

Name of Faculty Dr. HARSHA NAGAR  
 Designation Assistant Professor  
 Nature of Job/Appointment Regular  
 Date of Joining 11 – 07 - 2019  
 E-mail harshanagar\_chem@cbit.ac.in



Education Qualifications	Name of the Degree	Class
Ph. D	Doctor of Philosophy (Chemical Engineering)	Completed
PG	Ms. Tech (Chemical Engineering)	Distinction
UG	BE (Chemical Engineering)	Distinction

Work Experience

Teaching	02 Year
Research	06 years
Industry	--
Others	--

Area of Specialization Chemical Engineering, Membrane Separation, Fuel Cell, Effluent Treatment, Mass Transfer  
 Professional Memberships IICHE (Indian Institute of Chemical Engineers, Membership No.: LAM-70968)

Responsibilities held at Institution Level --

Responsibilities held at Department Level

1. ISO Coordinator,
2. Department Website Coordinator
3. Session Chair in concept idea presentation in SUDHEE (CHEMSPARK 2K19)
4. Coordinators SUDHEE (CHEMSPARK-2K19) Rangoli, Flash Mob and Discipline Team
5. NIRF Coordinator
6. Class Teacher (3<sup>rd</sup> Year VI sem)
7. IICHE Coordinator

Research Guidance UG Students (10 Nos.)

Awards Received

1. M.P Chary Award 2020 in SCHEMCON on topic entitled Synthesis and Characterization of aromatic polymer blend membrane for fuel cell applications.
2. Best Paper Presentation Award in 2020 at Recent Advances in Chemical Engineering (RACE) International Conference organized at OU, Hyderabad, 2020. Topic entitled "Molecular Dynamics Analysis of Modified Polyethersulfone Membrane for Fuel Cell Applications".
3. Received the CIPET National award in 2018 for innovation of 'Inexpensive Ultrafine Hollow Fiber Membrane Module for Drinking Water Purification' by Shri M. Venkaiah Naidu at Centenary Auditorium, University of Madras, Chennai.
4. Received Gandhian Young Technology award in 2017 at Rashtrapathi Bhavan, New Delhi for "Design of Highly Efficient and Inexpensive Membrane Equipment as Import Substitutes for Demineralized Water Production".
5. Best Poster Presentation award in 2016 at International conference at Loyola Academy Degree and PG College, Hyderabad. Topic entitled "Synthesis and evaluation of polyvinyl chloride and poly Sulfone based composite

	electrolyte membranes for Direct Methanol Fuel Cell applications".
	<ol style="list-style-type: none"> <li>6. Received the CIPET National award in 2016 at FICCI, Federation House, Tansen Marg, New Delhi given by Shri Ananth Kumar in the area of "Promoting Industrial Development and Societal Welfare through Innovative Membrane Technology".</li> <li>7. Received best publication award in 2015 at Chemical Engineering Science at CSIR IICT, Hyderabad. Topic entitled "Air Separation by Facilitated Transport of Oxygen through Pebax Membrane Incorporated with Cobalt Complex".</li> <li>8. Best Oral Presentation award in 2012 at National conference at Vasavi College Hyderabad 2012. Topic entitled "Synthesis and Characterization of Acid - Base Blend Membranes for Fuel Cell Applications".</li> </ol>
Courses Handled at Under Graduate / Post Graduate Level.	Mass Transfer Operations-I, Membrane Separation Technology, Polymer Science and Technology
No. of Papers Published	National Journals – Nil                      International Journals – 10 National Conference – 03                      International Conference – 13
Projects Carried out	<p>My research work is based on synthesis of proton conducting fuel cell membrane additionally I assist the Scientist in the following Industrial and Govt. funded sponsored projects especially in the area of water and wastewater treatment through membrane technology at CSIR-IICT.</p> <ol style="list-style-type: none"> <li>1. Design and development of 5000L/h capacity Nanofiltration plant for the separation of chlorides from Tata Steel industrial effluent.</li> <li>2. Development of Membrane and Adsorbent Technology Platform for Effective Separation of Gases&amp; Liquids.</li> <li>3. Deployment of Water Purification Plants in Rural Areas.</li> <li>4. Designed the highly compact cost-effective RO/Nanofiltration system with varying capacities of 50-200 LPH for the small helmets.</li> <li>5. Developed novel low-cost cascaded RO System for Production of Zero TDS Water for Biotech Industry and medical grade purpose to replace expensive, imported Millipore systems in 2016.</li> </ol>
Patents	--
Technology Transfer	<p>Worked as Team Member in the following Technology Transfer</p> <ol style="list-style-type: none"> <li>1. Highly compact cost-effective RO/Nanofiltration system with varying capacities of 50-200 LPH for the small helmets.</li> <li>2. Novel low-cost cascaded RO System for Production of Zero TDS Water</li> </ol>
Invited Speaker	--
No. of Books/Chapter Published with details	<p>Book Chapter Published: 6</p> <ol style="list-style-type: none"> <li>1. Published one book chapter Microbial Fuel Cell: A Potential Solution for Desalination. Book Titled "Sustainable Technologies for Water and Wastewater Treatment", 2021, Taylor and Francis group, CRC press.</li> <li>2. Published one book chapter Vapor Permeation: Theory and Modelling Perspectives. Book Titled "Membrane Processes: Pervaporation, Vapor Permeation and Membrane Distillation for Industrial Scale Separations", 2018, Wiley Scrivener Publishing LLC.</li> <li>3. Published one book chapter Polyion complex membranes for Polymer electrolyte and Direct Methanol fuel cell applications. Book Titled "Membrane Technology:</li> </ol>

Details of Short-Term Training Programs/Faculty Development Programs/Seminars/ Workshops. Other Trainings (Attended and/or Organized).

- Sustainable Solutions in Water, Health, Energy and Environmental Sectors”, 2018, Taylor & Francis Group, LLC.
4. Published one book chapter Development of Sulfonated Polyethersulfone/ Matrimid Acid-Base Blend Membrane for Energy Production Through Fuel Cells. Book Titled “Energy Engineering”, 2017, Springer Nature Singapore Pte Ltd.
  5. Published one book chapter Sulfonated Polyethersulfone/Torlon Blend Membrane Incorporated with Multiwalled Carbon Nanotubes for Energy Production from Kitchen Wastewater Using Microbial Fuel Cell. Book Titled “Energy Engineering”, 2017, Springer Nature Singapore Pte Ltd.
  6. Published one book chapter Water Management: An Overview” Science for society. Book Titled “Science for Society”, 2014, APAS ISBN No: 0970–2911.
    1. Participated in AICTE Training And Learning (ATAL) Academy Online FDP on "Waste Technology" from 2020-10-12 to 2020-10-16 at University College of Engineering, Anna University, Tiruchirappalli
    2. Participated and completed STTP on “Industrial Pollution and Control Strategies” organized by Department of Chemical Engineering, Anurag Group of Institutions, Hyderabad during Oct. 5th to 10th 2020.
    3. Participated in Online Workshop on Social Responsibility and Community Engagement conducted by “Chaitanya Bharathi Institute of Technology” on 17<sup>th</sup> June 2020.
    4. Successfully Completed “Write Professional Emails in English” an online non-credit course authorized by Georgia Institute of Technology and offered through Coursera on 05-07-2020.
    5. Participated the India First Leadership Talk Webinar with Ms. Ashwini Deshpande (Co-Founder & Director Elephant Design)., 6<sup>th</sup> June 2020 conducted by MHRD's Innovation Cell.
    6. A One-week online Faculty Development Program on “Materials: Recent Trends & Engineering Applications”, Gokaraju Rangaraju, Institute of Engineering and Technology, during 02-07<sup>th</sup> June 2020.
    7. A three-day online Faculty Development Program on “Municipal Solid Waste Management during Covid-19 Pandemic” conducted by Anurag Group of Institutions, Hyderabad from 28-30 May 2020.
    8. A one-week online Faculty Development Program on “Outcome Based Education: A Step Towards Excellence” from 11-15<sup>th</sup> May 2020 under Margdarshan Scheme of AICTE, New Delhi.
    9. Participated in a 3-day webinar series on “Python in Data Processing” organized by Department of Information Technology from 11-13<sup>th</sup> May 2020.
    10. Online Faculty Development Program on “Machine Learning and AI using Python” conducted by Electronics and ICT Academy, IIT Roorkee from 27 April-06 May 2020.
    11. Participated the India First Leadership Talk Webinar with Mr Mahesh Babu CEO Mahindra Electric Mobility Ltd., 23<sup>rd</sup> May 2020 conducted by MHRD's Innovation Cell.
    12. Participated the India First Leadership Talk Webinar with Dr. Nilesh N Oak, Expert (Indian Civilization & History), 30<sup>th</sup> May 2020 conducted by MHRD's Innovation Cell.
    13. Participated the India First Leadership Talk Webinar with Dr. Pramod Chaudhari, Founder, Chairman, Praj Industries Limited. 16<sup>th</sup> May 2020 conducted by MHRD's Innovation Cell.

14. Participated in the webinar on “Sustainable Development Goals -Access to Improved Governance on 18/04/2020 by CIPS.
15. Participated in the IIC Online Sessions conducted by Institution's Innovation Council (IIC) of MHRD's Innovation Cell, New Delhi to promote Innovation, IPR, Entrepreneurship, and Start-ups among HEIs from 28<sup>th</sup> April to 22<sup>nd</sup> May 2020.
16. Successfully Completed “Understanding Research Methods” University of London and SOAS University of London and offered through Coursera on 05-05-2020.
17. Attended two-day Rural Immersion Training Camp organized by CBIT on 14-15 November 2019.
18. Attended one-week Faculty Development Program on “Design & Analysis of Experiments & Optimization Techniques” from 13-17<sup>th</sup> November 2018 conducted by Anurag Group of Institutions, Hyderabad.

Details of Journal Publications/  
Conferences (National and  
International)

**International Journal from the year 2017**

1. K Naresh, Harsha Nagar, Vineet Aniya, (2021) Thermodynamic Measurements and Correlation of Properties for Tribromomethane, Journal of Solution Chemistry, Volume 50, pp. 723–751.
2. Abhilash Reddy, Harsha Nagar, Bankupalli Satyavathi, Vineet Aniya (2020) “Phase equilibria and thermophysical properties of dibromomethane: Measurement and correlation studies”, Journal of Molecular liquids, Volume 306, pp. 11297.
3. Harsha Nagar, Vineet Aniya (2020) “High proton conductivity dual modified ionic crosslink membrane for fuel cell application at low humidity condition with molecular dynamics simulations”, Renewable Energy. DOI: <https://doi.org/10.1016/j.renene.2020.06.026>.
4. Harsha Nagar, Vineet Aniya (2020) “Microporous Material Induced Composite Membrane with Reduced Oxygen Leakage for MFC Application”, Journal of Environmental Chemical Engineering, Volume 8, Issue 5, pp. 104117
5. Harsha Nagar, Nivedita Sahu, V. V. Basava Rao, S. Sridhar (2020) “Surface modification of sulfonated polyethersulfone membrane with polyaniline nanoparticles for application in direct methanol fuel cell”, Renewable Energy. Volume 146, pp. 1262-1277.
6. Harsha Nagar, N. Badhrachalam, V. V. Basava Rao, S. Sridhar (2019) “A novel microbial fuel cell incorporated with polyvinylchloride / 4A zeolite composite membrane for kitchen wastewater reclamation and power generation”, Material Chemistry and Physics, Volume 224, pp.175-185.
7. Harsha Nagar, V. V. Basava Rao, S. Sridhar (2017) “Synthesis and characterization of Torlon based polyion complex for direct methanol and polymer electrolyte membrane fuel cells”, Journal of Material Science, Volume 52, pp. 8052-8069.

**International /National Conferences from the year 2017**

1. Harsha Nagar, Vineet Aniya (2020) “Biochar loaded membrane for microbial fuel cell applications”, International e-conference on materials processing & characterization, CBIT Hyderabad
2. Nemmadhi Chethan, Harsha Nagar (2020) Application of Artificial Intelligence In E-Waste Management, CHEMCON 2020, pp 123.
3. Saranya Ch., Harsha Nagar, Vineet Aniya, Raja Rao (2020) “Biochar Valorization for Kitchen Wastewater Treatment through Microbial Fuel Cell” CHEMCON 2020, pp 129.
4. Harsha Nagar (2020) “Molecular Dynamics Analysis of Modified Polyethersulfone Membrane for Fuel Cell Applications”, International Conference on Recent Advances in Chemical Engineering, pp.56.
5. T. Nagamani, Harsha Nagar, S. Sridhar (2019) “Nanofiltration – Pervaporation Integrated Membrane Process for Production of Ultrapure Ethylene Glycol for Applications of Semiconductor Industries”, Translational Research Trends in Process Engineering (TRTPE).
6. Sowmya Parakala, Harsha Nagar, S. Sridhar (2019) “Extraction of High Purity Grade Hydrochloric Acid for Semiconductor Applications via Vacuum Membrane Distillation”, Translational Research Trends in Process Engineering (TRTPE).

**Articles contributed in Encyclopedia: 3**

**Popular Articles in Magazine: 3**