

# DR ZEENAT ARIF

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**Designation:** Assistant Professor at Harcourt Butler Technical University, Nawabganj,  
Kanpur

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## EDUCATION

- **Ph.D** from Indian Institute of Technology (Banaras Hindu University), Varanasi, India, (Status: Awarded, 2021)  
Discipline: Chemical Engineering  
Specialization: Chemical Engineering  
Research Area: Membrane Separation, Nanotechnology
  - **M.Tech** from NIT Raipur, Chattisgarh, Department of Chemical engineering, Chemical Process in year of passing 2015
  - **B.Tech** from University Institute of Engineering & Technology, CSJM University, Grain year 2013.
  - **XII<sup>th</sup>** from Dr. VSEC, Awadhपुरi, ISC Board in 2008
  - **X<sup>th</sup>** from Dr. VSEC, Awadhपुरi, ICSE Board in 2006
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## PUBLICATIONS

### JOURNALS

- **Zeenat Arif**, Naresh K. Sethy, P. K. Mishra, B. Verma “Study on thermos kinetic modelling of green route synthesized inorganic loading on PVDF membrane for Cr (VI) removal and its optimization” *Journal of Polymer research* 27(2020)257.
- **Zeenat Arif**, Naresh K. Sethy, P. K. Mishra, B. Verma “Green approach for the synthesis of ultrafiltration photocatalytic membrane for tannery wastewater: Modeling and optimization” *International Journal of Environmental Science and Technology* 17(2020) 3397-3410
- **Zeenat Arif**, Naresh K. Sethy, P. K. Mishra, B. Verma “Development of eco-friendly, self-cleaning, anti-bacterial membrane for the elimination of Cr (VI) from tannery wastewater” *International Journal of Environmental Science and Technology*, 17(2020)4265-4280
- Naresh K. Sethy, **Zeenat Arif**, P. K. Mishra, Pradeep Kumar, Nanocomposite film with green synthesized TiO<sub>2</sub> nanoparticles and hydrophobic polydimethylsiloxane polymer: synthesis, characterization, and antibacterial test. *Journal of Polymer Engineering* (2020) 211-220
- Naresh K. Sethy, **Zeenat Arif**, P. K. Mishra, Pradeep Kumar Green synthesis of TiO<sub>2</sub> nanoparticles from *Syzygium cumini* extract for photo-catalytic removal of lead (Pb) in explosive industrial wastewater. *Green Processing and Synthesis* (2020) 171-181
- Naresh K. Sethy, **Zeenat Arif**, P. K. Mishra, Pradeep Kumar, Synthesis of SiO<sub>2</sub> nanoparticle from bamboo leaf and incorporated in

PDMS membrane to enhance its separation properties. *Journal of Polymer Engineering* 39(2020)679-687

- **Zeenat Arif**, Naresh K. Sethy, Lata Kumari, P. K. Mishra, B. Verma, Green Synthesis of TiO<sub>2</sub> nanoparticle using *Cajanus cajan* extract and their Use in Controlling the Fouling of Ultrafiltration PVDF Membranes. *Korean Journal of Chemical Engineering* (2019) 36(7):1148-1156
- **Zeenat Arif**, Naresh K. Sethy, Lata Kumari, P. K. Mishra, B. Verma, Development of antimicrobial and anti-fouling nanocomposite membranes by a phase inversion technique. *Journal of Polymer Engineering* (2019) 39:545-555
- **Zeenat Arif**, Naresh K. Sethy, Lata Kumari, P. K. Mishra, B. Verma, Antifouling Behaviour of PVDF/TiO<sub>2</sub> Composite Membrane: A Quantitative and Qualitative Assessment. *Iranian Polymer Journal* (2019) 28:301-312
- **Zeenat Arif**, A. B. Soni, S. N Victoria, R. Manivannan, Synthesis and characterization of oleic acid capped metallic copper nanoparticle via chemical reduction method. *Journal of The Institution of Engineers (India): Series E.* (2019) pp 1–9 (<https://doi.org/10.1007/s40034-019-00132-6>). [Online ISSN 2250-2491, Print ISSN2250-2483] (Award: **Sri Ram Ganga Memorial Prize** from IICHE)
- **Zeenat Arif**, Naresh K. Sethy, P. K. Mishra, S. N. Upadhayay, B. Verma, Swelling and sorption behavior of PVA and PVA/silica nanocomposite membrane at different silica loadings. *Indian Journal of Chemical technology* (2019) 26:44-51
- **Zeenat Arif**, Naresh K. Sethy, P. K. Mishra, S. N. Upadhayay, B. Verma, “ Investigating the influence of sol gel derived PVA/SiO<sub>2</sub> nano composite membrane on pervaporation separation of azeotropic mixture I. Effect of operating condition”. *Journal of Porous Materials* (2018) 25: 1203-1211
- **Zeenat Arif**, “A Concise review on controlled drug release devices: Models, Delivery Devices”. *The Pharmstudent* 27(2016):79-91

#### CONFERENCE PROCEEDING

- **Zeenat Arif**, P.K.Mishra, B.Verma. “Correlation Between Silica Loading And Pervaporation Permeability of PVA/Silica Hybrid Membrane For Separation Of An Alcohol-Water Mixture”, *International Journal of Research In Science & Engineering*, CHEMCON Special Issue: March 2018, e-ISSN: 2394-8299 p-ISSN: 2394-8280.
- **Zeenat Arif**, A. B. Soni and **R. Manivannan** “Synthesis and Characterization of Oleic Acid Capped Metallic Copper Nanoparticle via Chemical Reduction Technique” 2nd International Conference on Nanotechnology (ICNT-2015), Haldia, and Feb 19-22, 2015 (Proceedings Page No. 220-226, ISBN: 978-81-927756-2-3).

## BOOK CHAPTER

- **Zeenat Arif**, Naresh K Sethy, Pradeep K Mishra, Pradeep Kumar, Pratiksha Pandey Bio based polymeric material for Environmental Remediation, Taylor & Francis 2022 (DOI: <https://doi.org/10.1201/9781003004684>)
- Naresh K Sethy, **Zeenat Arif**, PK Mishra, Rajesh Saha, Nanocatalyst Synthesis by the Green Route: Mechanism and Application, CRC Press Taylor & Francis 2022 (DOI: <https://doi.org/10.1201/9781003004684>)
- **Zeenat Arif**, Naresh K. Sethy, P. K. Mishra, B. Verma “Impact on Groundwater Quality Resources Due to Industrial Effluent” Groundwater Geochemistry: Pollution and Remediation Methods. John Wiley & Sons 2021, Online ISBN:9781119709732
- Naresh K. Sethy, **Zeenat Arif**, K.S. Sista, Pradeep Kumar, PK Mishra, Rajesh Saha “Zero-Valent Iron (ZVI) for Groundwater Remediation” Groundwater Geochemistry: Pollution and Remediation Methods. John Wiley & Sons 2021, Online ISBN:9781119709732
- **Zeenat Arif**, Naresh Kumar Sethy, Swati, Pradeep Kumar Mishra, Bhawna Verma “Grossly Polluting Industries and Their Effect on Water Resources in India” Pollutants and Water Management: Resources, Strategies and Scarcity” John Wiley & Sons 2021, Online ISBN: 9781119693635
- Naresh K. Sethy **Zeenat Arif**, K.S. Sista P.K. Mishra Pradeep Kumar Avinash K. Kushwaha “Advances in Membrane Technology Used in the Wastewater Treatment Process” Pollutants and Water Management: Resources, Strategies and Scarcity” John Wiley & Sons 2021, Online ISBN: 9781119693635
- **Zeenat Arif**, Naresh K. Sethy, Lata Kumari, P. K. Mishra Recent advances in functionalized polymer-based composite photocatalysts for wastewater treatment. Nano-Materials as Photocatalysts for Degradation of Environmental Pollutants. Elsevier <https://doi.org/10.1016/B978-0-12-818598-8.00003-1>
- **Zeenat Arif**, P.K.Mishra, and S.N.Upadhyay. “Drug Delivery: Polymers and Polymeric Membranes”, Encyclopedia of Polymer Applications, First Edition, Taylor & Francis. (DOI: 10.1201/9781351019422-140000358).
- Shilpa Narang, **Zeenat Arif**, P.K. Mishra, and S.N. Upadhyay, Rajeev Mehta. “Polymers and Polymeric Membranes”. Encyclopedia of Polymer Applications, First Edition, Taylor & Francis (DOI: 10.1201/9781351019422-140000310).

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## WORKSHOPS AND CONFERENCES ATTENDED

- **Zeenat Arif**, Pradeep Kumar, ‘Green route synthesized Bi-Functional membranes for treatment of Tannery wastewater’, Poster presentation international conference on Desalination and Water Treatment: Recent Technological Advancement, Challenges and Opportunities (InDACON- 2022), March 26-27,2022 , Jodhpur

- Participated in One Week **Faculty Development Program (FDP) on Modern Innovation in Chemical Engineering and Technology (MICET)** August 9-13, 2021 at HBTU, Nawabganj Kanpur
- **Best oral presentation- Zeenat Arif**, Naresh K Sethy , Swati, P.K. Mishra , Pradeep Kumar, 'Synthesis of poly vinyl alcohol (PVA) / graphene oxide (GO) and PVA / silica (SiO<sub>2</sub>) cross- linked nanocomposite membranes and their application in pervaporation ', Oral presentation International conference on " Innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy " IOCSE 2020, February 27-29,2020 ,Agra
- Naresh K Sethy , **Zeenat Arif** , Avinash Kumar Kushwaha, P.K.Mishra, Pradeep Kumar , 'Green Synthesis of TiO<sub>2</sub> Nanoparticle and its application as a photocatalyst for dye degradation ', Oral presentation , International Conference on Innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy " IOCSE 2020,February 27-29, 2020, Agra
- **Zeenat Arif** , Naresh K Sethy, Vimal Kumar Bind , P.K.Mishra, Pradeep Kumar,' Comparative study of suspended and immobilized TiO<sub>2</sub> Nanoparticles to treat wastewater containing hexavalent chromium ' Oral presentation , International conference on innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy " IOCSE 2020, February 27-29, 2020, Agra
- **Best oral presentation- Pratiksha Pandey, Zeenat Arif**, Naresh K. Sethy, Pradeep K. Mishra, "Fabrication of photocatalytic PVDF film immobilized with TiO<sub>2</sub> nanoparticles for removal of thiazine dye from water" Oral presentation, 15<sup>th</sup> annual session of Indian Institute of Chemical Engineers, SCHEMCON 2019, October 17-18, 2019, Ankleshwar, Gujarat, India.
- Rajesh Saha, Naresh K. Sethy, **Zeenat Arif**, Pradeep K. Mishra, "Synthesis and characterization of TiO<sub>2</sub> nanoparticles by green route from waste leaf extract " Oral presentation, 15<sup>th</sup> annual session of Indian Institute of Chemical Engineers, SCHEMCON 2019, October 17-18, 2019, Ankleshwar, Gujarat, India.
- Oral presentation, 2<sup>nd</sup> International conference on Nanaomaterials, Materials and Manufacturing Engineering, ICNMM 2019, May 17-19, 2019, Bangkok, Thailand.
- Oral presentation, 71<sup>th</sup> Annual Session of Indian Institute of Chemical Engineers CHEMCON – 2018, December 27– 30, 2018 Dept. of Chemical Engineering, NIT Jalandhar.
- Poster presentation, 70<sup>th</sup> Annual Session of Indian Institute of Chemical Engineers CHEMCON – 2017, December 27– 30, 2017 Dept. of Chemical Engineering, Haldia Institute of Technology.

- Poster presentation, 69<sup>th</sup> Annual Session of Indian Institute of Chemical Engineers CHEMCON – 2016, December 27– 30, 2016 Dept. of Chemical Engineering, Anna University and IIT(Madras).
- Oral presentation, 2<sup>nd</sup> International Conference on Nanotechnology (ICNT–2015), February 19– 22, 2015 Dept. of Chemical Engineering, Haldia Institute of Technology and Haldia regional centre, Indian Institute of Chemical Engineers.
- Oral presentation in National Conference on Nanoscience and Nanotechnology (NCNN-2014). Faculty of Pharmaceutical Sciences of Shri Shankaracharya Group of Institutions, Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh sponsored by INDIAN NATIONAL SCIENCE ACADEMY (INSA), New Delhi.
- Certificate of participation in seminar on ‘Avenues in Aeronautical R & D for Indian Defense’ held at IIT (BHU), Varanasi on March 10, 2018.
- Participated in InSpire-2017, at IIT (BHU) held on March 25, 2017.
- Volunteer in InSpire-2017, at IIT (BHU) held on March 25, 2017.
- Certificate of participation for “Author workshop jointly organized by Springer Nature, BHU & IIT BHU” held on October 7, 2016.
- Volunteer in InSpire-2016, at IIT (BHU) held on January 29-30, 2016 sponsored by MNRE and DST, New Delhi.
- Participated in 1 week short course on “Structure and Characterization of Material” by Knowledge Incubation for TEQIP IIT Kanpur held on December 22-26, 2014.
- Volunteer in 2 days workshop on “Renewable Energy and Environment (REE-14), 12<sup>th</sup>-13<sup>th</sup> June, 2014, Department of Chemical Engineers, NIT Raipur.
- Participated in 2 days workshop on “Renewable Energy and Environment (REE-14), 12<sup>th</sup>-13<sup>th</sup> June, 2014, Department of Chemical Engineers, NIT Raipur.
- Participated in 1 week workshop on ‘Simulation of Flow Processes Using CFD (SFPCFD-2014)’ held during June 02-06.2014 at Department of Chemical Engineers, NIT Raipur.
- Participated in Workshop on Academics Ethics and IPR on May 14, 2015 organized by NIT Raipur and Chhattisgarh Council of Science & Technology

#### EXPERIENCE

- Project Assistant in NAMAMI GANGA Project : **Industry Inspection certificate** for monitoring of 166 Grossly Polluting Industries (GPIs) allotted to IIT(BHU) by **Central Pollution Control board** in 2017
- Project Assistant in NAMAMI GANGA Project: **Industry Inspection certificate** for monitoring of 321 Grossly Polluting Industries (GPIs) allotted to IIT(BHU) by **Central Pollution Control board** in 2018
- Project Assistant in NAMAMI GANGA Project: **Industry Inspection certificate** for monitoring of 258 Grossly Polluting Industries (GPIs) allotted to IIT(BHU) by **Central Pollution Control board** in 2019

- Project Assistant in NAMAMI GANGA Project: **Industry Inspection certificate** for monitoring of 275 Grossly Polluting Industries (GPIs) allotted to IIT(BHU) by **Central Pollution Control board** in 2020
  - Project Assistant in Drain monitoring for monitoring of 48 industrial/domestic/mixed drain allotted to IIT(BHU) by **Central Pollution Control board** in 2020
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#### **ACHIEVEMENTS**

- **Sri Ram Ganga Memorial Prize** from **IICHE** for paper entitled “Synthesis and characterization of oleic acid capped metallic copper nanoparticle via chemical reduction method published in Journal of The Institution of Engineers (India): Series E”.
  - **Gold Medalist** in B. Tech 2013.
  - **Silver Medalist** in M. Tech 2015.
  - Cleared **GATE** in 2013
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#### **EXTRACURRICULAR ACTIVITIES**

- **Associate Member** of Indian Institute of Chemical Engineers (**IICHE**) (LM-61170)

#### **REVIEWER**

- **Journal of Applied Polymer Science** (Manuscript Number: app.20183305)
- **Polymer Bulletin**
- **Polymer Composite**

#### **INTERNSHIP**

- Winter Intership Program, by Knowledge Incubation for TEQIP, IIT Kanpur (07.12.2014 to 27.12.2014)
- Vocational training at **Indian Oil Corporation**, Mathura Refinery from 01.06.2012 to 29.06.2012 at production department.

#### **OTHER ACTIVITY**

- Event coordinator of ‘TECHMART’ 12 in technical fest of the University Institute of technology, CSJM University held on January 09-10, 2012
  - Certificate of participation in Spandan’12 held on April 10-11, 2012.
  - Certificate of participation in Quiz contest organized by IICHE held on April 10-11, 2012 at UIET, CSJM university
  - Certificate of participation in Techmart 11 held on February 25-27, 2011
  - Certificate of participation for Young Scientist talent Test on October 09, 2005
  - Certificate of Merit for painting competition in International Youth Fest held on November 06, 2004.
  - Won 3<sup>rd</sup> Prize in Three Legged race in annual sports of 2000-2001
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