FACULTY PROFILE

- NAME : Dr. Baijnath
- DESIGNATION: Lecturer Chemical Engineering
- QUALIFICATION: Ph.D. Chemical Engineering (2020), IIT Delhi, India
- EXPERIENCE:
  - **Lecturer Chemical Engineering** (15/01/2022 - Present), Government Polytechnic Kanpur
  - **Scientist 'C'** (13/02/2021 – 14/01/2022), Material Science Division, Shriram Institute for Industrial Research, Delhi
  - **Project Associate** (13/02/2020 – 12/02/2021), Material Science Division, Shriram Institute for Industrial Research, Delhi
- EMAIL: baijnath.che@gmail.com
- RESEARCH INTERESTS:
  - Solid oxide fuel cells
  - Advanced nanostructured materials
  - Electroceramics for energy storage and conversion devices
  - Nanoparticle synthesis and catalytic reaction mechanism development
- TEACHING AREAS: Chemical Engineering

  Courses Taught
  - Process Equipment Design
  - Process Control
  - Mass Transfer Operations
  - Material and Energy Balance
  - Fluid Mechanics & Solid Handling
  - Chemical Reaction Engineering & Thermodynamics
- PUBLICATIONS:

  Research Articles

- ‘Electro-oxidation of ethylene glycol on Pt-Co metal synergy for direct ethylene glycol fuel cells: reduced graphene oxide imparting a notable surface of action’ International Journal of Hydrogen Energy, 2019 (Impact Factor: 8.1).
- ‘Cobalt and molybdenum co-doped $Ca_2Fe_2O_5$ cathode for solid Oxide fuel cell’ International Journal of Hydrogen Energy, 2019 (Impact Factor: 8.1).
- ‘Fabrication and Electrochemical Performance of $La_{0.5}Sr_{0.5}CoO_3$ Impregnated Porous YSZ Cathode’ Ionics, 2017 (Impact Factor: 2.6).
- ‘Synthesis and Performance of $La_{0.5}Sr_{0.5}CoO_3$ Cathode for Solid Oxide Fuel Cells’ Advanced Materials Letters, 2017 (Impact Factor: 1.5).
- ‘A Comparative Study of the Removal Efficiency of Calcium Hydroxide and Sodium Hydroxide as Precipitating Agents for Chromium (III)’ Journal of Civil Engineering and Environmental Technology, 2014.

Book Chapters Published

- ‘Sensing Materials: Bimetallics and Metal Mixtures (Core Shell Microspheres)’ Encyclopedia of Sensors and Biosensors, Elsevier, Volume 2, 2023, Pages 204-211.

- WORKSHOP/CONFERENCES:

International Conferences

- ‘Molybdenum and Cobalt doped $SrFe_{1-X}M_xO_3$ and $Ca_2Fe_{2-X}M_xO_5$ Cathode for Low and Intermediate Temperature Solid Oxide Fuel Cell’, 256th American Chemical Society National Meeting & Exposition, Boston, Massachusetts, United States of America, 19-23rd August, 2018.
- ‘Molybdenum and Cobalt doped $SrFe_{1-X}M_xO_3$ and $Ca_2Fe_{2-X}M_xO_5$ Cathode for Low And Intermediate Temperature Solid Oxide Fuel Cell’, 9th International Conference on Hydrogen Production, Zagreb, Croatia, Europe, 16-19th July, 2018.
- ‘Strontium doped Molybdenum Cobaltite as Cathode Material for Solid Oxide Fuel Cell’, Conference on Electrochemistry in Advanced Materials, Corrosion and Radiopharmaceuticals, Bhabha Atomic Research Centre, Mumbai, 15-17th February, 2018.
- ‘Strontium Doped Tungsten Cobaltite as Cathode Material for Solid Oxide Fuel Cell’, Second International Conference on Electrochemical Science and Technology, IISc Bangalore, 10-12th August, 2017.
- ‘Fabrication and Electrochemical Performance of $La_{0.5}Sr_{0.5}CoO_3$ Impregnated Porous YSZ Cathode’, 15th Asian Conference on Solid State Ionics, IIT Patna, 27-30th November, 2016.
- ‘Synthesis and Performance of $La_{0.5}Sr_{0.5}CoO_3$ Cathode for Intermediate Temperature Solid Oxide Fuel Cells’, International Conference on Materials Science & Technology, Delhi University, 01-04th March, 2016.
- ‘Comparative Study of Lanthanum Strontium Cobaltite Cathode Material for Low Temperature Solid Oxide Fuel Cell Synthesized by Different Methods’, 5thInternational Conference on Advances in Energy Research, IIT Bombay, 15-

17th December 2015.

- 'A Comparative Study of the Removal Efficiency of Calcium Hydroxide and Sodium Hydroxide as Precipitating Agents for Chromium (III)', 4th International Conference on Advances in Architecture, Urban Planning, Material Engineering and Civil/Environmental Dynamics, Jawaharlal Nehru University, Delhi, 26-27th July, 2014.

- PROFESSIONAL MEMBERSHIP:

  - Member, American Chemical Society
  - Member, International Association for Hydrogen Energy
  - Member, Indian Institute of Chemical Engineers

- EXTRA CURRICULAR INVOLVEMENT:

  - Student Welfare Committee
  - Examination Committee

- ADDITIONAL INFORMATION:

  - Research Article selected in **top 10% research papers** in Division of Energy and Fuels for Sci-Mix session at ACS Conference, Boston, Massachusetts, USA (2018).
  - **DST Young Scientist International Award**, ICH2P and ICRIC Conferences, Zagreb, Croatia, EUROPE (2018).
  - Member, Organizing Committee of OPEN HOUSE (Institute Research Day), Department of Chemical Engineering, IIT Delhi, INDIA (2017 - 2018).
  - Member, Research Scholar Committee (RSC), Department of Chemical Engineering, IIT Delhi, INDIA (2015-2019).
  - Research Fellowship, Ministry of Human Resource Development (MHRD), INDIA (2012-2019).