



**Dr. Amit Jain**  
Associate Professor

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**School** : School of Studies of Engineering and Technology  
**Department** : Chemical Engineering  
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<https://scholar.google.com/citations?user=Tpe8RSgAAAAJ&hl=en&oi=sra>

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### Qualifications

- **B.E.** **First (Hon's)** **2001**  
Institute of Technology, Guru Ghasidas University, Bilaspur (C.G.)
- **M.Tech.** **First (Hon's)** **2004**  
Maulana Azad National Institute of Technology, Bhopal (M.P.)
- **Ph.D.** **2021**  
Indian Institute of Technology Kharagpur  
**Research Topic** : Membrane based clarification of vegetable and spice extract for longer shelf life : A case study for bitter melon (*Momordica charantia*) and ajwain (*Trachyspermum ammi*)

### Area of Interest/ Specialization

- Membrane separation processes
- Processing of various medicinal herbs and fruit / vegetable juices

### Experience

- **Teaching Experience (16 years)**  
Joined as Lecturer on 4<sup>th</sup> January 2007, later on designated as Assistant Professor in Department of Chemical Engineering, Institute of Technology, Guru Ghasidas Vishwavidyalaya, (A Central University), Bilaspur (C.G.).
- **Industrial Experience (About 1.5 years)**  
Worked as Graduate Engineer Trainee at HJI Prop GMMCO Ltd., Amlai (M.P.) (C.K. Birla group company) : From 10<sup>th</sup> September 2005 to 31<sup>st</sup> May 2006.  
Worked as Project Engineer at E.I. DuPont Ind. (Pvt.) Ltd. Baroda (On pay roll of Team lease services Pvt. Ltd.) : From 07<sup>th</sup> June 2006 to 02<sup>nd</sup> January 2007.

### Awards and Honors

- Corona Warrior Honour by St. Xavier Group of Institutions.
- Young Jaina Award 2005 by the All India Jain Community (Maitri Samooh).
- Special Honour by Collector, District: Janjgir-Champa (C.G.) on Independent Day Celebration 2005.
- Special Honour by Barrister Thakur Chhedilal Memorial Academy Chhattisgarh.

- Special Honour ('NSS Ratna') by National Service Scheme (NSS) Akaltara Unit.
- Outstanding Performance Award by E.I. DuPont India Pvt. Ltd. For outstanding contribution in Process Development, Implementation and Commissioning of Project 'Equation Pro'.
- Sixth position in University Merit list in B.E.
- Gold Medal for Best M.Tech. Energy related thesis.
- College topper in M.Tech.

### Research Projects

- Synthesis of Proton Exchange Membrane for use in Microbial Fuel Cell (Application Number : MNRE/A/2022/2225) Submitted to Ministry of New and Renewable Energy (R&D Division) Amount : 45 Lacs, Duration 36 Months

### Publications

- Aqueous extraction of bitter gourd (*Momordica charantia*) juice and optimization of operating conditions, *Fruits*; 71(6) (2016), 379-387.
- Effect of different operating conditions in cloud point assisted extraction of thymol from Ajwain (*Trachyspermum Ammi* L.) seeds and recovery using solvent, *Journal of Food Science and Technology*; 54(13) (2017), 4353-4361.
- Fundamental understanding of fouling mechanisms during microfiltration of bitter gourd (*Momordica charantia*) extract and their dependence on operating conditions, *Food and Bioprocess Technology*; 11(5) (2018), 1012-1026.
- Kinetics of enzymatic hydrolysis of pectinaceous matter in Guava juice, *Journal of Food Engineering*; 221 (2018), 158- 166.
- Criteria for unique steady state for enzymatic depectinization of bael (*Aegle marmelos*) juice in a continuous stirred tank reactor, *Reaction Chemistry & Engineering*; 3 (2018), 333-343.
- Effect of process parameters on aqueous extraction of thymol and other phytonutrients from herbal seed Ajwain (*Trachyspermum ammi* L.), *Journal of Applied Research on Medicinal and Aromatic Plants*; 11 (2018), 27-36.
- Effects of operating conditions during hollow fiber ultrafiltration of bitter gourd (*Mormordica charantia*) extract and analysis of nutritional qualities in subsequent storage study, *Journal of Food Process Engineering*; 42(5) (2019), 1-15.
- Extractive recovery of p-coumaric acid using natural and conventional organic solvents", *Journal of the Indian Chemical Society*; 97(7) (2020), 1104-1107.
- Ultrafiltration characteristics of ajwain (*Trachyspermum ammi* L.) extract and study of shelf life", *LWT-Food Science and Technology* (Submitted)
- Revisiting the recent advancements in the design and performance of solar greenhouse dryers, *Recent Advances in Manufacturing and Thermal Engineering, Lecture Notes in Mechanical Engineering* (Revision Submitted)

- A revisit to thermal performance enhancement of sustainable solar heater, *Recent Advances in Manufacturing and Thermal Engineering, Lecture Notes in Mechanical Engineering* (Revision Submitted)
- A sustainable approach for graphene nanoparticles coating on Nafion 117 and evaluate the performance of continuous microbial fuel cells (Submitted in Iranian Journal of Chemistry and Chemical Engineering)
- Synthesis of PTFE/PVA/GO/OPA based proton exchange membranes and its application in microbial fuel cell” (Submitted in Journal of the Indian Chemical Society)

### **Books/Book Chapters**

- “Processing of Beverages by Membranes” in Book ‘Processing and Sustainability of Beverages: Volume 2: The Science of Beverages’ (2018), Page 517-570. (Published by Woodhead Publishing, Elsevier)
- “Noble Metal Supported Heterogeneous Catalyst for Oxidation and Oligomerization Reaction” in Book ‘Diverse Strategies for Catalytic Reactions’. (Revision Submitted) (To be Published by Bentham Science)
- “Noble Metal Supported Heterogeneous Catalyst for Oxidation and Oligomerization Reaction” in Book ‘Diverse Strategies for Catalytic Reactions’. (Revision Submitted) (To be Published by Bentham Science)
- “Direct reutilization of wastewater: Problem, challenge and future direction” in Book ‘Antimicrobial Resistance in Wastewater and Human Health’ (Published by Elsevier). (Revision Submitted)

### **Patent**

- Absorber Plate for Solar Collector (Application Accepted - Application Number : 367141-001, Cbr Number : 203416)
- Microchannel Heat Sink with Ribs (Application Under Process - Application Number : 371223-001, Cbr Number : 206316)

### **Administrative Responsibilities**

- Member School Board of School of Studies of Engineering and Technology.
- Member “Board of studies” in Chemical Engineering (2012-2015).
- Member “Examination Committee” in Chemical Engineering.
- Member Training and Placement Cell.
- Member Internal Committee for the Students with Disabilities.
- Social Media Champion of the Vishwavidyalaya.

## **Additional Information**

- 14 Papers Published in International / National Conferences / Seminars.
- 20 Short Term Course / Faculty Development Program attended.
- 20 Workshops attended.
- 02 Orientation Programme / Refresher Course attended.
- Two weeks Industrial Training on "Cyber Security Measures and Tools", organized by National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh and Digintrude InfoSec Pvt. Ltd., Hyderabad from June 22- July 03, 2020.
- Member of Professional Bodies:
  - ❖ Life Member : Indian Institute of Chemical Engineering IChE
  - ❖ Life Member : Institute of Engineers (India) IE(I)
  - ❖ Life Member : Indian Society for Technical Education ISTE
  - ❖ Life Member : Indian Science Congress Association ISCA
  - ❖ Member International Association of Engineers IAENG
- Session Co-Chair on AICTE Sponsored "International Conference (Online) on COVID Challenges of Energy and Environment Management for Sustainable Growth of Process Industries", organized by Department of Chemical Engineering, Guru Ghasidas Vishwavidyalaya Bilaspur on September 10-11, 2021.
- Organizing Secretary – One day workshop on "Latest Development Status of Renewable Energy Sources in India", on October 13, 2007.
- Organizing Secretary – AICTE Sponsored International Conference (Online) on COVID Challenges of Energy and Environment Management for Sustainable Growth of Process Industries, on September 10-11, 2021.
- Joint Secretary – "National Seminar on Recent Advances in Chemical Engineering Operation and Processes in Chemical and Allied Industries" during February 5-6, 2008.
- Member Organizing Committee – "National Seminar on Dakshin Koshal ka Itihaas, Sabhyata awam Samaj : Shodh-Vimarsh (Gouravshali Dakshin Koshal)" during November 5-6, 2019.
- Assistant Centre Superintendent for Vishwavidyalaya Entrance Test 2010-2013.
- Faculty in charge "Chemical Engineering Students Society (ChESS).
- Member : Games and Sports Committee of Institute of Technology from 2009-2014.
- Member : Cultural Committee of Institute of Technology from 2010-2012.
- Member : Industry Institute Interaction Cell of Vishwavidyalaya.
- Coordinator for online data feeding committee for AICTE approval of B.Tech. / M.Tech. Course, 2012-13, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22.

- Co-Coordinator for online data feeding committee for AICTE approval of B.Tech. / M.Tech. Course, 2013-14.
- Teacher Coordinator of Chalchitra (Media Club of SoS, Engineering & Technology).
- Teacher Coordinator of NEXUS (Alumni Interaction Cell to Conduct Alumni Meet of SoS, Engineering & Technology).
- Organizing Quiz Competition on KUL-UTSAV (Guru Ghasidas Jayanti Program) since last more than 10 years.
- Co-Coordinator of committee, to look after various activities related to AICTE in School of Studies in Engineering and Technology, for session 2020-21, 2021-22.
- Coordinator of committee, to look after the activities related to the Alumni of the School of Studies in Engineering and Technology, for session 2020-21, 2021-22.
- Member of the committee, to look after the placement activities related to of School of Studies of Engineering and Technology, for session 2021-22, 2022-23.
- Member of committee, to look after the activities related to the Industry Interaction for the School of Studies of Engineering and Technology in coordination with the Industry Interface Cell Office of GGV, for session 2021-22, 2022-23.