



MS. VARUNA KUMARAVEL M.TECH (PH.D)

Assistant Professor

Biotechnology - Microbiology - Bioinformatics

NATIONAL COLLEGE (AUTONOMOUS)

TIRUCHIRAPPALLI - INDIA

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PROFILE SUMMARY

A nanotechnology enthusiast with 6+ years of research experience in photocatalytic wastewater treatment and theranostics. Highly equipped to teach bioreactor operations and transfer phenomena with focus on downstream processing.

EDUCATION

Bharathidasan University

2021- Current

- Doctor of Philosophy in Biotechnology.

SASTRA Deemed University

2016 - 2018

- Master of Technology in Medical Nanotechnology.

Kumaraguru College of Technology

2012 - 2016

- Bachelor of Technology in Industrial Biotechnology.

PROFESSIONAL EXPERIENCE

Assistant Professor of Biotechnology

2018 - PRESENT

National College (Autonomous), Trichy.

ADMINISTRATIVE EXPERIENCE

Admission Co-ordinator, DBT - PG Teaching Scheme to offer MSc Biotechnology

2020 - PRESENT

Departmental Co-ordinator, MOOC Courses

2018 - PRESENT

Departmental Co-ordinator, Internal Quality Assurance Cell (IQAC)

2020 - 2022

Departmental Co-ordinator, NIRF

2020 - 2022

Vice President, Biotechnology Association

2020 - 2021

Departmental Co-ordinator, DBT - STAR College Scheme

2019 - 2022

PROJECTS COMPLETED

"Green Metal Oxides as Anti-fouling Agents for Wastewater Treatment" - under SEED Money from the institution (Rs. 20,000/-) (2021-2022)

PUBLICATIONS

- Charles, Julie, **Varuna Kumaravel**, and Senthil Kumar Sadasivam. "Biogenic Synthesis and Characterization of pH-sensitive Magnetic PVA/Starch/MnFe₂O₄ Hydrogel for Prolonged Release of 5-Fluorouracil." *Journal of Inorganic and Organometallic Polymers and Materials* (2024): 1-17. **IF - 3.9**

- Fathima, A. Anish, **Varuna Kumaravel**, D. Reuben Jonathan, Senthil Kumar Sadasivam, R. Yuvashri, and G. Usha. "Synthesis, structural examination, molecular interaction analysis, invitro and insilico anticancer activity investigation of a new curcumin derivative: 1-(4-chlorobenzoyl)-3, 5-bis ((E)-4-methoxybenzylidene) piperidin-4-one." *Chemical Physics Impact* 8 (2024): 100559. **IF - 3.8**
- Selvaraj, Senthilnathan, Pamula Balaji Bhargav, **Varuna Kumaravel**, Senthil Kumar Sadasivam, and Balaji Chandra. "Polyol synthesis of one-dimensional Ag nanowires for the photocatalytic degradation of textile dye and effective removal of microbes." *Environmental Science and Pollution Research* 30, no. 58 (2023): 122601-122610. **IF - 6.1**
- Rao, K. Jagajjanani, **Varuna Kumaravel**, Ishwarya Pownraj, Krituparna Saha, Tarangini Korumilli, and Senthil Kumar Sadasivam. "Biosynthesis and photocatalytic evaluation of ZnO nanoparticles using banana flower perianth." *Journal of Cleaner Production* 380 (2022): 135180. **IF - 11.07**
- Ponnusamy, Ramalingam, **Varuna Kumaravel**, and Saraswathy Nachimuthu. "Synthesis of cellulose acetate, cellulose propionate and cellulose butyrate for the removal of synthetic dyes." In *AIP Conference Proceedings*, vol. 2446, no. 1. AIP Publishing, 2022.
- Gnanaraj, J. Martin Sam, G. Satheesh Kumar, M. Senthil Pandian, P. Ramasamy, **K. Varuna**, and S. Senthil Kumar. "Facile synthesis of reduced graphene oxide from *Azadirachta indica* for optical power limiting applications: an eco-friendly approach." *Journal of Materials Science: Materials in Electronics* 33, no. 26 (2022): 20631-20641. **IF - 2.8**
- **Varuna Kumaravel**, Paul Olusegun Bankole, Baby Jooju, and Senthil Kumar Sadasivam. "Degradation and detoxification of reactive yellow dyes by *Scedosporium apiospermum*: a mycoremedial approach." *Archives of Microbiology* 204, no. 6 (2022): 324. **IF - 2.9**
- Thangaraj, Sheela, Paul Olusegun Bankole, Senthil Kumar Sadasivam, and **Varuna Kumaravel**. "Biodegradation of Reactive Red 198 by textile effluent adapted microbial strains." *Archives of Microbiology* 204, no. 1 (2022): 12. **IF - 2.9**
- Selvam, Ramu, **Varuna Kumaravel**, Infancia Lawrence, Deepa Sankaran, and Senthil Kumar Sadasivam. "Bioconversion of textile industry sludge into soil enriching material through vermistabilization." *Res Rev AJ Life Sci* 9 (2019): 51-58.
- **Varuna Kumaravel**, Kartikeyan Damodaran, Sakthivel Gandhi, and Uma Maheswari Krishnan. "A hybrid system: MnO-incorporated mesoporous silica nanoparticles for theranostic applications." *Bulletin of Materials Science* 41 (2018): 1-13. **IF - 1.9**
- Nachimuthu, Saraswathy, **Varuna Kumaravel**, Sahana Sadhasivam, Nithiya Santhosharajan, Muthukumaran Peraman, and Ramalingam Ponnusamy. "Phytochemical screening and evaluation of antioxidant potential of *Feronia limonia* leaves and fruit extracts." *Journal of Chemical and Pharmaceutical Sciences* ISSN 974 (2014): 2115.

BOOK CHAPTERS

- Ramkumar, M. K., K. Preeti, **K. Varuna**, Maulin P. Shah, and S. Senthil Kumar. "Heavy metal pollution: an insight towards its infiltration, impact and remediation." Environmental Microbiology and Biotechnology: Volume 1: Biovalorization of Solid Wastes and Wastewater Treatment (2020): 91-112.

PATENTS GRANTED

UK Design Patent

6373927 DT. 16/07/2024

Indian Design Patent

416425 DT. 04/07/2024

AWARDS/ RECOGNITIONS

- BEST PAPER PRESENTATION Award at the Indo-Japan Symposium on Nanotheranostics (InJaNa 2024) organized by the Department of Biosciences and Bioengineering & Centre for Nanotechnology, IIT Roorkee, from 23-25 April, 2024.
- BEST PAPER PRESENTATION Award at the National Conference on Emerging Trends in Chemical Sciences 2024 organized by Sona College of Arts and Science, Salem, on 28 March, 2024.
- BEST PAPER PRESENTATION Award at the DST-SERB sponsored Two Day International Conference on Integrating Bioenergy and Sustainable Waste Management organized by KSR College of Arts and Science, Tiruchengode, on 14 March, 2024.
- BEST PAPER PRESENTATION Award at the National Conference on Research and Innovations in Biological Sciences organized by the Rathinam College of Arts and Science, Coimbatore, on 29 February, 2024.
- BEST PAPER PRESENTATION Award at the International Conference on Recent Advances in Bioscience organized by KSG College of Arts and Science, Coimbatore, on 15 February, 2024.
- BEST PAPER PRESENTATION Award at the National Level Conference on "BioME, 2024: Bioscience in the Modern Era," organized by Sri Krishna College of Arts and Science (Autonomous), Coimbatore, on January 31, 2024.
- BEST PAPER PRESENTATION Award at the National Level Conference on "Global Opportunities and Latest Developments in Biotechnology," sponsored by the Department of Biotechnology, Ministry of Science and Technology, Govt. of India, New Delhi, and organized by the PG and Research Department of Biotechnology, JJ College of Arts and Science, on 5 January 2024.
- BEST PAPER PRESENTATION Award at the National conference on "FRONTIERS IN BIOTECHNOLOGY - 2023" organized by Nandha Arts and Science College, Erode, on 22 September 2023.

- BEST PAPER PRESENTATION Award in the International Conference on Recent Trends, Strategies and Technical Advancements in Biological and Biomedical Sciences for Sustainability (RTSTA'22) organized by Seethalakshmi Ramaswamy College, Tiruchirappalli on 14-15 December 2022.
- BEST PAPER PRESENTATION Award in the 8th International Conference on 'Recent Advances in Bioscience' organized by KSG College, Coimbatore on 28 October 2022.
- BEST PAPER PRESENTATION Award in the National Symposium on 'Exploring Innovations in Biosciences and Aristo Fest (NSEIB-2022)' organized by Rathinam College, Coimbatore 14 October 2022.
- BEST PAPER PRESENTATION Award in the National Level Technical Symposium & Aristofest on 13-14 October 2022.
- BEST PAPER PRESENTATION Award in the National Seminar on Recent Trends in Plant Sciences and Atmospheric Physics organized by E.S. College, Villupuram on 26 May 2022.
- BEST PAPER PRESENTATION Award in the International Seminar on Sustainable Development and Natural Resources organized by GTN College, Dindigul on 22 March 2022.
- BEST POSTER PRESENTATION Award at the National Conference on Emerging Trends in Chemical Sciences 2024 organized by Sona College of Arts and Science, Salem, on 28 March, 2024.
- BEST POSTER PRESENTATION Award at the DST-SERB sponsored Two Day International Conference on Integrating Bioenergy and Sustainable Waste Management organized by KSR College of Arts and Science, Tiruchengode, on 14 March, 2024.
- BEST POSTER PRESENTATION at the Intercollegiate Competition organized by The Gandhigram Rural Institute (Deemed To Be University), Gandhigram, on 29 February, 2024.
- BEST POSTER PRESENTATION Award at the National Conference on Research and Innovations in Biological Sciences organized by the Rathinam College of Arts and Science, Coimbatore, on 29 February, 2024.
- BEST POSTER PRESENTATION Award at the National Seminar on Recent Advances in Biomedical Technology organized by St. Joseph's College, Trichy on 6th February, 2024.
- BEST POSTER PRESENTATION Award at the National Level Conference on "BioME, 2024: Bioscience in the Modern Era," organized by Sri Krishna College of Arts and Science (Autonomous), Coimbatore, on January 31, 2024.

- BEST POSTER PRESENTATION Award at the National Level Conference on "Global Opportunities and Latest Developments in Biotechnology," sponsored by the Department of Biotechnology, Ministry of Science and Technology, Govt. of India, New Delhi, and organized by the PG and Research Department of Biotechnology, JJ College of Arts and Science, on 5 January 2024.
- BEST POSTER PRESENTATION Award at the International Conference on Emerging Trends in Chemistry organized by Srimad Andavan Arts and Science College (Autonomous), Tiruchirappalli on 5 and 6 December, 2023.
- BEST POSTER PRESENTATION Award at the National conference on "FRONTIERS IN BIOTECHNOLOGY - 2023" organized by Nandha Arts and Science College, Erode, on 22 September 2023.
- BEST POSTER PRESENTATION Award at the Two Days International Conference on "Unveiling the frontiers in Life Science" organized by Shrimathi Indira Gandhi College, from 17 Aug to 18 Aug, 2023.
- BEST POSTER PRESENTATION Award in the International Conference on Environmental Management and Sustainable Development organized by Holy Cross College, Tiruchirappalli on 25 January 2023. Best Paper Presentation Award in the National Conference on Recent Trends in Biological Sciences organized by GVN College, Kovilpatti on 24-25 January 2023.
- BEST POSTER PRESENTATION Award in the National Conference on Recent Trends in Biological Sciences organized by GVN College, Kovilpatti on 24-25 January 2023.
- BEST POSTER PRESENTATION Award in the International Conference on Recent Trends, Strategies and Technical Advancements in Biological and Biomedical Sciences for Sustainability (RTSTA'22) organized by Seethalakshmi Ramaswamy College, Tiruchirappalli on 14-15 December 2022.
- BEST POSTER PRESENTATION Award in the National Symposium on 'Exploring Innovations in Biosciences and Aristo Fest (NSEIB-2022)' organized by Rathinam College, Coimbatore on 14 October 2022.
- BEST POSTER PRESENTATION Award in the National Seminar on Recent Trends in Plant Sciences and Atmospheric Physics organized by E.S. College, Villupuram on 26 May 2022.
- BEST POSTER PRESENTATION Award in the International Seminar on Sustainable Development and Natural Resources organized by GTN College, Dindigul on 22 March 2022.

RESEARCH GUIDANCE

MSc Dissertation

AWARDED - 16

COLLABORATIONS

Prof. P. Gopinath, Centre for Nanotechnology, IIT Roorkee

- One month Internship in the Centre for Nanotechnology, IIT Roorkee, and Department of Hydrology, IIT Roorkee, for research initiatives and knowledge sharing.

Dr. K. Jagajjanani Rao, Centre for Interfaces & Nanomaterials, Department of Biotechnology, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai

- Rao, K. Jagajjanani, Varuna Kumaravel, Ishwarya Pownraj, Krituparna Saha, Tarangini Korumilli, and Senthil Kumar Sadasivam. "Biosynthesis and photocatalytic evaluation of ZnO nanoparticles using banana flower perianth." Journal of Cleaner Production 380 (2022): 135180. **IF - 11.07**

RESOURCE PERSON

- Nanomaterial synthesis & characterization
- Statistical analysis
- Bioreactor operations
- Downstream processing
- Transfer Phenomena
- Bioinstrumentation Techniques

EVENTS ATTENDED

Seminar	04
Webinar	09
Conference	09
Symposium	02
FDP	04
Workshop	08
Training	05
Conference-Chair	01

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