

Anirudha Dhananjay Ambekar, Ph.D.

Assistant Professor

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Academic Background

Sr. No.	Educational Qualification	Year	University/Institution
3	Bachelor of Engineering (Mechanical)	2005	S.V.M. Engineering College, Chincholi, University of Pune,
4	Master of Technology (Energy Systems Engineering)	2007	Indian Institute of Technology Bombay, Mumbai
5	Doctor of Philosophy (Mechanical Engineering)	2015	Indian Institute of Technology Bombay, Mumbai

Academic, Research, and Industry Experience

1. **Assistant Professor**, Indian Institute of Technology Goa, India (May 2018 – Present)
2. **Post-doctoral Fellow**, Seoul National University, South Korea, (Dec 2015 – Mar 2018)
3. **Post-doctoral Fellow**, Indian Institute of Technology Bombay, India (Apr - Oct 2015)
4. **Doctoral Researcher**, Indian Institute of Technology Bombay, India (Jul 2010 - Apr 2015)
5. **Component Design Engineer**, QuEST Pvt. Ltd., Bangalore, India, (Jul 2007 - Aug 2010)

Research Interests

Experimental combustion diagnostics; sustainable (carbon-neutral) fuels; direct metal combustion; reduction of ultrafine particulate emissions; pollutant-mitigation technologies; aerospace propellant characterization and kinetics; thermal aging of energetic materials.

Research Grants as Principle Investigator

Sr.	Project Title	Funding agency
1	Technology development for 3D printing solid rocket propellants and their green alternatives	Start-up Research Grant (SRG) by ANRF (erstwhile SERB)
2	Insensitive high nitrogen binders for energetic applications	RESPOND grant, ISRO
3	Towards a machine-vision-based automatic flare stack monitoring system	Shell Technology Center, Bangalore
4	Direct combustion of metal fuels	Core Research Grant (CRG) by ANRF (erstwhile SERB)

Recent Publications

1. Gaunekar, S., and **Ambekar, A.** (2025). Effect of heating and purge flow rates on Magnesium Nitridation reaction using Thermogravimetry. *Thermochimica Acta*, 747, 179974. <https://doi.org/10.1016/j.tca.2024.179974>, (IF: 3.5)
2. Gaunekar, S., and **Ambekar, A.** (2025). The hygrothermal aging effects of guanidine nitrate/basic copper nitrate-based airbag gas generant. *Thermochimica Acta*, 180101. <https://doi.org/10.1016/j.tca.2025.180101>, (IF: 3.5)
3. Gaunekar, S., and **Ambekar, A.** (2025). Effect of Hygrothermal Aging on the Decomposition Reactions of Magnesium/Teflon/Viton (MTV) Pyrotechnic. *Propellants, Explosives, Pyrotechnics*, 50(2), e202400162, <https://doi.org/10.1002/prop.202400162>, (IF: 2)
4. Jain A., **Ambekar A.**, Thajudeen T. (2025). Effect of Particle Size Distribution of Nanoadditives in Titania-laden Diesel Fuel on the Fine and Ultrafine Particulate Emissions. *Energy*. 320, 135322. <https://doi.org/10.1016/j.energy.2025.135322>, (IF: 9.4)
5. Jain, A., **Ambekar, A.**, and Thajudeen, T. (2024). Effect of titania nano-additives on fine and ultrafine carbonaceous emissions during flame combustion of diesel. *Aerosol and Air Quality Research*, 24(5). <https://doi.org/10.4209/aaqr.230281>, (IF: 2.5)
6. Jain, A., Ambekar, A., and Thajudeen, T. (2023). Experimental investigation on the effect of size modification of alumina nano-additives on the performance and emission characteristics of a compression ignition engine. *Journal of Thermal Analysis and Calorimetry*, 149(1), 479–494. <https://doi.org/10.1007/s10973-023-12684-2>, (IF: 3.1)
7. Dhiman, R., Prakash, A., Saroj, S., Sahoo, P., **Ambekar, A.**, Kore, S. D., Thajudeen, T. Guttikunda, S. K. (2025). Occupational Health Risks from Welding Emissions: Exposure and Deposition of PM10, PM2.5, and Ultrafine Particles Across Welding Methods. *Environmental Science: Advances*. <https://doi.org/10.1039/D5VA00142K>, (IF: 4.4)
8. Prakash, A., Dhiman, R., **Ambekar, A.**, Thajudeen, T., and Kore, S. D. (2025). Investigating the effect of varying powder size range on particulate matter emission and mechanical properties of in-situ micropowder alloyed WAAM depositions. *Welding in the World*, 69, 1171–1190, <https://doi.org/10.1007/s40194-024-01922-2>, (IF: 2.5)
9. Dhiman, R., Prakash, A., Saroj, S., Sahoo, P., **Ambekar, A.**, Kore, S. D., Thajudeen, T., and Guttikunda, S. K. (2025). Comprehensive analysis of the fine and ultrafine particulate emissions from various welding sources in an industrial environment. *Atmospheric Pollution Research*, 102666, <https://doi.org/10.1016/j.apr.2025.102666>, (IF: 3.5)
10. Dhiman, R., Sharma, R., Jain, A., **Ambekar, A.**, Thajudeen, T., and Guttikunda, S. K. (2024). Spatial and temporal variation of cooking-emitted particles in distinct zones using Scanning Mobility Particle Sizer and a network of low-cost sensors. *Indoor Environments*, 1(2), 100008. <https://doi.org/10.1016/j.indenv.2024.100008>.
11. Prakash, A., Dhiman, R., **Ambekar, A.**, Thajudeen, T., & Kore, S. D. (2025). Investigations into metallurgical, mechanical, and particulate matter emissions in the in situ micropowder alloyed wire arc additive manufacturing process. *Welding International*, 39(3), 224-239. <https://doi.org/10.1080/09507116.2024.2442481>, (IF: 1.2)