ZAINAB MAHMOOD

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EDUCATION

- **PhD:** Biochemical Engineering (Chemical Technology) – *Harcourt Butler Technical University (HBTU), Kanpur*
- **M. Tech:** Biochemical Engineering (Chemical Technology) – *HBTU, Kanpur*
- **B. Tech:** Biotechnology – *Saroj Institute of Technology and Management, Lucknow*

TEACHING EXPERIENCE

- Research associate in HBTU, Kanpur - 3 years of experience

Subject Taught:

- Bioreactor Design and Analysis
- Analytical Methods in Bioprocesses
- Biochemical Engineering
- Bioseparation and Down Stream Processing
- Bioprocess Technology
- Bioprocess Plant Design

SKILLS DEVELOPED

- Effective classroom management
- Curriculum development and enhancement
- Student mentorship and support
- Continuous learning and adaptation to new educational methodologies

TRAINING AND WORKSHOPS

- Completed a ***Certificate course on Skill Development in Advanced Spectroscopic (NMR, HPLC, LC-MS, UV/IR) Techniques*"** organized by CDRI, Lucknow 2022.
- Attended a short-term training program on "***Data analysis and SPSS software***", October 21-25, 2019, Organized by HBTU.
- Attended a workshop on "***Challenges of Civil Engineering Infrastructure in 21st century***", September 23-24, 2019, organized under a twinning arrangement by the Dept. of Civil Engineering, HBTU and Dept. of Civil Engineering, Thiagarajar College of Engineering (TCE), Madurai, Tamil Nadu.
- Awarded for successfully organizing the events during **Genesis 2016**, a technical fest of the Association of Bio Chemical Engineers & Food Technologists, BEFT Department H.B.T.I.

- Attended the "***Bioinformatics workshop*"** held at **IIT, Roorkee**
- Summer training from **CSIR-CIMAP,** Lucknow, on basic instrumentation of biotechnology.
- Industrial Training from **Pepsi Co. India Holdings Pvt. Ltd.**
- Industrial training from **Kanpur Dugdh Utpadak Sahkari Sangh Ltd.**

RESEARCH PROJECT

- Doctoral – "**Microbial synthesis of lipid using bagasse hydrolysate as substrate.*"***
- Master's – "**To investigate Anti-diabetic property of *Pongamia piñata".***
- Bachelor's – **"Development of QSAR Model for Antimalarial Activity"**

PUBLICATIONS

- **Mahmood, Zainab**, Mohit Nigam, and Lalit Kumar Singh. "Metabolic Engineering of Lipid Biosynthesis Pathway to Enhance the Oil Content in Microalgae." In *Recent Advances in Bioprocess Engineering and Bioreactor Design*, pp. 37-63. Singapore: Springer Nature Singapore, (2024).
- **Mahmood, Zainab** and Lalit Kumar Singh "Microbial oil from *R. opacus*: Sustainable biodiesel production." *Research Journal of Chemical Environment* (2024): DOI: 10.25303/2811rjce01070114
- **Mahmood, Zainab**, and Lalit Kumar Singh. "Enhanced production of microbial lipid from *R. opacus* using Bagasse hydrolysate." *Res. J. Chem. Environ.;* Vol. 27(12); 64-75; doi: https://doi.org/10.25303/2712rjce064075; (2023).
- **Mahmood, Zainab**, and Lalit Kumar Singh. "*Rhodococcus opacus* high-cell-density batch cultivation with a bagasse hydrolysate for possible triacylglycerol synthesis." *Biomedical and Biotechnology Research Journal (BBRJ)* 7.2 (2023): 209-217. *DOI:* 10.4103/bbrj.bbrj_55_23
- Shukla, Abhimati, **Zainab Mahmood**, and Lalit Kumar Singh. "Studies on recovery of heavy metals from tannery wastewater." *International Journal of Engineering, Science and Technology* 13.1 (2021): 76-80. *DOI:10.4314/ijest.v13i1.11S*
- Shukla, A., **Mahmood, Z**., Singh, L. K. and Anjum, R. (2018). "*Optimization of L-Glutamic Acid Production using Artificial Neural Network linked Genetic Algorithm followed by External Loop Air-Lift Reactor Study*" IJAR&D Special Issue, pp. 57-64.

CONFERENCES

- **Paper presented** by **Mahmood, Z**., Shukla, A., Singh, L. K on "Microbial Lipids: A Precious Chemical for Biofuel" in "Chemcon 2022 an **International conference** on

sustainability in chemical processes through Digitalization, Artificial Intelligence and Green Chemistry Organised by HBTU, Kanpur (27-30th December, 2022)

- **Paper presented** by **Mahmood, Z**., Singh, L. K on "Microbial lipid synthesis by oleaginous microorganism *Rhodococcus opacus* cultured in sugarcane bagasse hydrolysate", in **International Conference** on "Innovations in Technology & Management" Organized by Goa University-2022 (21-23th December)

- **Paper presented** by **Mahmood, Z**., Singh, L. K on "Single Cell Oil Production and Assessing the Potential of Sugar Bagasse as Culture Medium for Gram +ve Bacteria" in 1st **International Conference** on "Advances in Biopolymers and Composites: Health, Environment and Energy (ABC-HEE 2022)", Organized by Motilal Nehru National Institute of Technology Allahabad, Prayagraj (UP), India -2022 (20-22th October).

- **Paper presented** by **Mahmood, Z.,** Singh, L. K on "High-Cell-Density Batch Fermentation of *Rhodococcus Opacus* Using a Bagasse Hydrolysate for Triacylglycerol Production" in **International Conference** on "Technological Interventions for sustainability (Chem-Conflux22)", Organized by Motilal Nehru National Institute of Technology Allahabad, Prayagraj -2022 (14-16th April).

- **Paper presented** by **Mahmood, Z**., Shukla, A., Singh, L. K on "Current Status of Microbial Fatty Acids" in "The **National Symposium** on "Biotech Breakthrough in Clinic Research and Diagnostics", Organized by Amity University (26-27th February) 2019.

- **Paper presented** by Shukla, A., **Mahmood, Z**., Singh, L. K on "Studies on the recovery of Chromium from tannery wastewater" in the **National conference** on "Current scenario and future trends in Biotechnology (BIOFUTURITY-2018), March 27-28, 2018, Organized by Department of Biotechnology Engineering, Institute of Engineering and Technology, Bundelkhand University, Jhansi.

- **Paper presented** by Shukla, A., **Mahmood, Z**., Singh, L. K on "Optimization of L-Glutamic acid production using Artificial Neural linked Genetic Algorithm followed by external loop Air-lift reactor study", in the **International conference** and integrated meeting on "Prospective of Medical, Food, Pharma and Agro technology: from health to wealth and future challenges", February 19-20, 2018, Organized by Deen Dayal Upadhyay Kaushal Kendra, Rajiv Gandhi South Campus, Banaras Hindu University.

- **Poster presentation** by **Mahmood, Z**., Singh, L. K. on" Production of Cis, Cis-Muconic Acid: An Intermediate for Bio-Nylon Synthesis" in **International Conference** on "Advance Materials, Textiles and Processes (ICAMPT-2017)" Organized by UP Textile Technology Institute, under the aegis of TEQIP-III (14-15 October).

PERSONAL DETAILS

- Name: **Zainab Mahmood**
- Husband's Name: Obaid Zafar
- D.O.B: 09-08-1988
- Marital Status: Married
- Languages Known: Hindi and English
- Permanent Address: 529D/1/432(1B) R.K Puram, Kalyanpur, Lucknow
- Home Ph: 9838547220

REFERENCE

Prof. Lalit Kumar Singh
(Thesis Supervisor)
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School of Chemical Technology,
Harcourt Butler Technical University, Kanpur
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