
THESES OF THE MONTH

SCIENCE & TECHNOLOGY

A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of Feb-March, 2024)

BIOLOGICAL SCIENCES

Biotechnology

1. Dey, Suchanda. **Establishment of molecular mechanism behind colistin resistance in *Klebsiella pneumoniae* and identification of potential efflux pump inhibitors through in silico approaches.** (Dr. Enketeswara Subudhi), Department of Biotechnology, Siksha O Anusandhan University, Bhubaneswar.
2. Dixit, Sangita. **Multi-Omics based insight into bacterial community dynamics and biofuel producing potential in the Pandanus-rich multiple hot spring outflow of Odisha, India.** (Dr. Enketeswara Subudhi and), Department of Biotechnology, Siksha O Anusandhan University, Bhubaneswar.
3. George, Jenet. **Synergism of photo-biocatalytic removal of persistent chlorophenolic compounds by membrane reactor fabricated with polymeric nanocomposites.** (Dr. V Vinoth Kumar), Department of Biotechnology, SRM University, Kattankulathur, Chennai.
4. Giri, Alok Kumar. **Nutraceutical profiling and molecular characterization of underutilized wild fruits of Odisha.** (Dr. Laxmikanta Acharya), Department of Biotechnology, Siksha O Anusandhan University, Bhubaneswar.

Life Sciences

1. Pal, Ankit. **Enhancement in the production, structure-activity relationship, and chaperone assisted folding of recombinant bio-therapeutic protein human-paraoxonase 1.** (Prof. Tapan Kumar Chaudhuri), Kusuma School of Biological Sciences, Indian Institute of Technology Delhi, New Delhi.
2. Upadhyay, Saurabh. **Investigating the structural and functional implications of cancer relevant PKM2 mutations.** (Prof. Ashok Kumar Patel), Kusuma School of Biological Sciences, Indian Institute of Technology Delhi, New Delhi.

Microbiology

1. Balamurali, V. **Evaluation on anti - SARS- COV- 2 antibody titre and human genomic characterization of non-responder in the vaccinated candidates.** (Dr.K V Leela), Department of Microbiology, SRM University, Kattankulathur, Chennai.

EARTH SYSTEM SCIENCES

Atmospheric Science

1. Chandra, Varunesh. **Impact of polar sea ice melt on Indian summer and winter monsoons.** (Prof. Sandeep Sukumaran), Centre for Atmospheric Science, Indian Institute of Technology Delhi, New Delhi.

ENGINEERING SCIENCES

Biochemical Engineering

1. Dubey, Shubham. **Microbiome-based rhizosphere engineering for mitigation of salinity stress in *Vigna radiata*.** (Prof. Shilpi Sharma), Department of Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi, New Delhi.

Biomedical Engineering

1. Ahalya, R K. **Deep learning and quantum computing based evaluation of rheumatoid arthritis using hand x-ray and thermal images.** (Dr. U Snekalatha), Department of Biomedical Engineering, SRM University, Kattankulathur, Chennai.

Civil Engineering

1. Jaishree, D. **Numerical study on the Bay of Bengal circulation features and its variations using high resolution model simulations.** (Dr. P T Ravichandran), Department of Civil Engineering, SRM University, Kattankulathur, Chennai.
2. Kalyani, Gurrarn. **Experimental and analytical investigation on concrete beam with hybrid fiber reinforced polymer laminate.** (Dr. N Pannirselvam), Department of Civil Engineering, SRM University, Kattankulathur, Chennai.
3. Khairnar, Amruta Prabhakar. **Developing a circular economy model for rural sanitation.** (Prof. V M Chariar), Centre for Rural Development & Technology, Indian Institute of Technology Delhi, New Delhi.

Computer Science & Engineering

1. Anupama, G. **Novel prediction model using efficient parallel ECLAT algorithm in GRU.** (Dr.C Lakshmi), Department of Computer Science

- & Engineering, SRM University, Kattankulathur, Chennai.
2. Behera, Bibhuti Bhusana. **Optimization of industrial processes using Industrial Internet of Things (IIOT) technology.** (Prof. Binod Kumar Pattanayak and Prof. Rajani Kanta Mohanty), Department of Computer Science and Engineering, Siksha O Anusandhan University, Bhubaneswar.
 3. Bhargavi, G. **Landslide mapping and susceptibility assessment with remote sensing data using deep neural networks.** (Dr. J. Arun Nehru), Department of Computer Science, SRM University, Kattankulathur, Chennai.
 4. Boyanapalli, Arathi. **Ovarian cancer detection and classification using deep learning techniques.** (Dr. A. Shanthini), Department of Computer Science & Engineering, SRM University, Kattankulathur, Chennai.
 5. Dash, Lucy. **Optimizing wireless sensor network performance and sustainability through data correlation exploitation, and redundancy reduction.** (Prof. Binod Kumar Pattanayak), Department of Computer Science & Engineering, Siksha O Anusandhan University, Bhubaneswar.
 6. Janaki, K. **Defensive model for IoT based security attacks using blockchain and deep learning approach.** (Dr. S. R. Ramamoorthy), Department of Computer Science & Engineering, SRM University, Kattankulathur, Chennai.
 7. Krishnamoorthy, N. **Novel design and development of secure data storage in cloud computing environment using hybrid cryptographic algorithm.** (Dr. S. Umarani), Department of Computer Science, SRM University, Kattankulathur, Chennai.
 8. Manoharan, Harshini. **Design and development of continuous glucose monitoring system based on hierarchically recommended clustering algorithm for managing the sedentary lifestyle of diabetic patients.** (Dr. J. Dhilipan and Dr. A. Saravanan), Department of Computer Science, SRM University, Kattankulathur, Chennai.
 9. Mary, A. Jenita. **Leveraging machine learning methods for detection of fraudulence in health insurance.** (Dr. S. P. Angelin Claret), Department of Computer Science, SRM University, Kattankulathur, Chennai.
 10. Usha, S. **Prognosis cardiovascular and diabetes mellitus disease using reliable optimization algorithm with CNN in deep learning techniques.** (Dr. S. Kanchana), Department of Computer Science, SRM University, Kattankulathur, Chennai.

Electrical & Electronics Engineering

1. Manoj Kumar. **Exploring the reliability aspects of NVM technologies for neuromorphic and digital computing.** (Prof. Mann Suri), Department of Electrical & Engineering, Indian Institute of Technology Delhi, New Delhi.
2. Venugopal, Arvind. **Estimation and optimisation of stray parameters in laminated busbars for electric vehicle traction inverters.** (Dr. Femi R.), Department of Electrical & Electronics Engineering, SRM University, Kattankulathur, Chennai.

Electronics & Communication Engineering

1. Jena, Bibekananda. **Optimal multilevel thresholding for image segmentation based on nature inspired algorithm.** (Dr. Manoj Kumar Naik), Department of Electronics & Communication Engineering, Siksha O Anusandhan University, Bhubaneswar.
2. Kumar Biswal. **Analysis and performance improvement of fractional-order filters.** (Dr. Madhab Chandra Tripathy and Dr. Sanjeeb Kumar Kar), Department of Electronics & Communication Engineering, Siksha O Anusandhan University, Bhubaneswar.
3. Monika, R. **Investigations on adaptive block compressive sensing techniques for efficient image compression.** (Dr. S. Dhanalakshmi), Department of Electronics and Communication Engineering, SRM University, Kattankulathur, Chennai.
4. Nirosha, R. **Steady state and transient characterization of organic thin film transistors.** (Dr. Rajesh Agarwal), Department of Electronics & Communication Engineering, SRM University, Kattankulathur, Chennai.
5. Poovannan, E. **Early power prediction of digital VLSI circuits using machine learning.** (Dr. S. Karthik), Department of Electronics & Communication Engineering, SRM University, Kattankulathur, Chennai.
6. Sahoo, Subhaluxmi. **Background modeling and model learning for moving video object detection and shadow removal.** (Dr. Pradipta Kumar Nanda), Department of Electronics & Communication Engineering, Siksha O Anusandhan University, Bhubaneswar.
7. Sanjay Kumar. **Characterization and modelling of underwater wireless optical channel and link performance improvement using radiometric signal processing.** (Dr. Shanthini Prince), Department of Electronics and Communication Engineering, SRM University, Kattankulathur, Chennai.

- Wunnavva, Aneesh. **Multilevel image thresholding using nature inspired algorithms.** (Dr. Manoj Kumar Naik), Department of Electronics & Communication Engineering, Siksha O Anusandhan University, Bhubaneswar.

Genetic Engineering

- Sivadarshini, R. **Insights into bacterial alginate metabolism and their applications in bioenergy production.** (Dr.M Ramya), Department of Genetic Engineering, SRM University, Kattankulathur, Chennai.

Mechanical Engineering

- Abhuri, Lakshman Kumar. **Experimental investigations on torsion, damping and machinability of fiber reinforced polymer composites using sensors signal analysis.** (Dr.M Prakash), Department of Mechanical Engineering, SRM University, Kattankulathur, Chennai.
- Panda, Asish Kumar. **Stochastics finite element model updating using frequency response functions.** (Prof. S V Modak), Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi.
- Sasikumar, S. **Stabilization and mechanical behavior of aluminum foams stabilized by various particles.** (Dr. G.S.Vinodkumar), Department of Mechanical Engineering, SRM University, Kattankulathur, Chennai.
- Tauheed, Mohd. **Fracture behavior of hygrothermally aged composite adhesive joints.** (Prof. Naresh Varma Datla), Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi.

Metallurgical Engineering

- Bairagi, Ujjawal. **Polyzwitterionic gels and nanogels for fixation and/ or release of anions and gaseous molecules and their applications.** (Prof. Josemon Jacob), Department of Materials Science, Indian Institute of Technology Delhi, New Delhi.
- Joshi, Tina. **Surface engineering of upconversion nanoparticles with polymer chains using photoinduced electron/energy transfer reversible addition-fragmentation chain transfer polymerization.** (Prof. Leena Nebhani), Department of Materials Science, Indian Institute of Technology Delhi, New Delhi.

MATHEMATICAL SCIENCES

Mathematics

- Hossain, Md Mouzakkir. **Dynamics and instability mechanisms of single and double-layered fluid**

flowmodels. (Dr.Harekrushna Behera), Department of Mathematics, SRM University, Kattankulathur, Chennai.

- Senthil, S. **A study on algebraic structure of right duo seminearrings and its application.** (Dr. R Perumal), Department of Mathematics, SRM University, Kattankulathur, Chennai.

MEDICAL SCIENCES

Pharmaceutical Science

- Moka, Muralikrishna. **Study on hydroalcoholic extract and alkaloid rich fraction of *Tinospora Cordifolia* Stems against continuous light induced Polycystic ovarian syndrome in rodent model.** (Dr.Sumithra M), Department of Pharmacy, SRM University, Kattankulathur, Chennai.
- Sharmila Devi, V. **Phytochemical standardization and pharmacological evaluation of polyherbal formulation for the treatment of diabetic nephropathy.** (Dr.Sumithra M), Department of Pharmacy, SRM University, Kattankulathur, Chennai.

Physiotherapy

- Suresh, J. **Efficacy of virtual reality program on motor performance in children with developmental coordination disorder: A randomized controlled trial.** (Dr. S Subash), Department of Physiotherapy, SRM University, Kattankulathur, Chennai.

PHYSICAL SCIENCES

Chemistry

- Dhal, Kshirabdhitanaya. **Elucidation of molecular interactions of non-essential amino acids with food preservatives in aqueous medium.** (Dr. Malabika Talukdar and Dr. Sulochana Singh), Department of Chemistry, Siksha O Anusandhan University, Bhubaneswar.
- Gawas, Prakash Pratiksha. **Design and development of donor-acceptor architectures based on hydantoin derivatives towards optoelectronic applications.** (Dr.Venkatramaiah Nutalapati), Department of Chemistry, SRM University, Kattankulathur, Chennai.
- Leelavathi, H. **Construction of g-C₃N₄-based heterojunction photocatalysts for the degradation of refractory organic pollutants in water.** (Dr. R Arulmozhi), Department of Chemistry, SRM University, Kattankulathur, Chennai.
- Madhumathi, R L. **Halogen bond assisted flexible molecular crystals.** (Dr.Soumyajit Ghosh),

Department of Chemistry, SRM University, Kattankulathur, Chennai.

5. Malik, Akshay. **Multi-scale simulation studies elucidating the solvation structure of anthropogenic gases in deep eutectic solvents and bulk phase morphology and dynamics of hydrophobic deep eutectic solvents.** (Prof. Hemant Kumar Kashyap), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.
6. Monika Kumari. **Molecular dynamics simulations assessing mechanistic functioning of new-generation antibacterials and hydrophobic gating of ion-channels.** (Prof. Hemant Kumar Kashyap), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.
7. Tamilvelan. **Semi-synthetic approach for 6-gingerdione, triazole and pyrazole analogs derived from 6-gingerol: Studies on ROS modulation and neuroprotection in zebrafish.** (Dr. P. Gopinath), Department of Chemistry, SRM University, Kattankulathur, Chennai.

Nanotechnology

1. Athithya, S. **Surface-modified TiO₂ nanostructured photoanodes for the fabrication of high-performance dye sensitized solar cell.** (Dr. J. Archana), Department of Nanotechnology, SRM University, Kattankulathur, Chennai.

Physics

1. Awasthi, Vimarsh. **Design and development of surface-enhanced Raman spectroscopy active substrates for trace analyte detection.** (Prof. Satish Kumar Dubey), Centre for Sensors, Instrumentation and Cyber-Physical, Indian Institute of Technology Delhi, New Delhi.
2. Baby Komal. **Helicity inversion, detection, generation and self-healing of orthogonal degenerate states of polarization singularities.**

(Prof. P. Senthilkumaran and Prof. Sunil Kumar), Department of Physics, Indian Institute of Technology Delhi, New Delhi.

3. Das, Monalisa. **Properties of exotic nuclei using effective interactions: Structure and reaction perspective.** (Dr. Rabinarayan Panda and Dr. Mrutunjaya Bhuyan), Department of Physics, Siksha O Anusandhan University, Bhubaneswar.
4. Dehury, Kshetramohan. **Structural dependent exciton features of inorganic-organic hybrid semiconductors.** (Prof. G. Vijaya Prakash), Department of Physics, Indian Institute of Technology Delhi, New Delhi.
5. Mukaddar, S. K. **First-principles study of lead-free halide double perovskites for photovoltaic, thermoelectric and spintronics applications.** (Dr. Saurab Ghosh), Department of Physics, SRM University, Kattankulathur, Chennai.
6. Padmadevi, B. **MnO₂ based mixed metal oxides for energy storage applications.** (Dr. T. Kalaivani), Department of Physics, SRM University, Kattankulathur, Chennai.
7. Sagar, Vidya. **Construction of linear codes with nice parameters.** (Prof. Ritumoni Sarma), Department of Physics, Indian Institute of Technology Delhi, New Delhi.
8. Sandeep Kumar. **Femtosecond terahertz dynamics in spintronic heterostructure.** (Prof. Sunil Kumar), Department of Physics, Indian Institute of Technology Delhi, New Delhi.
9. Sharma, Priyanka. **Study of exchange bias effect and microwave absorption properties of complex oxide nanostructures.** (Prof. Ratnamala Chatterjee), Department of Physics, Indian Institute of Technology Delhi, New Delhi.

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