

BIODATA

Name : **DR. ASHWINI SOOD**
Designation : Professor
Date of Birth : 17-07-1967
Father's Name : Late P. K. Sood,
Chief Engineer(Retd.),O.N.G.C.
Office Address : Room No. 106,
Department of Chemical Engineering,
School of Chemical Technology, Harcourt
Butler Technical University,Kanpur-208
002, India
Home Address : T5-1C, Rudra Greens Apartments,
Singhpur, Kalyanpur, Kanpur-208017
E-mail I. Ds. : asood@hbtu.ac.in,
sood.ashwini@rediffmail.com
Mobile Nos. : 91-7081300534, 91-9956868360

Qualification	Board/University	Percentage/CPI/GPA	Year
Class X	CBSE	81.2% (I in the Class and Merit Certificate under National Merit Scheme for securing High Rank)	1982
Class XII	CBSE	83% (II in the Class and selected in IIT Kanpur)	1984
B. Tech. (Chemical Engg.)	IIT Kanpur	CPI = 8.4/10.0 (84%) V in the Class and II Position in GATE1988, Placement Offer from Gharda Chemicals Ltd., Mumbai; Scholarship offers from Lehigh University and Clarkson University, USA	1988
M. S. (Chemical Engg.)	Lehigh University, USA	GPA = 3.53/4.0 (88.25 %)	1991
Ph. D. (Chemical Engg.)	UP Technical University, Lucknow	—	2006*

*The Ph.D. research was carried out under the supervision of **Prof. M. S. El-Aasser**, Department of Chemical Engineering, Lehigh University, Bethlehem, PA 18015, U.S.A., from **October 1991 to May 1994**, covering a period of approximately **2 years and 8 months**.

However, due to certain unavoidable circumstances, the thesis could not be submitted to Lehigh University for the award of the Ph.D. degree. Subsequently, the same research work was submitted to **U.P. Technical University, Lucknow**, for the award of the Ph.D. degree, under the supervision of **Prof. S. K. Awasthi**, Department of Chemical Engineering, H.B.T.I., Kanpur, after obtaining a **No Objection Certificate (NOC)** from Prof. M. S. El-Aasser.

The Ph.D. research resulted in the publication of **six research papers in peer-reviewed journals**, which are listed as **Papers 3, 7, 8, 9, 10, and 12** under the section "*List of Papers Published in Journals/Proceedings.*"

B. Tech. Project Topic	:	Modelling of Polymerisation of Urea and Formaldehyde using Functional Group Approach (resulted in 1 paper published in an international journal) Supervisor: Prof. Anil Kumar, Dept. of Chemical Engg., IIT Kanpur
M. Tech. Thesis Topic	:	Modeling of Particle Size Distribution in Emulsion Polymerization (resulted in 2 papers published in an international journal and 1 paper published in a national journal) Advisors: Prof. Christos Georgakis and Prof. Mohamed S. El-Aasser, Dept. of Chemical Engineering, Lehigh Univ., USA
Ph. D. Thesis Topic	:	Modeling of Particle Size Distribution in Miniemulsion Polymerization (resulted in 5 papers published in international journals and 1 paper published in national journal: all journals are SCI journals) Advisor: Prof. M. S. El- Aasser (Oct. 1991 to May 1994); Supervisor: Prof. Shailendra K. Awasthi (Oct. 2002 to Nov. 2006) Dept. of Chemical Engineering, HBTI Kanpur

Professional Experience:

1 May, 2017 – Present

Professor

Department of Chemical Engineering,
School of Chemical Technology,
H. B. T. U., Kanpur-208002

- Teaching **Chemical Reaction Engineering II** to III Year B. Tech. Chemical Engineering students (V Semester Course)
- Teaching **Chemical Reaction Engineering I** to III year B. Tech. Chemical Engineering students (IV Semester Course)
- Teaching **Chemical Reaction Engineering** to III year B. Tech. Paint Technology students (V Semester Course)
- Teaching **Process Heat Transfer** to II Year B. Tech. Paint Technology Students (IV Semester Course)
- Taught **Mathematical Methods in Chemical Engineering** to Final year B. Tech. Chemical Engineering students (VIII Semester Course)
- Taught **Advanced Mathematical Methods in Chemical Engineering** (M. Tech. Course) to I year M. Tech. Chemical Engineering, Food Technology and I Year Ph. D. (Math) students (I

Semester Course)

- Jointly Conducting **Chemical Reaction Engineering Laboratory** Course (V Semester Course)
- **Jointly Conducted Industrial Training Report Presentation** (VII Semester Course).
- Guiding Final Year B. Tech. Chemical Engineering Students' **B. Tech. Project** (VII and VIII Semester Course).
- Guided/Guiding M. Tech. Dissertation of M. Tech. students III-IV Semester).
- Guided/Guiding Ph. D. Dissertation of Ph. D. students.
- Serving as Faculty In-charge, Vocational Training and Placement, Dept. of Chemical Engg., HBTU, Kanpur
- **Other than University Assignments**
- Served as **external expert**, DRTC Assessment Board DMSRDE at DMSRDE, Kanpur, July 21 and 24, 2017.
- Served as **paper-setter for Heat Transfer Operation Course for AKTU, Lucknow** in 2018
- Appointed by **the Vice Chairman, Board of Governors & Secretary, Technical Education, U. P. Lucknow** as an **expert for interview of Guest Faculty** in Chemical Engineering Department, Dr. Ambedkar Institute of Technology for Handicapped, Kanpur, U. P. on 18th July, 2018
- **Served as a Guest faculty** and taught online a 20 lectures' course on **Polymerization Reactor Engineering** to B. Tech. Third year students of **Rajiv Gandhi Institute of Petroleum Technology, Amethi, U. P.** during 19 February to 26 March, 2021.
- **Served as a subject expert** in the selection committee **to select Assistant Professors** (On Contract) for B. Tech. Chemical Engineering (Regular) Program, **IET Lucknow** on 29-08-2023.

17 April, 2013 – 30 April, 2017

Associate Professor

Department of Chemical Engineering,
School of Chemical Technology,
H. B. T. U., Kanpur-208002

- Taught **Chemical Reaction Engineering-I** to III Year B. Tech. Chemical Engineering students (V Semester Course)
- Taught **Chemical Reaction Engineering-II** to III Year B. Tech. Chemical Engineering students (VI Semester Course)
- Taught **Advanced Mathematical Methods in Chemical Engineering** (M. Tech. Course) to I year M. Tech. Engineering, Food Technology and I Year Ph. D. (Math) students (I Semester Course)
- Taught **Heat Transfer Operations** to II Year B. Tech. Chemical Engineering Students (III Semester Course)
- Jointly Conducted **Chemical Reaction Engineering Laboratory** Course (V Semester Course)
- Jointly Conducted **Industrial Training Report Presentation** (VII Semester Course).
- Guided Final Year B. Tech. Chemical Engineering Students **'B. Tech. Project** (VII and VIII Semester Course).
- Guided M. Tech. Dissertations of M. Tech. students (III and IV Semester Course)
- Guided Ph. D. Dissertation of Ph. D. student.
- Served as Faculty In-charge, Vocational Training, Dept. of Chemical Engg., HBTU, Kanpur
- **Other than University/Institute Assignments**
- Served as **item-writer, reviewer and paper-setter** for **U. P. Public Service Commission's Chemical Engineering Examination** in 2013.

- Served as **Paper-setter for CRE-II and Transport Phenomena** Courses for B. T. Kumaon Institute of Technology, Dwarahat, Almora in 2014.
- Served as a **subject expert** for giving final shape to the course structure and syllabus of the course B. Tech. in Chemical Engineering with specialization in Sugar & Alcohol Technology, Madan Mohan Malviya University of Technology, Gorakhpur on 17-10-2015.
- Served as **an external expert** for AITH's recruitment interview for the post of Guest Lecturer in 2015.
- Served as a **lab examiner** for Heat Transfer Operation Lab, Department of Chemical Engineering, AITH, Kanpur in 2016.
- Served as **external expert**, DRTC Assessment Board DMSRDE at DMSRDE, Kanpur, June 28-29, 2016.

17 April, 2010 - 16 April, 2013

Assistant Professor - Stage 3 Department of Chemical Engineering,
H. B. T. I., Kanpur-208002

- Taught **Advanced Mathematics and Statistical Design of Experiments** (M. Tech. Course), **Chemical Reaction Engineering-I, Chemical Reaction Engineering-II, Heterogeneous Catalysis** (Final Year Elective Course)
- Jointly conducted **Chemical Reaction Engineering Lab, Computer Application and Design Lab, Seminar**
- Served as Faculty In-charge, Vocational Training, Dept. of Chemical Engg., HBTU, Kanpur
- **Other than University/Institute Assignments**
- Acted as an external expert for DRDO's recruitment interview for the post of Senior Technical Officer-Grade A
- **Conducted training sessions on the Chemical Engineering Topics: Reaction Chemistry, reaction equilibrium and chemistry, catalyst: basics and catalyst used in Ammonia Plant at Tata Chemicals Ltd., Babrala during November 28- 29, 2012.**

17 April, 2005-16 April, 2010 **Assistant**

Professor - Stage 2 Department of Chemical Engineering,
H. B. T. I., Kanpur-208002

- Taught Chemical Reaction Engineering, Heat Transfer Operations, Fluid Mechanics
- Conducted Lab Courses in Chemical Reaction Engineering, Fluid Mechanics.
- Served as Paper Setter for Heat Transfer Operations and Fluid Mechanics for UPTU Lucknow.
- Received Ph. D. Degree from U. P. Technical University, Lucknow.

17 April, 2000-16 April, 2005 **Assistant**

Professor - Stage 1 Department of Chemical Engineering,
H. B. T. I., Kanpur-208002

- Taught Chemical Reaction Engineering, Heat Transfer Operations, Fluid Mechanics, Process Equipment Design.
- Conducted Laboratories in Chemical Reaction Engineering, Heat Transfer, Fluid Mechanics, Unit Operations.
- Readmitted for Ph. D. degree in U. P. Technical University, Lucknow.
- Presented Ph. D. Synopsis and progress before Research Degree Committee.
- Wrote and submitted Ph. D. thesis for experts' evaluation.
- Wrote and published 4 research papers based on Ph. D. work.

15 Feb 1999 – 15 May 1999

Visiting Faculty

Sachdeva New P.T. College, Subhash Road, Dehradun

- Taught Physics and Mathematics for Engineering Entrance Examinations
- Taught Mathematics for N. D. A. Entrance Examination.
- Taught Mathematics for Banking Entrance Examination.

16 May 1999 - 15 July 1999

Visiting Faculty

K. K. Tutorials, Subhash Road, Dehradun

- Taught Physics for Engineering Entrance Examinations.

6 October 1997 – 5 April 1998

Project Engineer

Indian Institute of Petroleum, Dehradun

- Worked on a Project on Alpha-Olefin Sulfonation

26 February 1996 – 30 August 1997

Sr. System Analyst (R & D)

Jubilant Industries Ltd. (Formerly Vam Organic Chemicals Limited), Gajraula

- Proposed and Jointly Conducted Pilot Scale Studies on Batch Time Reduction in Emulsion Polymerization Processes.
- Evaluated Number of Properties of the Latex so formed During the Course of Polymerization and at the End.
- Presented a Seminar on Rheology of Dispersed Phase Systems
- Evaluated Tackifiers for Performance Improvement of Pressure Sensitive Adhesives
- Evaluated Performance Parameters of Pressure Sensitive Adhesives

31 January 1995 – 26 December 1995

Asst. Product Manager (Plant & Process)

Design Automation Group,

Hindustan Office Products Ltd., New Delhi

- Headed the Chemical Engg. Segment
- Identified a New Market Segment consisting of Owners and Operators.
- Marketed Plant Design CAD Software Packages including PIGEON PC designed by EIL.

1 Sep. 1993- 31 January, 1994

Student Consultant at Lehigh University Computing Centre

- Helped students in solving their computing problems

16 December 1991 – 30 Aug. 1993

Research Assistant,

Emulsion Polymers Institute,

Lehigh University, Bethlehem, PA 18015, U. S. A

- Developed, Solved and Validated a Detailed Model for the Evolution of Particle Size Distribution in Miniemulsion polymerization from a Monodisperse Droplet Size Distribution.
- Developed, Solved and Validated Model for the Particle Size Distribution in Miniemulsion Polymerization that Incorporated the Full Droplet Size Distribution as a Monodisperse Distribution.
- Developed and Solved a Model for Miniemulsion Polymerization in which Normal Droplet Size Distribution was discretized into Five Classes resulting in Five Classes of Particle Size Distributions
- Conducted Stability Analysis of Miniemulsion Droplet Size Distribution against degradation by molecular diffusion and by coagulation.

16 January 1989 – 15 December 1991

Research Assistant,

Center for Process Modeling and Control and Emulsion Polymers Institute,
Lehigh University, Bethlehem, PA-18015, U. S. A.

- Initiated a Project on Modeling, Monitoring and Control of Particle Size Distribution in Emulsion Polymerization.
- Developed, Solved and Validated a Model for the Particle Size Distribution in Emulsion Polymerization.
- Developed Model Based Open Loop Control Strategies.
- Jointly conducted experiments for the off-line monitoring of Particle Size Distribution in Emulsion Polymerization.
- Assisted in Developing a Computer Interfaced Process Control Facility.
- Attended a Short Course on Polymer Reaction Engineering at McMaster University, Canada, 1990.

1 September 1988 – 15 January 1989

Teaching Assistant,

Department of Chemical Engineering,
Lehigh University, Bethlehem, PA 18015, U. S. A.

- Assisted in Teaching a Course - Physical Polymer Science, taught by Late Professor L. S. Sperling.

15 May, 1987- 1 July, 1987

Summer Trainee,

L.P.G. Plant, O.N.G.C., Ankleshwar

- Calculated Column Efficiencies of De-Ethanizer and De-Butanizer

Total Professional Experience: above 30 years.

Research Interests

- Emulsion Polymerization Processes (Conventional and Miniemulsion) and Reactors (Batch and Semi-batch)
- Rheology of Dispersions
- Chemical Reaction Engineering

Supervised B. Tech. Research Projects

1. 0-1 Kinetics of Emulsion Polymerization (Anushree Trivedi (Summer 2021)).
2. Butyl Acrylate Emulsion Polymerization: A Case for Monomer Mass Transport Limited (Radhika Tiwari (VII Semester 2024)).
3. Microplastics (Isha Singh, Abhishek Pandey (VII Semester 2024)).
4. Experimental Studies in Methyl Methacrylate Emulsion Polymerization: Effect of Emulsifier Concentration on Average Particle Size (Shikhar Dixit, Nishant Gola (Final Year B. Tech. Project, 2024-25))
5. Experimental Studies in Methyl Methacrylate Emulsion Polymerization: Effect of Initiator Concentration on Average Particle Size (Prabhav Gupta, Himanshu Singh (Final Year B. Tech. Project, 2024-25))
6. Modeling of Methyl Methacrylate Emulsion Polymerization using MATLAB (Siddharth Verma, Abhijeet Yadav, Shivam Singh, 2025-2026)
7. Studies on the Average Number of Radicals per Particle in Emulsion Polymerization (Vishwajeet Yadav, Avani Sahani, Vipul Singh Yadav, 2025-2026).

Supervised M. Tech. Thesis:

1. Modeling of **Styrene** Emulsion Polymerization (Shruti Sengar (2009)).
2. Modeling of **Methyl Methacrylate** Emulsion Polymerization (Meghna Kapoor (2009)).
3. A Lumped Model for **Styrene** Emulsion Polymerization (Pankaj Kr. Lodhi (2010)).
4. Modeling of **Butyl Acrylate** Emulsion Polymerization (Aparna Singh (2012)).
5. A Detailed Lumped Model for **Butyl Acrylate** Emulsion Polymerization

(Ranjana(2013)).

6. A Particle Size Distribution Model for **Butyl Acrylate** Emulsion Polymerization(Anjali Awasthi(2013)).
7. A Lumped Model for **Butyl Acrylate** Emulsion Polymerization (Ambereen Aziz Niaze(2015)).
8. A Population Balance Model for **Butyl Acrylate** Emulsion Polymerization (AnkitSrivastava (2015)).
9. Application of **Viscosity Depressant in Manufacture of Synthetic Leather** (RakeshKumar (201)).
10. Modeling of **Vinyl Acetate** Emulsion Polymerization in a Batch Reactor (VirendraKumar (2014-2015)).
11. A Detailed Lumped Model for **Vinyl Acetate** Emulsion Polymerization (Shalini(2015-2016)).
12. Modeling of **Vinyl Acetate** Emulsion Polymerization in a **Semi-batch Reactor** (Sandeep Tripathi (2015-2016)).
13. Modeling of **Methyl Methacrylate** Emulsion Polymerization in **Batch and Semi-batch Reactors** (Neha Mishra (2016-2017)).
14. Modeling of **Styrene** Emulsion Polymerization in a **Semi-batch Reactor** (ReenaSharma (2016-2017)).
15. Modeling of **Vinyl Chloride** Emulsion Polymerization in a Batch Reactor (PulkitGarg (2016-2017)).
16. Modeling of **Methyl Methacrylate** Emulsion Polymerization in a **Seeded Semi-batch Reactor** (Akanksha Singh Rajput (2017-2018))
17. A Detailed Model for **Methyl Methacrylate** Emulsion Polymerization in a **SeededSemi-batch Reactor** (Swati Gangwar (2018-2019))
18. Review of **Secondary Nucleation** in Emulsion Polymerization (Shanjul Srivastava (2019-2020))
19. Calculations of **Average Number of Radicals per Particle** in EmulsionPolymerization (Aishwarya Tiwari ((2020-2021))
20. Parametric Sensitivity Study of a Butyl Acrylate Emulsion Polymerization Model(Sachin Kumar (2021-2022)).

Co-supervised/supervising M. Tech. Thesis:

21. Studies on the Effect of Additives during Glycerol Hydrogenolysis to PropyleneGlycol (Ashna Srivastava(2010-2011)).
22. Studies on the Effect of Inorganic Additives on Glycerol Conversion to PropyleneGlycol in the Presence of (Ni, W, Cu)/Keiselguhr Catalyst (Tulika Gaur(2011-2012)).
23. Multiobjective Optimization of Water Distribution Networks(Gauri Shukla(2025-2026)).

Supervised/Supervising Ph. D. Thesis:

1. **Modeling of Particle Size Distribution in Butyl Acrylate Emulsion Polymerization (Tulika Gaur (awarded 2021))** – Three papers resulted from this work. They are listed as papers 26, 31 and 33 under papers published in journals. Two international conferences' presentations also resulted from this work. They are listed as papers 17 and 19 under List of Papers presented as oralpresentations/posters/abstracts.
2. **Augmentation of Liquid Fuel Properties by Adding Solid Fuel Particles and Additives for Turbo Fan Engine (Ashish Kumar Singh (2020-))** - One review paper has resulted from this work. This is listed as paper 37 under papers published in journals/proceedings. 1 research paper has been published in Indian Journal of Chemical Technology. This is listed as paper 40 under papers published in journals/proceedings.
3. **Modeling of Particle Size and Particle Size Distribution in Methyl Methacrylate Emulsion Polymerization (Aishwarya Tiwari (2026-))**.

List of Papers Published In Journals/Proceedings of Conferences

1. **A. Kumar and A. Sood** (1990), *Modelling of Polymerization of Urea and Formaldehyde using Functional Group Approach*, **J. Appl. Polym. Sci.**, 40, 1473–1486. DOI: 10.1002/app.1990.070400905. **(SCIE, SCI, Scopus) [B. Tech. Project]**.
2. **A. Sood** (2002), *Monodisperse Distributions*, **Indian Chemical Engineer**, 44(2), 75–81, 2002. DOI not available. **(ESCI, Scopus)**
3. **A. Sood and S. K. Awasthi** (2003), *Initial Droplet Size Distribution in Miniemulsion Polymerization*, **J. Appl. Polym. Sci.**, 88, 3058–3065. DOI: 10.1002/app.12071. **(SCIE, SCI, Scopus) [Accepted as is]**.
4. **A. Sood** (2003), *Analytical Solutions of Series-Parallel Reactions (Part I)*, **Indian Chemical Engineer**, 45(4), 229–231. DOI not available. **(ESCI, Scopus)**
5. **A. Sood** (2003), *A Study of Settling Behaviour of Suspensions*. In **Proceedings of the National Symposium on Separation Processes: Separation in Process Industries**, Institute of Technology, Banaras Hindu University (IT-BHU), Varanasi, India, 14–16 February 2003. DOI: **Not assigned. (Not indexed)**
6. **A. Sood** (2003), *Calculation of Column Efficiencies of Multi-Component Distillation Columns*, **Separation in Process Industries**, National Symposium on Separation Processes, IT BHU, Feb. 14–16, 2003. DOI not available. **(Not indexed)**
7. **A. Sood** (2004), *Analytical Solutions of Series and Parallel Reactions (Part II)*, **Indian Chemical Engineer**, 46(1), 7–12, 2004. DOI not available. **(ESCI, Scopus)**
8. **A. Sood** (2004), *Particle Size Distribution Control in Emulsion Polymerization*, **J. Appl. Polym. Sci.**, 92, 2884–2902. DOI: 10.1002/app.20319. **(SCIE, SCI, Scopus)**
9. **A. Sood and S. K. Awasthi** (2004), *A Population Balance Model for Miniemulsion Polymerization*, **Indian Journal of Chemical Technology**, 11, 367–376. DOI not available. **(SCIE, SCI, Scopus)**
10. **A. Sood and S. K. Awasthi** (2004), *Population Balance Model for Miniemulsion Polymerization I. Model Development*, **Macromolecular Theory and Simulations**, 13, 603–614. DOI: 10.1002/mats.200400027. **(SCIE, SCI, Scopus)**
11. **A. Sood and S. K. Awasthi** (2004), *Population Balance Model for Miniemulsion Polymerization II. Model Solution and Validation*, **Macromolecular Theory and Simulations**, 13, 615–628. DOI: 10.1002/mats.200400028. **(SCIE, SCI, Scopus)**
12. **A. Sood**, *Coagulative Stability of the Miniemulsion Droplets*, **J. Appl. Polym. Sci.**, 109, 1262–1270, 2008. DOI: 10.1002/app.28207. **(SCIE, SCI, Scopus)**
13. **A. Sood**, *Modeling of the Particle Size Distribution in Emulsion Polymerization*, **J. Appl. Polym. Sci.**, 109, 1403–1419, 2008. DOI: 10.1002/app.28165. **(SCIE, SCI, Scopus)**
14. **A. Sood**, *Insitu Bimodal or Broad Particle Size Distributions using Miniemulsion Polymerization*, **J. Appl. Polym. Sci.**, 114, 49–61, 2009. DOI: 10.1002/app.30453. **(SCIE, SCI, Scopus)**
15. **A. Sood**, *Increasing PVAc Emulsion Polymerization Productivity—An Industrial Application*, **Indian Journal of Chemical Technology**, 17, 34–42, 2010. DOI not available. **(SCIE, SCI, Scopus)**
16. **A. Sood and Pankaj Kumar Lodhi** (2011), *Modeling Evidence in Support of Coagulative Nucleation Theory*, **J. Appl. Polym. Sci.**, 122, 517–531, 2011. DOI: 10.1002/app.34033. **(SCIE, SCI, Scopus)**
17. **A. Sood and Aparna Singh** (2012), *A Lumped Model for Butyl Acrylate Emulsion Polymerization*, **Indian Chemical Engineer**, 54, 235–244. DOI not available. **(ESCI, Scopus)**
18. **A. Sood, Ranjana Bharti and Anjali Awasthi** (2014), *Modelling of Butyl Acrylate Emulsion Polymerisation: A Detailed Lumped Parameter Approach*, **Indian Chemical Engineer**, 56 (3), 185–214, 2014. DOI: 10.1080/00194506.2014.910704. **(ESCI, Scopus)**
19. **A. Sood, Anjali Awasthi and Ranjana Bharti** (2016), *A Population Balance Model for Butyl Acrylate Emulsion Polymerization*, **Indian Chemical Engineer**, 58 (1), 40–60. DOI: 10.1080/00194506.2014.990743 **(ESCI, Scopus) [Awarded IICHE NRC Award 3rd Best Paper in "Indian Chemical Engineer" 2016]**.
20. **Sandeep Tripathi, Shahida Anjum and A. Sood** (2017), *A Review Paper on Emulsion Polymerization of Vinyl Acetate*, **Journal of Chemical Engineering and its Applications**, 2(2), 1–26. DOI not available. **(Not indexed)**

21. **A. Sood** (2017), *Temperature Dependency of the Radical Entry Rate in Emulsion Polymerization*, **Ultra Engineer**, 5(1), 25–27. DOI not available. **(Not indexed)**
22. **Ankit Srivastava and A. Sood** (2017), *A Particle Size Distribution Model for Butyl Acrylate Emulsion Polymerization: Model Validation*, **Ultra Engineer**, 5, 33–39. DOI not available. **(Not indexed)**
23. **Ambereen Aziz Niaze and A. Sood** (2017), *A Model for Butyl Acrylate Emulsion Polymerization*, **Journal of Chemical Engineering and its Applications**, 2, 1–10, 2017. DOI not available. **(Not indexed)**
24. **A. Sood** (2017), *Modeling Explanation of the Maximum in the Reaction Rate Profile in Interval II of Emulsion Polymerization*, **Journal of Chemical Engineering and its Applications**, 2, 1–12. DOI not available. **(Not indexed)**
25. **Virendra Kumar and A. Sood** (2018), *A Model for Vinyl Acetate Emulsion Polymerization*, **Journal of Chemical Engineering and its Applications**, 3, 1–12, 2018. DOI not available. **(Not indexed)**
26. **A. Sood**, *Radical Entry Mechanisms in Emulsion Polymerization* (2018), **Journal of Chemical Engineering and its Applications**, 3, 1–19. DOI not available. **(Not indexed)**
27. **Reena Sharma and A. Sood** (2018), *Modelling of Emulsion Polymerization of Styrene in a Semi-Batch Reactor*, **Journal of Chemical Engineering and its Applications**, 3, 1–17,. DOI not available. **(Not indexed)**
28. **Tulika Gaur and A. Sood** (2019), *Semibatch Emulsion Polymerisation Modelling: Polybutyl Acrylate Case Study*, **Indian Chemical Engineer**, 61, 387–402. DOI not available. **(ESCI, Scopus)** [Awarded IChE Awards for the Year 2020: Chemical Weekly Award for the Best Paper published in the "Indian Chemical Engineer" in its issue of 2019 along with IChE NRC Award Best Paper in "Indian Chemical Engineer" 2019 and Kuloor Memorial Award for the Best Technical paper published in the Institute Journal "Indian Chemical Engineer" in its issue for 2019].
29. **Sandeep Tripathi, Shalini Prajapati and A. Sood** (2019), *A Detailed Lumped Model for Vinyl Acetate Emulsion Polymerization*, **International Journal of Polymer Science and Engineering**, 5(1), 1–12. DOI not available. **(Not indexed)**
30. **Swati Gangwar and A. Sood** (2019), *A Model to Study the Effect of Monomer Flow Rate on Methyl Methacrylate Emulsion Polymerization*, **IJRASET**, 7, 132–136, 2019. DOI: 10.22214/ijraset.2019.3022. **(Scopus – limited/discontinued coverage)**
31. **Swati Gangwar and A. Sood** (2019), *Effect of Homogeneous Nucleation and Emulsifier Amounts on MMA Emulsion Polymerization*, **International Journal of Polymer Science and Engineering**, 5(2), 9–17. DOI not available. **(Not indexed)**
32. **Shanjul Shrivastava and A. Sood** (2020), *Secondary Nucleation in Emulsion Polymerization: A Review*, **IJRASET**, 8 (6), 1481–1487. DOI: 10.22214/ijraset.2020.22257. **(Scopus – limited/discontinued coverage)**
33. **Tulika Gaur and A. Sood** (2020), *Particle Size and PSD of Emulsion Polymers: A Review of Modelling Studies*, **Journal of Chemical Engineering Research Updates**, 7, 16–23, 2020. DOI not available. **(Not indexed)**
34. **Aishwarya Tiwari and A. Sood** (2021), *Calculations of the Average Number of Radicals per Particle*, **IJRASET**, 9, 1056–1059, 2021. DOI: 10.22214/ijraset.2021.33162. **(Scopus – limited/discontinued coverage)**
35. **Tulika Gaur and A. Sood** (2021), *Modelling of PSD in Butyl Acrylate Emulsion Polymerization in a Batch Reactor*, **Indian Chemical Engineer**, 63 (3), 219–230, 2021. DOI:10.1080/00194506.2019.1706193 **(ESCI, Scopus)**
36. **A. Trivedi and A. Sood** (2021), *Study of the Role of Radical Exit in Butyl Acrylate Emulsion Polymerisation*. In **Proceedings of the 36th National Convention of Chemical Engineers (NCCHE-2021): Frontier Technologies for 21st Century's Process Industries**. The Institution of Engineers (India). DOI not available. **(Not indexed)**
37. **Sachin Kumar and A. Sood** (2022), *Parametric Sensitivity Study of a BA Emulsion Polymerization Model*, **IJISRT**, 7, 362–367, 2022. DOI not available. **(Not indexed)**

38. Singh, A. K., Chauhan, V., & Sood, A. (2023). *A Review on Methods Available for Doping of High Energy Boron Particles Into Liquid Fuels*. **Journal of Aerospace Sciences and Technologies**, 73(2), 96–105. DOI: 10.1016/j.jast.2021.05.006. (SCIE, SCI, Scopus)
39. Sood, A. (2024). *Butyl Acrylate Emulsion Polymerization Follows Smith–Ewart Nucleation Model*. In **Proceedings of the 10th Annual Research Meet (ARM 2024)**. Centre for Research and Innovation (CRI), Venus International Foundation, 7 December 2024. DOI not available. (Not indexed)
40. **Ashish Kumar Singh, A. Sood and Arun Kumar Gupta** (2025), *A Study of Doping of High Energy Boron Powder into Liquid Fuel JP-10*, **Indian Journal of Chemical Technology**, 32, 836–840, 2025. DOI not available. (SCIE, SCI, Scopus)
41. **A. Sood** (2026), *A Mathematical Model for Green Emulsion Polymerization of Methyl Methacrylate in Batch and Semi-Batch Reactors*. **Journal of Oil, Petroleum and Natural Gas Research**, 3(1), 8. Proceedings of the International Conference on Carbon Capture, Storage & Utilization 2026: Pathways to Net-Zero (ICCCSU 2026). [https://doi.org/10.47363/JOPNGR/ICCCSU2026/2026\(3\)8](https://doi.org/10.47363/JOPNGR/ICCCSU2026/2026(3)8)
42. A. K. Singh and A. Sood (2026), *Coating of Boron Nano Particles with Ionic Liquids to Prevent Low Temperature Surface Oxidation*. In **Proceedings of the International Conference CHEM-TECHNOVA-2026**. Department of Chemical Engineering, Department of Bio-Chemical Engineering, and IICHe Student Chapter, Harcourt Butler Technical University, Kanpur, India, 12–14 March 2026.

List of Oral Presentations/Posters/Abstracts Presented in Conferences

1. J. Venkatesan, A. Sood, C. Georgakis, C. S. Silebi and M. S. El-Aasser, Monitoring Particle Size Distribution during the course of Emulsion Polymerization, AIChE Annual Meeting, Los Angeles, USA, 1990.
2. **A. Sood** and S. K. Awasthi, Stability Analysis of the Miniemulsion Droplet Size Distribution, Proceedings/Abstracts, CHEMCON 2001, Indian Institute of Chemical Engineers, Chennai, Dec. 19-22, 2001.[ABSTRACT]
3. **A. Sood**, Modeling Particle Nucleation in Emulsion Polymerization: An Approach Based on Comprehensive Nucleation Theory, POLYCON 2002:Recent Developments of Polymers, National Symposium in Polymer Science, HBTI, Kanpur, Aug. 15-17, 2002.
4. **A. Sood**, Model of Viscosity of Bimodal Dispersions for Improved Flow Behaviour, NASYPOLYSCI 2002: National Symposium in Polymer Science, Sardar Patel University, Vallabh Vidya Nagar, Gujarat, Dec. 3-4, 2002.
5. **A. Sood**, Low Viscosity giving Efficient Operating Procedure for Highly Viscous Emulsion Polymerization, NASYPOLYSCI 2002: National Symposium in Polymer Science, Sardar Patel University, Vallabh Vidya Nagar, Gujarat, Dec. 3-4, 2002.
6. **A. Sood** and S. K. Awasthi, Monomer Transport Framework for Miniemulsion Polymerization, CHEMCON 2002, Indian Institute of Chemical Engineers, Hyderabad, Dec. 19-22, 2002.[POSTER].
7. **A. Sood** and S. K. Awasthi, Radical Dynamics Framework for Miniemulsion Polymerization, CHEMCON 2002, Indian Institute of Chemical Engineers, Hyderabad, Dec. 19-22, 2002.[POSTER]
8. **A. Sood** and S. K. Awasthi, Population Balance Framework for Miniemulsion Polymerization, MACRO 2002, IIT Kharagpur, Dec. 7-11, 2002.
9. **A. Sood** and S. K. Awasthi, Radical Entry in Emulsion and Miniemulsion Polymerization Processes, CHEMCON 2003, Indian Institute of Chemical Engineers, Bhubneshwar, Dec. 19-22, 2003.(**Best Paper of the Session Award**)
10. **A. Sood**, Mechanism and Kinetic Model of Ozone Depletion Reaction, CHEMCON 2003, Indian Institute of Chemical Engineers, Bhubneshwar, Dec. 19-22, 2003.

11. **A. Sood**, Modeling of Particle Size Distribution in Emulsion Polymerization, CHEMCON 2007, Indian Institute of Chemical Engineers, Kolkata, Dec. 27- 30, 2007.
12. **A. Sood**, Population Balance Model versus Lumped Model for Emulsion Polymerization, Enabling Technologies for Chemical Process Industries, Indian Institute of Chemical Engineers, Kanpur Regional Centre, Kanpur, Nov. 13-14, 2009.
13. **Pankaj Lodhi** and **A. Sood**, A Lumped Model for Styrene Emulsion Polymerization, SAMAAGAM, A National Technical Seminar on Advances in Lipids, Surfactants, Surface Coatings & Polymer, Student Chapter, Oil Technologists' Association of India (Central Zone) and Deptt. of Oil & Paint Technology, HBTI, Kanpur, April 24-25, 2010.[ABSTRACT]
14. **A. Sood** and **Aparna Singh**, Modeling of Butyl Acrylate Emulsion Polymerization, CHEMCON 2011, Indian Institute of Chemical Engineers, Bangalore, Dec. 28-30, 2011.[POSTER]
15. **Tulika Gaur** and **A. Sood**, Modelling of the Particle Size Distribution in Butyl Acrylate Emulsion Polymerisation, 8th International Conference on Advancements in Polymeric Materials (APM 2017), Advanced Research School for Technology and Product Simulation, Central Institute of Plastics Engineering and Technology (CIPET), Chennai, held at Bangalore, Feb. 11- 13, 2017.
16. **Neha Mishra** and **A. Sood**, Modeling of Methyl Methacrylate Emulsion Polymerization in a Semi-batch Reactor, International Conference on Nanotechnology: Ideas, Innovations and Initiatives (ICN:3I 2017), Department of Mechanical and Industrial Engineering and Center of Nanotechnology, IIT Roorkee, Dec. 6-8, 2017 [INVITED LECTURE].
17. **Tulika Gaur** and **A. Sood**, Semi-batch Emulsion Polymerisation Modelling: Polybutyl acrylate Case Study, CHEMCON 2017, Indian Institute of Chemical Engineers, Haldia, Dec. 27-30, 2017.
18. **Reena Sharma** and **A. Sood**, Modelling of Emulsion Polymerization of Styrene in a Semi-batch Reactor, Fourth International Symposium on Advances in Sustainable Polymers (ASP 17), Centre of Excellence for Sustainable Polymers, Department of Chemical Engineering, IIT Guwahati and Polymer Processing Academy, India, Jan. 8-11, 2018.[POSTER]
19. **Akanksha Singh Rajput** and **A. Sood**, Modeling of Methyl Methacrylate Emulsion Polymerization in a Seeded Semi-batch Reactor, International Conference on Academic Science and Engineering (ICASAE-2019) organized by Institute for Engineering Research and Publication (IFERP), Chennai, June 8, 2019.
20. **Swati Gangwar** and **A. Sood**, A Detailed Model for Methyl Methacrylate Emulsion Polymerization in a Seeded Semi-batch Reactor, CHEMCON 2019, Indian Institute of Chemical Engineers, NRC, New Delhi, Dec. 15-19, 2019.
21. **Aishwarya Tiwari** and **A. Sood**, Calculations of the Average Number of Radicals per Particle in Emulsion Polymerization, Virtual International Conference on Advances in Chemistry and Chemical Engineering (ACCE 2021) organized by Department of Chemical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat (India) on April 16-17, 2021.
22. **Ashish Kumar Singh** and **A. Sood**, A Study on Doping of High Energy Boron Powder into Liquid Fuel JP-10, 13th International High Energy Materials Conference and Exhibits-2022 organized by High Energy Materials Society of India Chandigarh-Delhi Chapter in association with Terminal Ballistics Research Laboratory, Chandigarh at TBRL Ranges, Ramgarh, Panchkula, Haryana India during May 26-28, 2022.
23. **Radhika Tiwari** and **A. Sood**, Butyl Acrylate Emulsion Polymerization: A Case for Monomer Mass Transport Limited, International Conference CHEM-TECHNOVA-2024 jointly organized by the Department of Chemical Engineering, Department of Bio-Chemical Engineering, IICHE-Student Chapter; Harcourt Butler Technical

University, Kanpur during 21st-23rd March 2024.

24. Isha Singh, Abhishek Pandey and A. Sood, Microplastics: A Growing Threat to Our Ocean, Health and Ecosystems, International Conference CHEM- TECHNOVA-2024 jointly organized by the Department of Chemical Engineering, Department of Bio-Chemical Engineering, IICHE-StudentChapter; Harcourt Butler Technical University, Kanpur during 21st-23rd March 2024. **[II Prize in Posters Presentation]**.
25. A. Sood, Particle Size Distribution Model for Butyl Acrylate Emulsion Polymerization, SPARC-Sponsored Indo-Australian Workshop on Advanced Materials, hosted by Mahatma Gandhi University (MGU), Kottayam, Kerala, India on 17th January, 2025. **[INVITED LECTURE]**
26. Radhika Tiwari, Shikhar Dixit, Prabhav Gupta, Nishant Gola, Himanshu Singh, Bhawna Yadav, Radha Sachan, Ashwini Sood, Particle Size and Size Distribution in Methyl Methacrylate Emulsion Polymerization: A Review of Modelling and Experimental Studies, International Conference CHEM- TECHNOVA-2025 jointly organized by the Department of Chemical Engineering, Department of Bio-Chemical Engineering, IICHE-Student Chapter; Harcourt Butler Technical University, Kanpur during 3rd – 5th April 2025.
27. Ashish Kumar Singh, Ashwini Sood, Arun Kumar Gupta, Immobilization of Aluminium Nano Powder into Liquid Hydrocarbon Fuel Using Highly Active Surfactants, International Conference on Sustainable Energy and Advance Materials (ICSEAM-2025), UIET, School of Engineering and Technology, CSJM Kanpur from 18th to 19th April, 2025.
28. A. Sood, Validation of the Smith-Ewart Nucleation Model in Butyl Acrylate Emulsion Polymerization, 3rd International Conference on Catalysis, Chemical Science and Technology 2025 (ICCST 2025), **Singapore** during 3rd – 5th December 2025 **[INVITED LECTURE]**

AWARDS, HONOURS AND MAJOR RECOGNITIONS

- Listed in Marquis Who's Who in the World (2026).
- Fellow Membership (FWRA), awarded by the World Researchers Associations, Indore, India, in outstanding recognition of achievements and for the promotion of research and the environment, 24 July 2026.
- IMRF Bharat Vidya Ratna Award 2026, conferred by the International Multidisciplinary Research Foundation, India, in recognition of the consistent superior performance in Chemical Engineering.
- World Research Fellow of London (WRFL) – Lifetime Honour, conferred by the Universal World Research Innovation Centre, London, UK, for exceptional contributions to global research and innovation, 2025.
- Outstanding Researcher Award in Chemical Engineering, awarded by Scientific Laurels in recognition of extraordinary achievements in Chemical Engineering, 11 April 2025.
- VIRA Award of Excellence in Chemical Engineering, conferred by the Board of Management, Venus International Foundation, for contribution and achievement in the discipline of Engineering, 7 December 2024.
- Bharat Gaurav Puruskar – Certificate of Excellence, awarded by the KTK Outstanding Achievers and Education Foundation, for outstanding achievements and remarkable contributions in the field of Chemical Engineering, 16 June 2024.
- Fellow (FIE), Institution of Engineers (India), enrolled as a Fellow of the Institution, 7 June 2023.
- Chemical Weekly Award for Best Paper, IICHe NRC Award for Best Paper, and Kuloor Memorial Award for Best Technical Paper, conferred under the IICHe Awards for the Year 2020 for the best paper/technical paper published in Indian Chemical Engineer in 2019..
- Wall of Fame Certificate of Recognition, awarded by the Academic Council of uLektz, recognizing selection among the Top 50 Expert Faculties in India in Chemical, Bio, Medical, Marine, Petroleum and Textile Engineering, 31 October 2020.

- Life Time Achievement Award, awarded by the VDGOD Professional Association at the 1st International Scientist Awards on Engineering, Science and Medicine, Bangalore, 27 July 2019.
- Life Time Achievement Award, awarded by the International Organization of Scientific Research and Development (IOSRD) at the 88th International Research Awards on Engineering, Science and Management, Kolkata, 21–22 September 2018.
- IChE NRC Award – 3rd Best Paper in Indian Chemical Engineer, awarded by the Indian Institute of Chemical Engineers for the paper “A Population Balance Model for Butyl Acrylate Emulsion Polymerization”, at CHEMCON 2017, 27–30 December 2017.
- Bharat Vikas Award, awarded by the Institute of Self Reliance, Bhubaneswar, for loyalty, diligence and outstanding performance in the field of emulsion polymerization processes, 19 November 2017.
- Best Citizens of India Award 2017, awarded by the International Publishing House, New Delhi, for academic and professional contributions, 2017.
- Bharat Jyoti Award, awarded by the India International Friendship Society, New Delhi, for meritorious services, outstanding performance and remarkable role, 25 March 2017.
- Listed in Marquis's Who's Who in Science and Engineering, including the X Edition (2007), XI Edition (2011–2012) and XII Edition (2016–2017).
- Best Paper of the Session Award, awarded by the Indian Institute of Chemical Engineers, for the paper “Radical Entry in Emulsion and Miniemulsion Polymerization Processes” presented at CHEMCON 2003, 19–22 December 2003.

ACADEMIC AND COMPETITIVE EXAMINATION ACHIEVEMENTS

- Secured First Position in Class from KG-II through Class XI, demonstrating consistent academic excellence throughout school education.
- Secured Second Position in Class in KG-I and Class XII.
- Received a Merit Certificate under the National Merit Scheme for securing a high position in the All India Secondary School Examination (A.I.S.S.E.), Class X, 1982.
- Secured All India Rank (AIR) 847 in the IIT Joint Entrance Examination (IIT-JEE), 1984, and was selected for admission to the Indian Institute of Technology Kanpur.
- Qualified the University of Roorkee Engineering Entrance Examination, securing Rank 189, in the the year 1984.
- Qualified the Motilal Nehru Regional Engineering College (MNREC) Entrance Examination, securing Rank 432, in the year 1984.
- Qualified the Indian School of Mines (ISM), Dhanbad, Engineering Entrance Examination, securing Rank 62, in the year 1984.
- Secured Second Position in GATE 1988, with a 99.77 percentile.
- Received Research Assistantships from Lehigh University, USA, and Clarkson University, USA, 1988.

SESSION CHAIR AND CONFERENCE LEADERSHIP

- Session Chair, 2nd International Conference on Advances in Chemical and Material Sciences (ACMS-2026), held at the Indian Institute of Chemical Engineers, Kolkata, 12–14 April 2026. Received a Certificate of Appreciation for serving as Session Chair.
- Session Chair, International Conference on Sustainable Energy and Advance Materials (ICSEAM-2025), held at UIET, School of Engineering and Technology, CSJMU, Kanpur, 18–19 April 2025.
- Session Chair, INDACON 2025 – International Conference on “Chemical Resilience & Sustainable Practices: Advanced Materials in Water Purification Strategies for Desalination, Energy Production and Environmental Conservation”, jointly organized by the Department of Chemical Engineering, Department of Bio-Chemical Engineering, Harcourt Butler Technical University, Kanpur, and the Indian Desalination Association, 20–22 February 2025.
- Session Chair, International Conference CHEM-TECHNOVA-2024, jointly organized by the Department of Chemical Engineering, Department of Bio-Chemical Engineering and IChE Student Chapter, Harcourt Butler Technical University, Kanpur, 21–23 March 2024.

- Session Chair, CHEMCON-2022, organized by Harcourt Butler Technical University, Kanpur, 27–30 December 2022.
- Session Chair, International Chemical Engineering Conference 2021 – “100 Glorious Years of Chemical Engineering & Technology”, organized by the Department of Chemical Engineering, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, 16–19 September 2021. Received a Certificate of Appreciation and Acknowledgement for serving as Session Chair.
- Co-Chair of a Technical Session on Computational Nanotechnology, International Conference on Nanotechnology: Ideas, Innovations and Initiatives 2017, held at IIT Roorkee, 6–8 December 2017.
- Chair, three technical sessions on Chemical Reaction Engineering, Food Technology and Green Technology, CHEMCON 2007.

Member of Professional Bodies:

- Fellow, World Researchers Associations, Indore, India (2026).
- World Research Fellow of London (2026)
- Fellow (F-1297860), Institution of Engineers, India from 7 June, 2023
- Life Member (M-1430313), Institution of Engineers, India from 2011 to 2023.
- Life Member (LM 22415), Indian Institute of Chemical Engineers since 2001-2002
- Nominated for the membership of American Chemical Society, 2009-2010
- Life Member, Leaders' Club, Institute of Self Reliance, Bhubneshwar, Orissa since 2019.
- Member for 5 years, VDGOD Professional Association since 2019-2024.

Peer Reviewer for:

1. Polymer International.
 2. Colloid & Polymer Science (Received a letter of appreciation from the editor of Colloid & Polymer Science for a thoughtful review).
 3. Iranian Polymer Journal (reviewed 2 different manuscripts).
 4. Macromolecular Theory and Simulation.
 5. Polymer Bulletin (reviewed 2 different manuscripts).
 6. Advances in Polymer Technology.
 7. Polymer (reviewed 5 different manuscripts).
 8. Journal of Applied Polymer Science (reviewed 3 different manuscripts).
 9. Journal of Chemical, Environmental and Biological Engineering (reviewed 2 different manuscripts).
 10. Journal of Chemistry.
 11. Bioprocess Engineering.
 12. Ultra Engineer.
 13. Chemical Engineering Science (reviewed three different manuscripts).
 14. Colloids and Surfaces A: Physicochemical and Engineering Aspects.
 15. Journal of the Institution of Engineers (India): Series E (Reviewed 2 different manuscripts).
 16. Materials Proceeding
 17. Chemical Engineering Communications.
 18. Journal of Modern Chemistry & Chemical Technology.
- Peer reviewed 30 different manuscripts since 2008 till date.

Consultancy Assignments Conducted:

- Conducted Consultancy for Bajrang Petrochemicals Limited, Kanpur worth Rs.29500/- in 2018.
- Senior Consultant (Part-Time), **Sustainable Systems Design Enterprises**, Gurugram since 2026..

Administrative Experience:

I have undertaken extensive administrative and academic responsibilities at HBTU, Kanpur, including serving as acting HOD (Chemical Engineering) from 2013-2020 and as **Faculty In-Charge, Training & Placement, Department of Chemical Engineering**, where I have coordinated student training, internships, campus recruitment and industry–institute interaction. I have served as a **Member of the Board of Studies in Chemical Engineering**, contributing to the preparation, review, revision and modification of syllabi and curricula in accordance with emerging academic, technological and industrial requirements. I have also served as a **Member of M.Tech. and Ph.D. Admission/Recruitment Committees**, participating in the evaluation, interviews and selection of candidates. As **Nodal Officer for Divyangjan**, I have been involved in coordinating matters related to accessibility, institutional support and appropriate academic and administrative provisions for Divyangjan. I have also served as a **Member of the Students' Grievances Committee**, participating in the examination and resolution of student grievances. In addition, I have undertaken various departmental academic and administrative responsibilities, coordinated conferences, seminars, workshops and Faculty Development Programmes, and served as Session Chair in technical sessions at academic conferences. I have been involved in research and academic administration through the supervision and coordination of Ph.D., M.Tech. and B.Tech. research and project activities. I have also coordinated industry–institute interaction for training and placements with organizations including GAIL, EIL, HURL, Yara, KRIBHCO, IFFCO, IOCL and Topsoe, besides undertaking editorial and peer-review responsibilities for national and international journals.

Date: 17/10/2026

(Dr. Ashwini Sood)