Amit Sobti, Ph. D

Professor

Dr. SSB University Institute of Chemical Engineering and Technology

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Academic Qualifications

Ph. D	(Chemical Engineering)	Panjab University, Chandigarh (2015)
M. Tech.	(Chemical Engineering)	Banaras Hindu University, Varanasi (2003) 1st division with Honours
B. E.	(Chemical Engineering)	SLIET Longowal, Punjab Technical University Jalandhar (2001), 1st division with Honours

Professional Experience: 20 years

18 years at Panjab University, Chandigarh (2005 onwards)

2 years at JMIT Radaur, Haryana (2003-2005)

Research Area of Interest: Hydrodynamic behaviour of complex fluids and nanofluid drops

Research Publications

1. Kaur, H., **Sobti, A.**, Wanchoo, R. K. (2024). Preparation and rheological characterization of water-soluble Boger fluids. *Chemical Data Collections*, *49*, 101112. https://doi.org/10.1016/j.cdc.2023.101112 **(Elsevier)**

2. Kaur, H., **Sobti, A.**, Wanchoo, R. K. (2023). Minimum fluidization velocity and expansion behavior of spherical particle beds fluidized with inelastic and viscoelastic fluids. *Industrial & Engineering Chemistry Research*, *62*, 18704-18719. https://doi.org/10.1021/acs.iecr.3c02390 **(ACS Publications)**

3. Kaur, H., **Sobti, A.**, Wanchoo, R. K., & Toor, A. P. (2022). Experimental study on hydrodynamic behaviour of nanofluid particle moving through an immiscible quiescent liquid. *Results in Engineering*, *16*, 100760. doi.org/10.1016/j.rineng.2022.100760 **(Elsevier)**

4. Dhindsa, A., **Sobti, A.**, Wanchoo, R. K., & Toor, A. P. (2022). Study on mass transfer using nanofluid drops in liquid-liquid extraction column. *International Communications in Heat and Mass Transfer*, *136*, 106194. doi.org/10.1016/j.icheatmasstransfer.2022.106194 **(Elsevier)**

5. Guliani, D., **Sobti, A.,** & Toor, A. P. (2022). Titania impregnated mesoporous MCM-48 as a solid photocatalyst for the synthesis of methyle palmitate: Reaction mechanism and kinetics. *Renewable Energy*, *191*, 405-417. doi.org/10.1016/j.renene.2022.03.112 **(Elsevier)**

6. Guliani, D., **Sobti, A.**, & Toor, A. P. (2021). Comparative study on Graphene Oxide and MCM-48 based catalysts for esterification reaction. *Materials Today: Proceedings*, *41*, 805-811. doi.org/10.1016/j.matpr.2020.08.751 **(Elsevier)**

7. Sraw, A., Kaur, T., Pandey, Y., Verma, A., **Sobti, A.**, Wanchoo, R. K., & Toor, A. P. (2020). Photocatalytic degradation of monocrotophos and quinalphos using solar-activated S-doped TiO_2. *International Journal of Environmental Science and Technology*, *17*, 4895-4908. doi.org/10.1007/s13762-020-02802-0 **(Springer)**

8. Sinhmar, A., Setia, H., Kumar, V., **Sobti, A**., & Toor, A. P. (2020). Enhanced photocatalytic activity of nickel and nitrogen codoped TiO2 under sunlight. *Environmental Technology & Innovation*, *18*, 100658. doi.org/10.1016/j.eti.2020.100658 **(Elsevier)**

9. Sharma, N., Guliani, D., Kaur, K., Verma, A., **Sobti, A**., & Toor, A. P. (2019). Enhanced catalytic activity of nano-Fe_2O_3–MCM-48–SO_4 as a green catalyst for the esterification of acetic acid with methanol. *Iranian Journal of Science and Technology, Transactions A: Science*, *43*, 2831-2842. doi.org/10.1007/s40995-019-00779-1 **(Springer)**

10. Sharma, T., Kaur, M., **Sobti, A**., Rajor, A., & Toor, A. P. (2020). Sequential microbial-photocatalytic degradation of imidacloprid. *Environmental Engineering Research*, *25*(4), 597-604. doi.org/10.4491/eer.2019.150

11. Kaur, A., **Sobti, A**., Toor, A. P., & Wanchoo, R. K. (2019). Motion of spheres and cylinders in viscoelastic fluids: Asymptotic behavior. *Powder Technology*, *345*, 82-90. doi.org/10.1016/j.powtec.2018.12.073 **(Elsevier)**

12. Sraw, A., Kaur, T., Pandey, Y., **Sobti, A**., Wanchoo, R. K., & Toor, A. P. (2018). Fixed bed recirculation type photocatalytic reactor with TiO_2 immobilized clay beads for the degradation of pesticide polluted water. *Journal of Environmental Chemical Engineering*, *6*(6), 7035-7043. doi.org/10.1016/j.jece.2018.10.062 **(Elsevier)**

13. **Sobti, A**., Toor, A. P., & Wanchoo, R. K. (2018). Oscillatory and steady shear rheological properties of aqueous polyacrylamide solutions. *Chemical Data Collections*, *17-18*, 356-369. doi.org/10.1016/j.cdc.2018.10.010 **(Elsevier)**

14. Guliani, D., Kaur, K., Singh, N., **Sobti, A**., & Toor, A. P. (2019). Catalytic performance of sulfate-grafted graphene oxide for esterification of acetic acid with methanol. *Chemical Engineering Communications*, *206*, 592-604. doi.org/10.1080/00986445.2018.1514601 **(Taylor & Francis)**

15. Kaur, K., **Sobti, A**., Wanchoo, R. K., & Toor, A. P. (2018). Studies on glycerol conversion to tricaproin over sulfate promoted iron oxide as catalyst using response surface methodology. *Chemical Engineering Research and Design*, *132*, 276-284. doi.org/10.1016/j.cherd.2017.12.040 **(Elsevier)**

16. **Sobti, A**., Sehgal, R., & Wanchoo, R. K. (2017). Flow of viscoelastic fluid through a helical coil. *Chemical and Biochemical Engineering Quarterly*, *31*(1), 11-20. doi: 10.15255/CABEQ.2015.2314

17. Kaur, K., Jain, P., **Sobti, A**., & Toor, A. P. (2016). Sulfated metal oxides: eco-friendly green catalysts for esterification of nonanoic acid with methanol. *Green Processing and Synthesis*, *5*, 93-100. doi.org/10.1515/gps-2015-0087 **(De Gruyter)**

18. **Sobti, A**., & Wanchoo, R. K. (2015). Creeping flow of viscoelastic fluid through a packed bed: Effect of particle shape and porosity. *Particulate Science and Technology*, *33*, 463-471. doi.org/10.1080/02726351.2015.1010759 **(Taylor & Francis)**

19. **Sobti, A**., & Wanchoo, R. K. (2014). Creeping flow of viscoelastic fluid through a packed bed. *Industrial & Engineering Chemistry Research*, *53*, 14508-14518. doi.org/10.1021/ie502321a **(ACS Publications)**

20. **Sobti, A**., Gupta, R., Sirohi, R., & Wanchoo, R. K. (2013). Pressure drop studies on flow of viscoelastic fluid through a packed bed. *Particulate Science and Technology*, *31*, 547-554. doi.org/10.1080/02726351.2013.782934 **(Taylor & Francis)**

21. Gupta, R., Babita, Setia, H., **Sobti, A**., & Wanchoo, R. K. (2013). Experimental studies on pressure drop of TiO_2-water nanofluids flowing through circular tubes. *Journal of Nanofluids*, *2*, 201-207. doi.org/10.1166/jon.2013.1051

Book Chapters

1. Verma P., Shashni S., **Sobti A**., Toor A. P. (2023). Nano-magnetic ferrites for biodiesel synthesis. In: Singh J. P., Chae K. H., Srivastava R. C., and Caltun O. F. (eds.), Applications of Nanostructured Ferrites, pp. 199-212, ***Elsevier*.** ISBN: 978-0-443-18874-9

2. Verma A., Toor A. P., Bansal P., Sangal V., & **Sobti A.** (2019). TiO_2-assisted photocatalytic degradation of herbicide 4-chlorophenoxyacetic acid: Slurry and fixed-bed approach. In: Agnihotri A. K., Reddy K., and Bansal A. (eds.), Sustainable Engineering, Lecture Notes in Civil Engineering, 30, pp. 133-143, ***Springer Nature Singapore***, *Singapore.* ISBN: 978-981-13-6716-8

3. Singh R., Kumar V., Verma A., **Sobti A.**, & Toor A. P. (2019). Photocatalytic activity of Bi-doped for phenol degradation under UV TiO_2 and sunlight conditions. In: Agnihotri A. K., Reddy K., and Bansal A. (eds.), Sustainable Engineering, Lecture Notes in Civil Engineering, 30, pp. 201-2012, ***Springer Nature Singapore***, *Singapore.* ISBN: 978-981-13-6716-8

4. Kaur K., Toor A. P., **Sobti A.**, and Wanchoo R. K. (2016). Glycerol ester synthesis over heterogeneous catalysts. In: Arora R., and Grover N. K. (Eds.), Frontiers in Materials Research and Applications, pp. 167, *Excel India Publishers, New Delhi, India.* ISBN: 978-93-85777-23-3

5. **Sobti A.** (2015). Newtonian and non-Newtonian flow behaviour in packed bed of non-spherical particles. In: Technological Advances in Chemical, Petroleum and Natural Gas Engineering, pp 157, *Technology Publications, Dehradun*, ISBN: 81-901767-0-6

6. **Sobti A.**, Bakshi A., & Wanchoo R. K. (2015). Potential applications of nanofluids. In Singh B., Kaushik A., Mehta S.K., and Tripathi S. K. (Eds.), Nanotechnology: Novel Prospective and Prospects, (pp 339-344), ***McGrawHill Education***, *New Delhi*, *India*, ISBN (13): 978-93-392-2109-6; ISBN (10): 93-392-2109-5.

7. **Sobti A.** & Wanchoo R. K. (2013). Thermal conductivity of nanofluids. In Bansal A. and Tayade R. (Eds.), Engineering Applications of Nanoscience and Nanomaterials, Material Science Forum,757, pp 111-137, ***Trans Tech. publications, Switzerland***

8. **Sobti A.** & Wanchoo R. K. (2013). Enhancement in boiling heat transfer using nanofluids. In Sobti R C, Kaushik A, Singh B and Tripathi S K (Eds.), Emerging Paradigms in Nanotechnology (pp 372-380), ***Pearson Education***, *India*. ISBN: 978-81-317-8991-9

Conference Publications: 35

Sponsored Projects

Title	Funding Agency	Amount	Duration	Status
Hydrodynamic Study on Viscoelastic Fluid Flowing through Packed Bed	SERB (DST) Govt. of India New Delhi	Rs.17,64,000/-	3 Years (Dec.2012-Dec.2015)	Completed
Hydrodynamics and Mass Transfer Studies using Nanofluids/Boger Fluids	TEQIP of Dr. SSBUICET, MHRD Govt. of India	Rs. 1,00,000/-	1 Year (Aug.2018-Aug..2019)	Completed

Research Supervision

Ph. D: 03 (Degree awarded: 02; In progress: 01)

S. No.	Name of the Candidate	Thesis Title	Status
1.	Amanjot Kaur	Flow of complex fluids through fixed and fluidized bed: An experimental study	Ongoing
2.	Hasanpreet Kaur	Study on droplet behaviour and mass transfer from nanofluid particles in liquid-liquid extraction	Degree Awarded (2023)
3.	Disha Guliani	Esterification of palmitic acid using facile solid semiconductors and mesoporous 3-D framework based catalysts/photo-catalyst	Degree Awarded (2023)

M.E./M.Sc. thesis (Completed): 22

Faculty Development Programs/Conferences/Summer Schools/Workshops organised

- Joint course coordinator, International Summer School on Renewable Energy organized by Panjab University, Chandigarh in collaboration with Stony Brook University; July 8-26, 2019.
- Co-coordinator, Faculty Development Program "Innovative Approaches in Teaching and Research" under Technical Education Quality Improvement Program (TEQIP-III) of Dr. SSBUICET, Panjab University, Chandigarh; March 15-19, 2019.
- Joint coordinator, National conference on Advanced Oxidation Processes (AOP-2015), Dr. SSBUICET, Panjab University, Chandigarh; Oct. 15-16, 2015.
- Co-coordinator, Faculty Development Program "New Horizons in Energy, Environment and Nanotechnology", under Technical Education Quality Improvement Program (TEQIP-II) of Dr. SSBUICET, Panjab University, Chandigarh; Nov. 25-30, 2013.
- Sectional Secretary, Chandigarh Science Congress (CHASCON-2017), Panjab University, Chandigarh; March 9-11, 2017.
- Coordinator, GRE workshop, Dr. SSBUICET, Panjab University, Chandigarh; April 14, 2015.
- Convener, Finishing school on "Moving from Campus to Corporate Life, Dr. SSBUICET, Panjab University, Chandigarh; Sep. 19, 2015
- Co-coordinator, Soft skill workshops conducted under Technical Education Quality Improvement Program (TEQIP) of Dr. SSBUICET, Panjab University, Chandigarh

Members of Professional Bodies

- Life Associate member of Indian Institute of Chemical Engineers (IIChE: LAM-31360)
- Life member, Asian Polymer Association (APA: L387)