





Insights October 2021 – January 2022

04 Grants obtained from AICTE & Anna University

12 Patents filed & published

45 Research Articles Indexed in WoS & Scopus

06 Faculty Completed Ph.D.

33 Research Proposals submitted 08 Patents applied for Financial grant under KAPILA Scheme

Grants Received



Rs. 6,83,848/- is granted under "Modernisation & Removal of Obsolescence Scheme (MODROBS)" for the proposal on "Test and Analyse the Functional Behaviour of Antennas and Microwave Components."

Department: Electronics and Communication Engineering

Coordinator: Dr.N.Gangatharan , Co-Coordinator: Dr.S.Muthumanickam

Rs. 13,94,660/- is granted under "Modernisation & Removal of Obsolescence Scheme (MODROBS)" for the proposal on "Modernization of Existing Facilities in Thermal Laboratory to meet out the Evolving Changes in the Field of Thermal Science."



Department: Mechanical Engineering

Coordinator: Dr.M.Balasubramanian, Co-Coordinators: Dr.P.K.Devan, Dr.S.Gopinath



Rs. 50,000/- is sponsored by All India Council for Technical Education (AICTE) to conduct National Level Conference on "Communication and Signal Processing Systems(Online) - NCCSS 2021."

Department: Electronics and Communication Engineering

Coordinator: Dr.T.M.Inbamalar, Co-Coordinator: Dr.Chettiyar Vani

Vivekanand

Rs. 30,000/- grant is received from Anna University, Chennai to conduct Faculty Development Training Programme (FDTP) on "CS8691 Artificial Intelligence" (Online).

Department: Computer Science and Engineering

Coordinator: Dr.D.Paulraj, Co-Coordinators: Mr.M.Arun Manicka Raja,

Mr.N.R.Rejin Paul, Mr.P.N. Senthil Prakash, Mr.V.M.Jemin



Patent Filed

- 1. Dr. C. Arun, Mr. C. Karthikeyan published a Patent on "Grocery Monitoring System Using IOT in Supermarket," 202141053152, 03.12.2021.
- Dr. T. M. Inbamalar, Dr. N. Gangatharan, Dr. Chettiyar Vani Vivekanand, Ms. V. Kannagi, Ms. G. Bharatha Sreeja, Ms. Jasmine Vijithra, Ms. A. Arthi Devarani, Mr. N. Sanjeev Kumar, Dr. K. G. Shanthi published a Patent on "Smart Neonatal Care System," 202141052123, 26.11.2021.
- 3. Dr.N.Gangatharan,Dr.K.Kannan,Dr.N.G.Praveena,Mr.P.Sathyaraj,Dr.K.G.Shanthi,Ms.R.Subatra ,Ms.A.SwethaReddy,Ms.L.Manimegalai,Ms.SamudaPrathima, Ms.C.Nithiya, Ms.B.J.Komathi published a Patent on "System for Node Location and Qos Improvement in Manet," 202141053153 A,44267.
- 4. Ms.P.Prempriya has filed a Patent on "Pollution Data Logging System Employing IoT Integrated Hyper-Ledger Cloud Module," 202141059327.
- 5. Mr.R.VijayAnandh, Dr.P.Josephin Shermila published Patent on "An Intelligent Pharmaceutical Assistance System," 202141040360,24.09.2021.
- 6. Dr.P.Josephin Shermila filed a Patent on "IOT Based Smart Street Light Monitoring and Automated Power Failure Notification System," 202141049779,29.10.21.
- 7. Ms. N. Nimitha Published a Patent on "Smart Pavements",202141042013, 01.10.21.
- 8. Dr.R.M.Bommi, Dr.P.Partheeban, Ms. V Jacintha, Dr.T.M.Amirthalakshmi, Mr.V.Sudharsanam, Dr.R.Meenakshi published a Patent on "Smart Pipe Inspection Robot for Blockage Detection and Clearance," 202141029564, 16.07.2021.
- 9. Dr. T. J. Catherine published a Patent on Deep Learning and Wireless based Energy Efficient Autonomous System for Pollution Control in E-Cities," 202141051866 A,26.11.2021.
- 10. Dr.N.Saikumari published a Patent on "A Wearable Device and Sensor Based System for Healthcare and Security Management Applications Thereof," 202111038377,44442.
- 11. Mr. J. Leo Amalraj published a Patent on "An Energy Efficient Thermodynamics Cycle to Liquify BioMethane on a Microscale," 202141029268A,16.07.2021.
- 12. Dr. P. Hema, published a Patent on "Graphic Partitioning Approach by Sequencing Small Graphs," 202141046366,44505.

Research Publications

- 1. Sammeta, N., Parthiban, L.,(2021),Data ownership and secure medical data transmission using optimal multiple key-based homomorphic encryption with Hyperledger blockchain,International Journal of Image and Graphics,1793-6756,221003.
- 2. Vaishnavi, S., Sethukarasi, T.,(2022), Detection and avoidance of clone attack in IoT based smart health application, Intelligent Automation and Soft Computing, 1079-8587, 31, 3.
- 3. Pradheeba, U., Sherin Glory, J., Jausmin, K.J., Ramya, U.,(2021), Effective cataloging over diverse algorithms for automatic text summarization and its survey, Advances in Parallel Computing, 0927-545, 39.
- 4. Reyana, A., Kautish, S., Vibith, A.S., Goyal, S.B.,(2021),EGMM video surveillance for monitoring urban traffic scenario,International Journal of Intelligent Unmanned Systems,2049-6435.
- 5. Priyadharshini, I., Jasmine Gilda, A., Sherin Glory, J., Mukhil, V.,(2021),E-society A financial and event management system, Advances in Parallel Computing, 0927-545,39.
- 6. M. Arun Manicka Raja, S. Swamynathan, (2021), Hierarchical Stream Clustering Based NEWS Summarization System, Computers, Materials & Continua, 1546-2218 (print) 1546-2226 (online), Vol. 70, No. 1.
- 7. Naresh Sammeta, Latha Parthiban, (2021), Medical data analytics for secure multi-party-primarily based cloud computing utilizing homomorphic encryption, Journal of Scientific and Industrial Research (JSIR), 0975-1084, 80, 8.
- 8. Indra Priyadharshini S., Vigilson Prem M., Suresh K., (2021), Near-infrared optical spectroscopy for pancreas shrinkage estimation with multi synchrosqueezing transform and multivariate regression model, Microscopy Research Technique, WILEY, 1097-0029.
- 9. Pradheeba, U., Bhavani, M.B., Yuvaraj, B.R., Krithika, V.,(2021), Prospective classification over various handwritten character recognition algorithms A survey, Advances in Parallel Computing, 0927-545,39.

Research Publications

- 10. Kesavan, D., Periyathambi, E., Chokkalingam, A., (2022), A proportional fair scheduling strategy using multiobjective gradient-based African buffalo optimization algorithm for effective resource allocation and interference minimization, International Journal of Communication Systems, 1099-1131.
- 11. Sathies Kumar, T., Arun, C., Ezhumalai, P.,(2022), An approach for brain tumor detection using optimal feature selection and optimized deep belief network, Biomedical Signal Processing and Control, 1746-8094, 73.
- 12. Dr.N. Kanya, G. Sandhiya, Dr.M. Rajkumar, Dr.S. Geetha, Dr. Pacha Shobha Rani,(2021),An Efficient Damage Relief System based on Image Processing and Deep Learning Techniques,RevistaGeintec-GestaoInovacao E Technologias,ISSN 2234 0722,Vol. 11,No. 2.
- 13. Babu M, K Sandhiya, V Preetha,(2021),Design of Alumni Portal with Data Security,2021 Second International Conference on Electronics and Sustainable Communication Systems (ICESC),ISBN:978-1-6654-2867-5.
- 14. Krishnan, K., Yamini, B., Alenazy, W.M., Nalini, M.,(2021), Energy-Efficient Cluster-Based Routing Protocol for WSN Based on Hybrid BSO-TLBO Optimization Model, Computer Journal, 0010-4620, 64, 10.
- 15. S.Muthumaickam,B. Keertana, L. Lavanya, S. Madhumitha and P. Sathvikaa,(2021),Hardware Implementation of Health Monitoring of Domestic Animals Using RFID,IEEE Xplore- 2021 International Conference on System, Computation, Automation and Networking (ICSCAN),ISSN 1803–7232.
- 16. J Tharun, J. Vishnupriyan; S. Muthumanickam; K. Chidambarathanu,(2021),Intelligent battery management system,IEEE Xplore-2021 International Conference on System, Computation, Automation and Networking (ICSCAN),ISSN 1803–7232.
- 17. Babu M, B Shankaranarayanan, S Sanjay, Sathish Kumar GA,(2021),IoT Based Smart Bottle for Healthcare with an Efficient SMS4-Bsk Encryption Transmission System,2021 Second International Conference on Electronics and Sustainable Communication Systems (ICESC),ISBN:978-1-6654-2867-5.
- 18. Vinodhkumar, Durga, Muthumanickam S,(2021),Numerical Study on SEU Performance of Strain Engineered 6T-SRAM Cells,Journal of Circuits, Systems and Computers,0218-1266,Online.
- 19. Aishwarya, N., Praveena, N.G., Akash Arumugam, B.S., Pramod, J.,(2022), Photobook Creation Using Face Recognition and Machine Learning, Lecture Notes in Electrical Engineering, 1876-1119, 792.
- 20. Geethamahalakshmi, G., Kalaiarasi, N., Nageswari, D.,(2022),Fuzzy Based MPPT and Solar Power Forecasting Using Artificial Intelligence,Intelligent Automation and Soft Computing,1079-8587,32,3.
- 21. Vijayal, V., Krishnamoorthi, K.,(2022),Integrated Renewable Smart Grid System Using Fuzzy Based Intelligent Controller,Intelligent Automation and Soft Computing,1079-8587,33,1.
- 22. Nageswari, D., Kalaiarasi, N., Geethamahalakshmi, G.,(2022),Optimal placement and sizing of distributed generation using metaheuristic algorithm,Computer Systems Science and Engineering,1877-0509,41,2.
- 23. Sankaramoorthy, T., Sivakrishna, M., Sridhar, K.P., Sridhar, U., Keshaav, J.S.S., (2021), A study of the manufacture of fiberaluminum laminates reinforced with glass and the effect of interfacial adhesive bonding on the impact's behavior, Journal of Physics: Conference Series, 1742-6588, 2054, 1.
- 24. Balasubramanian, M., Loganathan, T.G., Srimath, R.,(2021), An overview: characterization of natural fiber reinforced hybrid composites, World Journal of Engineering, 1708-5284.
- 25. Balasubramanian, M., Srimath, R., Vignesh, L., Rajesh, S.,(2021), Application of shape memory alloys in engineering A review, Journal of Physics: Conference Series, 1742-6588, 2054, 1.
- 26. Kumar, S.S., Rajan, K., Mohanavel, V., Ravichandran, M., Rajendran, P., Rashedi, A., Sharma, A., Khan, S.A., Afzal, A., (2021), Combustion, performance, and emission behaviors of biodiesel fueled diesel engine with the impact of alumina nanoparticle as an additive, Sustainability (Switzerland), 2071-1050, 13, 21.
- 27. Kumar, S.S., Wahab, G.M., Srinivas, L.Y., Jaswanth, A., Reddy, G.R.T., (2021), Developments in 3D printable composite material, Journal of Physics: Conference Series, 1742-6588, 2054, 1.
- 28. Kumar, S.S., Mageswari, S.D.U., Dhanasekar, S., Prasaath, R.R.G., Kumar, S.D., Yuvaraaj, K.R., (2021), Domestic water treatment An Indian perspective, Journal of Physics: Conference Series, 1742-6588, 2054, 1.

Research Publications

- 29. Palanichamy, R., Devan, P.K., (2021), Effect of Tongue Geometry on the Performance of Cross Flow Fan, International Journal of Mechanical Engineering, ISSN: 0974-5823, 7,1.
- 30. Karthick, K., Mohan Ramana, V., Muralikrishnan, M.S., Vishnuvardhan, N., Kumar,S.N.,(2021),Effects of various reinforcement on mechanical properties of plastic block: A review, Journal of Physics: Conference Series, 1742-6588, 2054, 1.
- 31. S.Gopinath, Devan, C.Bibin&Pitchandi(2021),Influence of retarded injection timing on thermal performance and emission characteristics of a diesel engine fuelled with an optimized pyrolytic blend,Energy & Environment,2048-4070.
- 32. Devan, P.K., Arun, K., Arvindkumar, N.H., Aravind, R., Kumar, R.D., (2021), IoT based solar powered smart irrigation system, Journal of Physics: Conference Series, 1742-6588, 2054, 1.
- 33. Karthick, K., Malarvizhi, S., Balasubramanian, V.,(2021),Mechanical properties and microstructural characteristics of rotary friction welded dissimilar joints of rolled homogeneous armor steel and medium carbon steel,Journal of Mechanical Behavior of Materials,1751-6161.
- 34. Karthick, K., Malarvizhi, S., Balasubramanian, V.,(2021), Microstructural characterization of dissimilar weld joint between ferritic steel and stainless steel, Material Science and Technology, 0267-0836.
- 35. S.Senthilkumar,(2021),Optimization of CNC End Milling Process Parameters of Low-Carbon Mold Steel Using Response Surface Methodology and Grey Relational Analysis,Advances in Materials Science and Engineering,1687-8434,1687-8434.
- 36. Rajesh, K., Devan, P.K., Maruthi, M.S., Vignesh, N.P., Vigneshvar, S., Sethu, V.,(2021),Production and performance of biodiesel from palm fatty acid distillate,Journal of Physics: Conference Series,1742-6588,2054,1.
- 37. Rajesh, K., Aravindhan, N., Manimaran, B., Elavarasan, D., Kumar, L.D., Kumar, T.M.,(2021),Study on performance and emission characteristics of VCR diesel engine fuelled with palm fatty acid distillate biodiesel,Journal of Physics: Conference Series,1742-6588,2054,1.
- 38. Anand, M., Devi, G., Raghavendra, S.G., Prakasha, G.S., Lakshmanan, T.,(2021), A critical study on acetylene as an alternative fuel for transportation, AIP Conference Proceedings, 2396.
- 39. Jayanthi, N., Venkatesh, M., Suresh Kumar, R., Sekar, S.,(2021), A review on performance of nanofluids in various heat pipe solar collector, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, ISSN: 0954-4089, 1,10.
- 40. Absara FdoS,(2021), Electroless Copper Deposition Using 3 Mercapto Propionic Acid as an Additive, Materials Today: Proceedings, 2214-7853, Vol. 47, Part 9.
- 41. Sundareswaran T,(2022),Novel quinoxaline derivatives of 2, 3-diphenylquinoxaline-6-carbaldehyde and 4, 4'-(6-methylquinoxaline-2,3-diyl)bis(N,N-diphenylaniline): Synthesis, structural, DFT-computational, molecular docking, antibacterial, antioxidant, and anticancer studies,Journal of Molecular Structure,0022-2860 / 1872-8014,1248.
- 42. Sai Kumari N,(2021),On certain topological indices of gold crystal,Materials Today: Proceedings,2214-7853,Vol. 47, Part 9.
- 43. Absara Fdo S,(2021), Stabilizing effects of mercapto additives on Eco friendly autocatalytic copper nano film deposition, Materials Today: Proceedings, 2214-7853, Vol. 47, Part 9.
- 44. Sai Kumari N,(2021), Synthesis and characterization of amino acid Schiff base and its copper (II) complex and its antimicrobial studies, Materials Today: Proceedings, 2214-7853, Vol. 47, Part 9.
- 45. Absara Fdo S,(2021), Thin film to nano copper deposition by special additives on an ecofriendly electroless bath, Materials Today: Proceedings, 2214-7853, Vol. 47, Part 9.

Programmes organised

 Department of AIDS & Research Cell conducted Online Research Seminar on "Research Methodology and Documentation" on 06.10.2021.
 Dr. D.S. Guru, Professor and Head, Department of studies in Computer Applications, University of Mysore, Mysore delivered a scintillating lecture on Research perspectives.

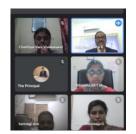


Programmes organised



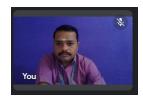
- Department of S&H & Research Cell conducted Online Seminar on "Formation and Importance of Research Paper Publications" on 01.10.2021.
 Dr.K.Ramar, Principal, R.M.K. College of Engineering and Technology shared his expertise on the diverse dimensions that research involves.
- Department of ECE & Research Cell conducted Online Seminar on "Writing and Publishing Scientific Research Articles in SCI Journals

 A Framework" on November 01, 2021. Dr. P. Pal Pandian, Professor, Mechanical and Automobile Engineering, School of Engineering and Technology, Christ-Deemed to be University, Bangalore spoke about the nuances involved in publishing the Research Articles.





- Institution's Innovation Council & Dept. of EEE jointly organized Online Webinar on "Pitching Event for Ideas Scouted & Linkage with Innovation Ambassadors for Mentorship Support" on December 17, 2021.
- Institution's Innovation Council & Dept. of EEE jointly organized Online Webinar on "Funding Opportunities for realizing your Innovative Ideas" on December 17, 2021. Dr. C. Arun, Professor & Research Cell Coordinator, Dept. of ECE hinted on the huge way out for the aspirants to realize their dreams.





- Institution's Innovation Council & Dept. of ECE jointly organized a Webinar on "My Story - Motivational Session by Successful Innovators" on November 29, 2021. Mr.M. Chithrarth, CTO Founder, Exclametric Technologies Pvt Ltd shared his success story and inspired the gathering to aspire more.
- Institution's Innovation Council & Dept. of ECE jointly organized Online Workshop on "Pre-Incubation & Incubation Facility" on November 30, 2021. Mr.T V Jayanandan, Founder/CEO, TESLA MINDS spoke exhaustively on the fine points of Incubation process.





- Institution's Innovation Council & Dept of CSE jointly organized Online Webinar on "My Story Motivational Session by Successful Entrepreneur/Start-up Founder" on November 25, 2021. Ms. Shivani Velayutham, Executive Director & Co-Founder, Divel Technovation Pvt Ltd shared her triumphant tale and enthused the spirit of success among the gathering.
- Institution's Innovation Council & Dept. of CSE jointly organized Online Webinar on "Conversion of Ideas into Business" on November 30, 2021. Mr. Senthilkumar Subramanian, Chief Information Officer, Ajeya Infosol Pvt Ltd, Chennai encouraged the young minds to create, develop and promote their Ideas into Business.



Programmes organised

 Institution's Innovation Council & Dept. of Science & Humanities jointly organized a Seminar on "Challenges & Opportunities for Young Entrepreneurs" on 21 December 21, 2021. Shri. M.M. Shah, Founder & CEO, D-Cube Design gave a motivational talk inspiring the young Entrepreneurs to face the challenges and explore the opportunities.





- Institution's Innovation Council & Dept. of S&H jointly organized a Seminar on "Problem Solving & Ideation Workshop" on December 23, 2021. Mr.A.R.Subramani, Founder & CEO – Sritech Engineering addressed and motivated the gathering to hone their logical, reasoning and problem solving skills.
- Institution's Innovation Council & Department of AI&DS jointly organized a Workshop on "Financial Schemes for Start-Ups & Entrepreneurs" on November 24, 2021. Ms.Gita Chengappa, General Manager & Mr. J Vishnuvardhan, President, CLONOS effectively brought to limelight the diverse ways accessible for achieving the Entrepreneurial dreams.





 Institution's Innovation Council & Dept. of AI&DS jointly organized a Seminar on "Various Schemes for Promotion of Entrepreneurship" on November 29, 2021. Ms. Ragavia Rajasekar, CEO, Cognisor Technology Solutions delivered an enlightening session on the viable perspectives of Entrepreneurship.

PROGRAMMES ORGANISED UNDER MENTOR-MENTEE SCHEME

A fund of Rs 2.25 lakh has been granted by AICTE – MIC under Mentor –Mentee Scheme.





The members of the College Institution's Innovation Council organized Online Orientation Session for Mentee Institutions on January 21, 2022.

Awards & Accolades

R.M.K. College of Engineering & Technology is recognized in the band **"Excellent"** under Private College/Institute (Technical) Category by ATAL Ranking of Institutions on Innovation Achievements (**ARIIA 2021**).







R.M.K. College of Engineering & Technology got **"Excellent" in Hygiene rating** issued by Food Safety and Standards Authority of India (**FSSAI**), Ministry of Health and Family Welfare, Government of India.







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547

RESEARCH PAPERS PUBLISHED IN WEB OF SCIENCE & SCOPUS **JOURNALS**

PATENTS PUBLISHED

> **PATENTS GRANTED**

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Based on AICTE and State

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- Ranked No.1 among the top 20 Engineering Colleges in India with Excellent Industry Exposure by HIGHER EDUCATION REVIEW MAGAZINE 2017.
- 97th Rank in OUTLOOK Drishti Ranking of Best Professional colleges, 2018.
- Ranked 61st among the top 150 Engineering Institutes in India by the Times Engineering Institute Ranking Survey 2020.

R.M.K. College of Engineering and Technology

(An Autonomous Institution)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai All Eligible UG Programs are Accredited by NBA / Institution Accredited by NAAC "A" Grade An ISO 9001:2015 Certified Institution

R.S.M. Nagar, Puduvoyal, Gummidipoondi Taluk, Thiruvallur District, Tamil Nadu, India. Pin Code: 601 206. 044 - 6790 6790, Fax: 6790 6791

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