

Sujoy Bose

Assistant Professor



Key Research Areas:

- Low-cost ceramic membranes
- Catalytic membrane and membrane reactors
- Light-weight ceramics
- Nanofluids

Contact:

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Location: Room No. – **CH 101** (Chemical Engineering Building)

Education:

Doctor of Philosophy (Chemical Engineering), Indian Institute of Technology, Guwahati, India, 2015

M. Tech. (Chemical Engineering), National Institute of Technology, Durgapur, India, 2011

B. Tech. (Chemical Engineering), Durgapur Institute of Advanced Technology & Management, Durgapur, India, 2008

Major Research Interest (s):

- Low-cost ceramic membrane and its application
- Light weight ceramics fabrication and its application
- Catalytic membrane & membrane reactor
- Nanofluids fabrication & its application

Publication (s):

Peer Reviewed Journals:

- **Sujoy Bose** and Chandan Das, “Preparation and characterization of low cost tubular ceramic support membranes using sawdust as a pore-former”, **Materials Letters**, 110, (2013), 152-155.
- **Sujoy Bose** and Chandan Das, “Role of binder and preparation pressure in tubular ceramic membrane processing: Design and optimization study using response surface methodology (RSM)”, **Industrial & Engineering Chemistry Research**, 53 (31), (2014), 12319-12329.
- **Sujoy Bose** and Chandan Das, “Sawdust: From Wood Waste to Pore-former in the Fabrication of Ceramic Membrane”, **Ceramics International**, 41 (3), Part A, (2015), 4070-4079.
- **Sujoy Bose** and Chandan Das, “Preparation, characterization, and activity of activated γ -alumina-supported molybdenum/cobalt catalyst for the removal of elemental sulfur”, **Applied Catalysis A: General**. 512, (2016), 15-26.
- Mridul Krishnam, **Sujoy Bose**, Chandan Das, “Boron nitride (BN) nanofluids as cooling agent in thermal management system (TMS)”, **Applied Thermal Engineering**. 106, (2016), 951-958.

- **Sujoy Bose** and Chandan Das, “Solid Lubricant-based Coating of Catalyst on the Surface of Tubular Ceramic Support for Catalytic Membrane Fabrication”, **International Journal of Applied Ceramic Technology**. (Under review)
- **Sujoy Bose**, Rishiket Kundu, Chandan Das, “Catalytic recovery of elemental sulfur using a novel catalytic membrane reactor at room temperature with a layer of dispersed Mo-Co/ γ -Al₂O₃ catalyst: Reaction kinetics and Mass transfer study”, **Journal of Membrane and Separation Technology**. 6 (1), (2017), 28-39.

National Conferences:

- **S. Bose** and C. Das, “**A morphological and mechanical study of an eco-ceramic membrane influenced by parameters**”, Innovative approaches for food security and health care for better tomorrow, 66th Annual Session of Indian Institute of Chemical Engineers, 27-30 Dec, 2013, ICT Mumbai (**CHEMCON-2013**), 2013.
- R. Kundu, **S. Bose** and C. Das, “**Catalytic membranes and membrane reactors: A novel separation scheme.**” **REFLUX 2.0**, Annual Chemical Engineering symposium, 29th – 30th March 2014, IIT Guwahati, Assam, India.
- P. Parui, S. Bose, “Ceramics with the help of nanotechnology: A review,” **All India Student’s Conference on “Innovative Technical Education”**, 20-21 April, 2018, DIATM, Durgapur, West Bengal, India.

International Conferences:

- **S. Bose** and C. Das, “**Catalytic membranes and membrane reactors to achieve a green environment: A review**”, 12th International Conference on Inorganic Membranes (**ICIM – 2012**), 9 -13 July 2012, University of Twente, Enschede, The Netherlands.
- **S. Bose** and C. Das, “**Fabrication of low cost ceramic membrane from organo-polymeric wood precursors**”, Processing and fabrication of Advanced Materials XXI (**PFAM - 21**), 10-13 December 2012, Indian Institute of Technology, Guwahati, Assam, India.
- **S. Bose** and C. Das, “**Utilities and basic functions of ceramic membranes in catalytic membrane and membrane reactors**”, International conference on Sustainable Technologies for Energy and Environment in Process Industries, 65th Annual Session of Indian Institute of Chemical Engineers, 27-30 Dec, 2012, NIT Jalandhar (**CHEMCON-2012**), India.
- **S. Bose** and C. Das, “**Study of microstructures of ceramic-wood composites**”, Fourth International Conference on Recent Advances in Composite Materials (**ICRACM-2013**), IIT BHU, 18-21 February, 2013, Goa, India.
- **S. Bose** and C. Das, “**Influence of Porosity on Flexural Strength and Flexural Modulus of an Eco-Ceramic Membrane**”, International Conference on Mechanical, Industrial and Materials Engineering, (**ICMIME-2013**), RUET, 1-3 November, 2013, Rajshahi, Bangladesh.
- **S. Bose**, S. Saha, C. Das, “**Investigation of morphological and mechanical behaviour of a ceramic membrane based on different parameters**”, International Conference on Membranes and Applications, (**ICMA-2013**), CSIR-CGCRI, 22-23 November, 2013, Kolkata, India.
- **S. Bose** and C. Das, “**Fabrication of Catalytic Membrane and Membrane reactor: an Economic and Innovative Route**”, Advances in Refractory and Reactive Metals and Alloys, (**ARRMA-2016**), BAARC, 27-29 January, 2015, Anushaktinagar, Mumbai.

Book (s):

- Chandan Das and Sujoy Bose, Advanced Ceramic Membranes and Applications, **CRC Press, Taylor & Francis, 2017, ISBN 9781138055407**

Awards & Recognitions:

- National Doctoral Fellowship from 2011-2015 under MHRD
- Best Theme Award for Chemcon 2015, IChE.

Present and Positions Held:

- **Assistant Professor:** Durgapur Institute of Advanced Technology and Management, February 2018-present
- **Assistant Professor (on contract):** National Institute of Technology Calicut (July 2015 - November 2017)

Professional Affiliation (s):

- Life Associate Member of Indian Institute of Chemical Engineers (IChE), (LAM – 61192), India

Other Activity:

- Executive committee member, IChE Guwahati Regional Centre, IChE-GRC, 2013-2014
- Member of Time Table (Routine) Committee, Department of Chemical Engineering, DIATM, 2018

Workshop/Short Term courses Attended/Organized:

- Workshop on "**Engineering optimization using Matlab and Excel**", February 29- March 2, 2012, IIT Guwahati (Organized by Department of Civil and Mechanical Engineering, IIT Guwahati).
- National course on "**Membrane Technology and Application**", December 9-10, 2014, IIT Guwahati conducted under the Technical Education quality Improvement programme sponsored by MHRD, Govt. of India. (Organized by Centre for Educational Technology, IIT Guwahati).

Students Guided:

- No. of B.Tech students guided: 04 (completed)

Courses Taught:

UG Course (s)

Transport Phenomena
 Membrane Technology
 Material Science
 Ceramic Technology
 Environmental Studies
 Project Engineering
 Nanotechnology
 Separation Process II

UG Laboratory

Heat transfer
 Mechanical operation
 Mass Transfer

PG Course (s)

Bioreactor Engineering