

List of Publication

Book Chapter

- (1) Mehul Bambhania, Nikul Patel, "Investigation of Spray Behaviour Simulation to predict spray tip penetration under ultra-high injection pressure", Chapter 20, ISBN 978-981-99-5989-1, Lecture Notes in Mechanical Engineering, Publisher: Springer Nature-Singapore., Pages 215-227, Published on 18/01/2024, DOI: https://doi.org/10.1007/978-981-99-5990-7_20

Journal Paper

- (1) Mehul Bambhania, Nikul Patel "Numerical modelling of the cavitation flow in throttle geometry", Journal of Applied Fluid Mechanics, Vol. 16, No. 2, pp. 257-267, 2023 (SCI & Scopus) (H index-34)
- (2) Mehul Bambhania, Nikul Patel "Hydrodynamic Cavitation in the Fuel Injector Nozzle and its Effect on Spray Characteristics: A Review", Journal of Heat and Mass Transfer Research, Vol. 10, pp. 1-20, 2023 (Scopus)

Conference Paper

- (1) Presented paper entitled "Investigation of spray behaviour simulation to predict spray tip penetration under ultra-high injection pressure" in the International conference in Fluid, Thermal and Energy System (ICFTES'22) at NIT-Calicut on 9th June 2022.
- (2) Presented paper entitled, "Experimental study for characterization of cavitation phenomenon in the optical nozzle" in International Conference on Recent Advances in (Applied) Sciences & Engineering (RAISE)12-13April,2023 organized by Faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda, (ISBN: 978-81-962938-1-9, pp 1-8)
- (3) Presented paper entitled "Characterization of the cavitation flow inside the rectangular shaped nozzle and its effect on Spray formation" International Conference on Recent Trends in Engineering and Sciences (RTES – 2025), SVNIT-Surat, 14-15 Feb 2025
- (4) Presented paper entitled "Numerical study of cavitation flow in scaled up cylindrical nozzle for diesel and waste cooking oil-based bio-diesel" International Conference on Recent Trends in Engineering and Sciences (RTES – 2025), SVNIT-Surat, 14-15 Feb 2025

Patent

- (1) Patent-1
Filed on: 01/05/2024
Title: Cavitation-Modulated Nozzle System with Pre-Chamber Pressure Equalization
Inventor Name: Mehul Bambhania, Ankit Bambhaniya, Alok Shah, Dr. Nikul Patel
Published/Grated Date: 24/06/2024
- (2) Patent-2
Filed on: 01/05/2024
Title: Single-Side Cavitation Nozzle with Parabolic Pressure Redistribution
Inventor Name: Mehul Bambhania, Ravi Valand, Alok Shah, Dr. Nikul Patel
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