BINDHYA K P

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Kerala, India (34 - Female)

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EDUCATION/ ACADEMIC QUALIFICATION

- **Doctor of Philosophy** (2017-07 to 2021-07), Department of Chemical Engineering, National Institute of Technology, Tiruchirappalli, Tamilnadu, India.
- **Master of Technology in Energy Engineering** with 8.58 CGPA (2012-07 to 2014-06) from National Institute of Technology, Tiruchirappalli, Tamilnadu, India.
- **Bachelor of Technology in Chemical Engineering** with 67.8 % (2007-08 to 2011-05) from Government Engineering College, Thrissur, Kerala, India.

PROFESSIONAL EXPERIENCE

- **Teaching** – (August 2023 – April 2024) as assistant professor (Adhoc), Dept. of Chemical Engg., GEC Thrissur, Kerala.
- **Teaching** – (August 2022 – May 2023) as assistant professor (Adhoc), Dept. of Chemical Engg., NIT Andhra Pradesh.
- **Teaching** – (July 2014-May 2016) as assistant Professor, M. Kumarasamy College of Engineering, Karur, Tamilnadu**.**

TEACHING/MENTOR QUALIFICATIONS

- **2023 current –** Particle Technology Safety Technologies & Management (PG), Introduction to Chemical Engineering, Process Dynamics and Control Laboratory, Heat Transfer Laboratory
- **2022-08 to 2022-12** - Chemical Process Calculations, Mathematical methods in Chemical Engineering, Mass Transfer Laboratory, Process Instrumentation and Control Laboratory.
- **2015-06 to 2016-05** - Engineering Mechanics, Basic Civil & Mechanical Engineering, Thermal Engineering Laboratory
- **2014-07 TO 2015-05 -** Environmental Science & Engineering, Basic Civil & Mechanical Engineering, Principles of Management. Thermal Engineering Laboratory.

RESEARCH/PROJECT EXPERIENCE

DOCTORAL RESEARCH

Thesis Title*:* RECEPTOR TARGETED – HYBRID NANOCARRIER FOR MAGNETICALLY MODULATED DRUG DELIVERY

- **Development of Bio-functionalized nanocarrier materials for targeted drug delivery:** Enhance the efficacy of cancer drugs by targeted delivery employing functionalized nanocarrier materials. Development of suitable carrier materials with stimuli-responsiveness, targetability and biocompatibility along with further optimization and biological evaluation for possible applications in biomedical field.

RESEARCH PUBLICATIONS

- "Dual stimuli responsive nanohybrid carrier targeting biotin receptors for the controlled delivery of eugenol" Indian ChemicaL Engineering Congress (CHEMCON-2020), 27-29 December, 2020, Organized by Indian Institute of Chemical Engineers (Virtual Conference).

1. Bindhya K. Purushothaman, Muni Harsha S, P. Uma Maheswari, K.M. Meera Sheriffa Begum, (2019), Magnetic assisted curcumin drug delivery using folate receptor targeted hybrid casein-calcium ferrite nanocarrier, *Journal of Drug Delivery Science and Technology*, 52, 509-520.
2. Bindhya K. Purushothaman, P. Uma Maheswari, K. M. Meera Sheriffa Begum, (2020), Magnetic casein-CaFe2O4 nanohybrid carrier conjugated with progesterone for enhanced cytotoxicity of citrus peel derived hesperidin drug towards breast and ovarian cancer, *International Journal of Biological Macromolecules.,* 151, 293-304.
3. Rhea Muthappa, Bindhya K. Purushothaman, K. M. Meera Sheriffa Begum, P. Uma Maheswari, (2020), Kinetic Modeling and Optimization of the Release Mechanism of Curcumin from Folate Conjugated Hybrid BSA Nanocarrier, *Chemical Product and Process Modeling*, 15 (1), pp. 20190026.
4. Bindhya K. Purushothaman, P. Uma Maheswari, K. M. Meera Sheriffa Begum, (2021), pH and magnetic field responsive protein-inorganic nanohybrid conjugated with biotin: A biocompatible carrier system targeting lung cancer cells, *Journal of Applied Polymer Science*, 138 (10), art. no. 49949.
5. Bindhya K. Purushothaman, P. Uma Maheswari, K. M. Meera Sheriffa Begum, (2021), Milk protein inspired multifunctional magnetic carrier targeting progesterone receptors: Improved anticancer potential of soybean-derived genistein against breast and ovarian cancers, *Materials Chemistry Physics*, 272, art. no. 125055.
6. Bindhya K. Purushothaman, P. Uma Maheswari, K. M. Meera Sheriffa Begum, (2021) Glutamic acid functionalized casein-calciumferrite magnetic nanosystem based on paired targeting effect for synergistic anticancer therapy, *Materials Letters*, art. no. 130550.
7. P. Uma Maheswari, Rhea Muthappa, Bindhya K. Purushothaman, K. M. Meera Sheriffa Begum, (2021), Evaluation of folic acid functionalized BSA-CaFe2O4 nanohybrid carrier for the controlled delivery of natural cytotoxic drugs hesperidin and eugenol", *Journal of Drug Delivery Science and Technology*, 61, art. no. 102105.
8. Kiruthiga Ramakrishnan, Chandrasekaran Nithya, Bindhya K Purushothaman, Nitesh Kumar, Sukumaran Gopukumar, (2017), Sb_2O_4@RGO Nanocomposite Anode For High Performance Sodium- Ion Batteries, *ACS Sustainable Chemistry And Engineering*, 5,6, 5090-5098.
9. Book Chapter: Samsudeen Naina Mohamed, Boobalan Thulasinathan, Arun Alagarsamy, J. Sharon Mano Pappu, Bindhya K. Purushothaman, Tamilmani Jayabalan, (2022), "Role of Microorganisms in Bioelectrochemical Systems for Hydrogen and Bioelectricity Production", In -Role of Microbes in Industrial Products and Processes , *Wiley*.

INTERNATIONAL CONFERENCES

1. "Kinetic modeling on the release mechanism of curcumin from folate conjugated hybrid BSA nanocarrier" International Conference on Advances and Challenges for Sustainable Eco System (ICACSE), 6-8 December 2018, National Institute of Technology, Tiruchirappalli.
2. "Folic Acid Functionalized BSA-calcium Ferrite Hybrid Carrier for Controlled and Targeted Delivery of Natural Cytotoxic Agents" International Conference on Multifunctional and Hybrid Composite Materials for Energy, Environment and Medical applications (ICMHCEE-2019), 9-11 September 2019, National Institute of Technology, Tiruchirappalli.