

# Dr. Smitha V Kamath

M.Sc., PhD

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[Smitha V Kamath](#)

## EDUCATION

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**2019-2024**

**Center for Nano and Material Sciences**

Jain (Deemed-to-be University)

PhD., Chemistry (Material Science)

Thesis: “Functional Nanomaterial-based Membranes and Filtration Kits for Water Purification and Wastewater Treatment”

Advisor: Prof. S. K. Nataraj

**2017-2019**

**St. Aloysius College**

*Silver Medalist*

MSc., Chemistry

**2014-2017**

**St. Aloysius College**

*First class with distinction*

BSc., Chemistry/Microbiology/Zoology

## RESEARCH EXPERIENCE

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**2024**

**PhD, Center for Nano and Material Sciences, Jain (Deemed-to-be University)**

Advised by: Prof. S. K. Nataraj

**2018**

**Graduate Student Researcher, Center for Nano and Material Sciences, Jain (Deemed-to-be University)**

Advised by: Prof. S. K. Nataraj

**2017**

**Undergraduate Researcher, St. Aloysius College, Mangalore**

Advised by: Dr. Hariprasad Shetty

## PUBLICATIONS

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### First author publications

1. **Kamath, Smitha V.**, Halanur M. Manohara, Kanakaraj Aruchamy, Ashok Shrishail Maraddi, Glenita Bridget D'Souza, Kuchangi Naraseeyappa Santhosh, K. N.

Mahadevaprasad, and S. K. Nataraj. "Sorption based easy-to-use low-cost filters derived from invasive weed biomass for dye contaminated water cleanup." *RSC advances* 12, no. 15 (2022): 9101-9111. DOI: [10.1039/D2RA00670G](https://doi.org/10.1039/D2RA00670G)

2. **Kamath, Smitha V.**, Juno Rose Attokkaran, Ashok Shrishail Maraddi, Anita Samage, Glenita Bridget D'Souza, Hyeonseok Yoon, and S. K. Nataraj. "Cello-MOF filters for multifaceted emerging pollutant abatement and their value addition." *Chemical Engineering Journal* 479 (2024): 147805. <https://doi.org/10.1016/j.cej.2023.147805>

3. **Kamath, Smitha V.**, Vishwanath Ankalg, Juno Rose Attokkaran, Sikandar I. Mulla, Kavya Hegde, Ashok Shrishail Maraddi, Anita Samage, Glenita Bridget D'Souza, Hyeonseok Yoon, and S. K. Nataraj. "Closing the sustainability loop: CuO-infused antibacterial cellulose-dominant matrices for multi-tasking wastewater clean-up and energy storage." *Sustainable Materials and Technologies* (2024): e01012. <https://doi.org/10.1016/j.susmat.2024.e01012>

### Contributing author publications

4. Sharma, Vibha T., **Smitha V. Kamath**, Dibyendu Mondal, and Nataraj Sanna Kotrappanavar. "Fe–Al based nanocomposite reinforced hydrothermal carbon: Efficient and robust absorbent for anionic dyes." *Chemosphere* 259 (2020): 127421. <https://doi.org/10.1016/j.chemosphere.2020.127421>

5. D'Souza, Glenita Bridget, Anshu Kumar, **Smitha V. Kamath**, Ashok Shrishail Maraddi, and Sanna Kotrappanavar Nataraj. "Designing engineered biopolymer mesh filter for robust sequestration of chromium (VI), fluoride and other emerging pollutants: a sustainable approach." *Chemical Engineering Journal* 443 (2022): 136462. <https://doi.org/10.1016/j.cej.2022.136462>

6. D'Souza, Glenita Bridget, Ashok Maraddi, Juno Rose, K. N. Mahadevaprasad, **Smitha Kamath**, K. N. Santosh, and S. K. Nataraj. "Green carbon induced super hydrophilic bioFoam filters for hazardous emerging pollutants removal and their sustainable value addition." *Sustainable Materials and Technologies* 37 (2023): e00676. <https://doi.org/10.1016/j.susmat.2023.e00676>

7. Maraddi, Ashok Shrishail, Manohara Halanur Mruthunjayappa, **Smitha V. Kamath**, Glenita D'Souza, Hyeonseok Yoon, and S. K. Nataraj. "A sustainable waste plastic valorisation: conversion of discarded polyurethane into an active micro-cleaner using a DES system." *Green Chemistry* 25, no. 24 (2023): 10538-10548. <https://doi.org/10.1039/D3GC03148A>

8. Santhosh, K. N., K. N. Mahadevaprasad, D. S. Aditya, Ashesh Mahto, Mahaveer Halakarni, **Smitha V. Kamath**, Anshu Kumar, Hyeonseok Yoon, and S. K. Nataraj. "Aminopropyl functionalized iron-phyllsilicate (AIP) engineered composite membrane

for hazardous emerging pollutant treatment." *Journal of Cleaner Production* 457 (2024): 142318. <https://doi.org/10.1016/j.jclepro.2024.142318>

9. Maraddi, Ashok Shrishail, Anshu Kumar, Glenita Bridget D'Souza, **Smitha V. Kamath**, Hyeonseok Yoon, and Nataraj Sanna Kotrappanavar. "CoFe<sub>2</sub>O<sub>4</sub> modified bentonite-based mixed matrix loose nanofiltration membranes for effective wastewater treatment." *Chemosphere* 350 (2024): 141051. <https://doi.org/10.1016/j.chemosphere.2023.141051>

10. Attokkaran, Juno Rose, Anita Samage, **Smitha V. Kamath**, Ashok Shrishail Maraddi, Hyeonseok Yoon, and S. K. Nataraj. "A eutectic mixture catalyzed straight forward production of functional carbon from *Sargassum tenerrimum* for energy storage application." *Journal of Power Sources* 615 (2024): 235050. <https://doi.org/10.1016/j.jpowsour.2024.235050>

11. D'Souza, Glenita Bridget, M. M. Sanjay, Pranav Bhardwaj, Ashok Maraddi, **Smitha Kamath**, Hyeonseok Yoon, and S. K. Nataraj. "Functional bio-foam filters: An effective barrier for microplastic and other emerging pollutant containment." *Materials Today Sustainability* 26 (2024): 100777. <https://doi.org/10.1016/j.mtsust.2024.100777>

12. Samage, Anita, Pramoda Kuppe, Mahaveer Halakarni, Bala Krishnan Ganesan, **Smitha V. Kamath**, Hyeonseok Yoon, and Nataraj Sanna Kotrappanavar. "Room temperature and rapid synthesis of ZnMn<sub>2</sub>O<sub>4</sub> nanostructured spinel using deep eutectic solvent for high energy asymmetric supercapacitors." *Journal of Energy Storage* 97 (2024): 112934. <https://doi.org/10.1016/j.est.2024.112934>

## Review Article

1. **Kamath, Smitha V.**, Manohara Halanur Mruthunjayappa, Dibyendu Mondal, and Nataraj Sanna Kotrappanavar. "Nanocomposite-based high-performance adsorptive water filters: recent advances, limitations, nanotoxicity and environmental implications." *Environmental Science: Nano* 9, no. 7 (2022): 2320-2341. <https://doi.org/10.1039/D2EN00155A>

## Book Chapters

1. **Kamath, Smitha V.**, Kanakaraj Aruchamy, and Nataraj Sanna Kotrappanavar. "Conjugated polymer-based smart composites for optoelectronics and energy applications." In *Polymer-Based Advanced Functional Composites for Optoelectronic and Energy Applications*, pp. 31-49. Elsevier, 2021. <https://doi.org/10.1016/B978-0-12-818484-4.00005-7>

2. **Kamath, Smitha V.**, Juno Rose Attokkaran, and S. K. Nataraj. "Application of Biodegradable Polymers for EDCs Removal From Water." (2024).

## PATENT

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1. S. K. Nataraj, **Smitha V. Kamath**, “MIL-88 (Fe) integrated sugarcane bagasse- derived universal adsorptive filters for water and wastewater treatment and processes thereof” (TEMP/E-1/65723/2022-CHE).

## CONFERENCES

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### Oral presentations

1. **Smitha V. Kamath**, Manohara H. M, Kanakaraj A., Dibyendu Mondal, S. K. Nataraj- oral presentation on the topic “Functionalized carbon helix as an effective adsorbent for cationic dye removal” in a *web international conference on Accelerating Innovations in Material Science (AIMS-2020) held by BMS Institute of Technology and Management* on 4<sup>th</sup> - 7<sup>th</sup> August, 2020.

2. **Smitha V. Kamath**, Juno Rose Attokkaran, S.K. Nataraj- Oral presentation on the topic “Fabrication of one-time use MIL- 88 (Fe) integrated sugarcane bagasse-derived superhydrophilic adsorptive filters for wastewater cleanup” at the *International Workshop and Conference on Membrane Assisted Water Purification Processes (ICMW – 2023) held at Mahatma Gandhi University, Kottayam, Kerala, India.* from 9<sup>th</sup> -12<sup>th</sup>, March 2023.

3. **Smitha V. Kamath**, Juno Rose Attokkaran, S.K. Nataraj- Oral presentation on the topic “Fabrication of one-time use MIL-88 (Fe) integrated sugarcane bagasse-derived superhydrophilic adsorptive filters for wastewater cleanup” in “*International Conference on Futuristic Materials in Science and Technology (ICFMST-2022)*” organized by Department of Chemistry, Bannari Amman Institute of Technology, Sathyamangalam, Erode, Tamil Nadu during 21 - 22 December 2022.

4. **Smitha V. Kamath**, Juno Rose Attokkaran, S.K. Nataraj- Oral presentation on the topic “Fabrication of one-time use MIL-88 (Fe) integrated sugarcane bagasse-derived superhydrophilic adsorptive filters for wastewater cleanup” in in One Day National Conference on "THROUGH THE INSTRUMENTS" held on 22<sup>nd</sup> December, 2022 conducted by Shri Shivayogi Murughendra Swamiji Arts, Science and Commerce College, Athani.

### Poster presentations

1. **Smitha V. Kamath**, Kanakaraj Aruchamy, Manohara H.M., Anita Samage Dibyendu Mondal, S. K. Nataraj\* “Functionalized helical carbon as a microcleaner for the removal of emerging pollutants” presented a poster in an *International Seminar on Advanced Materials & Technology (ICMAT-20) held from 16<sup>th</sup> to 18<sup>th</sup> January, 2020 at Sri Jayachamarajendra College of Engineering, Mysuru.*

2. **Smitha V. Kamath**, Juno Rose Attokkaran, S.K. Nataraj- poster presentation on the topic “Fabrication of one-time use MIL-88 (Fe) integrated sugarcane bagasse-derived superhydrophilic adsorptive filters for wastewater cleanup” under the theme “Materials for Environment” in the *International Conference AFMFP-2022 organized jointly by Dr B. R. Ambedkar National Institute of Technology Jalandhar (India), Sant Longowal Institute of Engineering and Technology (India), Defence Institute of Advanced Technology (India), and Université de Bejaia (Algeria)* during August 06-08,2022.

### **Workshop conducted**

Organized a two-day workshop on “Recent advances in energy and environmental technologies; Entrepreneurial Opportunities in Nanoscience and Technology”, a two-day workshop conducted by PG department of chemistry, *K.L.E. Society’s Raja Lakhamagouda Science Institute in association with Sustainable Materials and Processes Lab, Center for Nano and Material Sciences, Jain University, Bangalore.*

### **FELLOWSHIP**

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DST- NANOMISSION PROJECT (SR/NM/NT- 1073/2016).

### **GUIDING EXPERIENCE**

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- Mentored and supervised six undergraduate and graduate students in research projects.
- Provided guidance on experimental design, data analysis, and manuscript preparation.
- Facilitated meetings to review progress and troubleshoot challenges.
- Supported students in presenting research findings at conferences.
- Nurtured a supportive research environment promoting collaboration and critical thinking.

### **REFERENCES**

**Prof. S.K. Nataraj**

*Research Supervisor,*

Sustainable Materials and Processes Lab,

Centre for Nano and Material Sciences,

JAIN (Deemed-to-be University), Bangalore- 562112

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**Prof. Geetha R. Balakrishna**

*Director,*

Centre for Nano and Material Sciences,

JAIN (Deemed-to-be University), Bangalore- 562112

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