

## FACULTY PROFILE



**Name:** Ankit Sonthalia, Ph. D

**Designation:** Assistant Professor

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### **Professional Qualification:**

Degree	Institute/Organization	Specialization	Year of Passing
Ph. D	Delhi Technological University, Delhi	Mechanical Engineering	2020
M. Tech	VIT Vellore/ARAI Pune	Automotive Engineering	2014
B. Tech	VIT Vellore	Mechanical Engineering	2010

### **Papers Published:**

- Papla Venugopal Inbanaathan, Dhinesh Balasubramanian, Van Nhanh Nguyen, Van Vang Le, Makatar Wae-Hayee, Ravikumar R, Ibbam Veza, Nagarajan Yukesh, M.A. Kalam, **Ankit Sonthalia**, Edwin Geo Varuvel, Comprehensive study on using hydrogen-gasoline-ethanol blends as flexible fuels in an existing variable speed SI engine, Accepted for publication in International Journal of Hydrogen Energy, 2023. (**SCI Indexed, Impact Factor: 7.715**)
- Prabhakar Sharma, Dhinesh Balasubramanian, Chu Thanh Khai, Inbanaathan Papla Venugopal, Mansoor Alruqi, Femilda Josephin JS, **Ankit Sonthalia**, Edwin Geo Varuvel, Enhancing the performance of renewable biogas powered engine employing oxyhydrogen: Optimization with desirability and D-optimal design, Fuel, 2023, 341, 12757. (**SCI Indexed, Impact Factor: 8.305**)
- P Rajakrishnamoorthy, CG Saravanan, Ramesh Natarajan, D Karthikeyan, J Sasikala, JS Femilda Josephin, M Vikneswaran, **Ankit Sonthalia**, Edwin Geo Varuvel, Exhaust emission control of SI engines using ZSM-5 zeolite supported bimetals as a catalyst synthesized from coal fly ash, Fuel, 2023, 340, 127380. (**SCI Indexed, Impact Factor: 8.305**)
- Deepam Goyal, Tarun Goyal, Sunil Kumar Mahla, Geetesh Goga, Amit Dhir, Dhinesh Balasubramanian, Anh Tuan Hoang, Makatar Wae-Hayee, JS Femilda Josephin, **Ankit Sonthalia**, Edwin Geo Varuvel, Kathirvel Brindhadevi, Application of Taguchi design in optimization of performance and emissions characteristics of n-butanol/diesel/biogas under dual fuel mode, Fuel, 2023, 338, 127246 (**SCI Indexed, Impact Factor: 8.305**)
- Sadashiva Lalsangi, VS Yaliwal, NR Banapurmath, Manzoore Elahi M Soudagar, Dhinesh Balasubramanian, **Ankit Sonthalia**, Edwin Geo Varuvel, Influence of hydrogen injection timing and duration on the combustion and emission characteristics of a diesel engine

operating on dual fuel mode using biodiesel of dairy scum oil and producer gas. Accepted for publication in International Journal of Hydrogen Energy, 2023. (**SCI Indexed, Impact Factor: 7.715**)

- Femilda Josephin Joseph Shobana Bai, Kaliraj Shanmugaiah, **Ankit Sonthalia**, Yuvarajan Devarajan, Edwin Geo Varuvel, Synergistic effect of hydrogen and waste lubricating oil on the performance and emissions of a compression ignition engine. International Journal of Hydrogen Energy, 2023, 48(60): 23296-23307. (**SCI Indexed, Impact Factor: 7.715**)
- S. Kiran, M. Leenus Jesu Martin, **Ankit Sonthalia** and Edwin Geo Varuvel, Application of Machine Learning Algorithms for Predicting the Engine Characteristics of a Wheat Germ Oil – Hydrogen Fuelled Dual Fuel Engine. Accepted for publication in International Journal of Hydrogen Energy, 2022. (**SCI Indexed, Impact Factor: 7.715**)
- S. Sathyanarayanan, S. Suresh, C. G. Saravanan, M. Vikneswaran, Gopinath Dhamodaran, **Ankit Sonthalia**, J. S. Femilda Josephin, Edwin Geo Varuvel, Experimental investigation and performance prediction of gasoline engine operating parameters fueled with diisopropyl ether-gasoline blends: Response surface methodology based optimization, Journal of Cleaner Production, 2022, 375, 133941 (**SCI Indexed, Impact Factor: 11.072**)
- Vikneswaran Malaiperumal, Chidambaram Ganapathy Saravanan, Vallinayagam Raman, Vikneswaran Malaiperumal, Premkumar Pandiarajan, **Ankit Sonthalia** and Edwin Geo Varuvel, Effect of intake port design modifications on diesel engine characteristics fuelled by pine oil-diesel blends, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 2022, In Press, DOI: 10.1080/ 15567036.2022.2038312. (**SCI Indexed, Impact Factor: 3.447**)
- Jyoti Singh Jadaun, Shilpi Bansal, **Ankit Sonthalia**, Amit K. Rai, Sudhir P. Singh, Biodegradation of plastics for sustainable environment, Bioresource Technology, 2022, 347, 126697. (**SCI Indexed, Impact Factor: 9.6**)
- V. Edwin Geo, S. Thiagarajan, **Ankit Sonthalia**, T. Prakash, Sary Awad, Fethi Aloui, A. Pugazhendhi, Studies on reducing carbon dioxide emission from a CRDI engine with hydrogen and a carbon capture system. International Journal of Hydrogen Energy, 2022, 47(62), 26746-26757 (**SCI Indexed, Impact Factor: 7.715**)
- S. Thiagarajan, Edwin Geo Varuvel, V. Karthickeyan, **Ankit Sonthalia**, Gopalakrishnan Kumar, C.G. Saravanan, B. Dhinesh and Arivalagan Pugazhendhi, Effect of hydrogen on Compression-ignition (CI) engine fuelled with vegetable oil/biodiesel from various feedstocks: A Review, International Journal of Hydrogen Energy, 2022, 47(88), 37648-37667. (**SCI Indexed, Impact Factor: 7.715**)
- V. Edwin Geo, S. Thiagarajan, **Ankit Sonthalia**, T. Prakash, Sary Awad, Fethi Aloui, A. Pugazhendhi, 2021, CO<sub>2</sub> reduction in a common rail direct injection engine using the combined effect of low carbon biofuels, hydrogen and a post combustion carbon capture system. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 2021, In Press, DOI: 10.1080/15567036.2021.1974128. (**SCI Indexed, Impact Factor: 3.447**)
- **Ankit Sonthalia**, Naveen Kumar, Mukul Tomar, Edwin Geo V, S. Thiagarajan, A. Pugazhendhi, Moving ahead from Hydrogen to Methanol Economy: Scope and challenges, Clean Technologies and Environmental Policy, 2023, 25(2), 551-575. (**SCI Indexed, Impact Factor: 3.636**)
- Mukul Tomar, Hansham Dewal, **Ankit Sonthalia**, Naveen Kumar, Optimization of spark-ignition engine characteristics fuelled with oxygenated bio-additive (triacetin) using response surface methodology, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2020, 235(4), 841-856, DOI: 10.1177/0954408920971110. (**SCI Indexed, Impact Factor: 1.606**)

- Mukul Tomar, **Ankit Sonthalia**, Naveen Kumar, Hansham Dewal, Waste glycerol derived bio-propanol as a potential extender fuel for compressed ignition engine, *Environmental Progress and Sustainable Energy*, 2021, 40(2): e13526. (**SCI Indexed, Impact Factor: 1.989**)
- Naveen Kumar, **Ankit Sonthalia**, Mukul Tomar, Rashmi Koul, An Experimental Investigation on Spray, Performance and Emission of Hydrotreated Waste Cooking Oil Blends in an Agricultural Engine. *International Journal of Engine Research*, 2021, 22(7): 2305-2317. (**SCI Indexed, Impact Factor: 2.382**)
- **Ankit Sonthalia**, Naveen Kumar, Comparison of fuel characteristics of hydrotreated waste cooking oil with its biodiesel and fossil diesel, *Environmental Science and Pollution Research*, 2021, 28(10): 11824-11834. (**SCI Indexed, Impact Factor: 3.056**)
- **Ankit Sonthalia**, Shivam Garg, Rishav Sharma, S. Thiyagarajan, Naveen Kumar, Effect of electrostatic precipitator on exhaust emissions in biodiesel fuelled CI engine. *Environmental Science and Pollution Research*, 2021, 28(10): 11850-11859. (**SCI Indexed, Impact Factor: 3.056**)
- Ramesh Kumar Chidambaram, **Ankit Sonthalia**, Gopal Poornananadan, Edwin Geo Varuvel, Thiyagarajan Subramanian, Optimization of compression ratio and injection timing of a diesel engine Fueled with oxygenated blends using fuzzy logic-based Taguchi method, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 2021, In Press, DOI: 10.1080/15567036.2020.1871123. (**SCI Indexed, Impact Factor: 3.447**)
- V. Edwin Geo, G Fol, F Aloui, S. Thiyagarajan, M. Jerome Stanley, **Ankit Sonthalia**, K Brindhadevi, C G Sarvanan, Experimental analysis to reduce CO<sub>2</sub> and other emissions of CRDI CI engine using low viscous biofuels, *Fuel*, 2021, 283: 118829. (**SCI Indexed, Impact Factor: 5.776**)
- Naveen Kumar, **Ankit Sonthalia**, Rashmi Koul, Optimization of the process parameters for hydrotreating used cooking oil by the Taguchi method and Fuzzy logic. *Journal of Energy Resources Technology*; 2020, 142(12): 123006. (**SCI Indexed, Impact Factor: 3.183**)
- S. Thiyagarajan, **Ankit Sonthalia**, V. Edwin Geo, T. Prakash, V. Karthickeyan, B. Ashok, K. Nanthagopal, B. Dinesh. Effect of manifold injection of methanol/n-pentanol in safflower biodiesel fuelled CI engine. *Fuel*, 2020, 261: 116378. (**SCI Indexed, Impact Factor: 5.776**)
- S. Thiyagarajan, **Ankit Sonthalia**, V. Edwin Geo, B. Chokkalingam, Effect of Waste Exhaust Heat on Hydrogen Production and its Utilization in CI Engine, *International Journal of Hydrogen Energy*, 2020, 45(10): 5987-5996. (**SCI Indexed, Impact Factor: 5.816**)
- V. Edwin Geo, **Ankit Sonthalia**, G. Nagarajan, B. Nagalingam, Fethi Aloui, Effect of Port Premixed LPG on the Engine Characteristics, *Journal of Energy Resources technology*, 2019, 141(11): 112206 (8 pages) (**SCI Indexed, Impact Factor: 3.183**)
- **Ankit Sonthalia**, Naveen Kumar, Hydroprocessed vegetable oil as a fuel for transportation sector: a review, *Journal of Energy Institute*, 2019, 92(1), 1-17. (**SCI Indexed, Impact Factor: 4.7478**)
- S. Thiyagarajan, **Ankit Sonthalia**, V. Edwin Geo, B. Ashok, K. Nanthagopal, V. Karthickeyan, B. Dhinesh, Effect of electromagnet-based fuel-reforming system on high-viscous and low-viscous biofuel fueled in heavy-duty CI engine, *Journal of Thermal Analysis and Calorimetry*, 2019, 138: 633-644. (**SCI Indexed, Impact Factor: 2.731**)
- S. Thiyagarajan, **Ankit Sonthalia**, V. Edwin Geo, Effect of calcite/activated carbon-based post-combustion CO<sub>2</sub> capture system in a biodiesel-fueled CI engine—An experimental

study, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 2019, 41(16): 1972-1987, (**SCI Indexed, Impact Factor: 3.447**)

- D. Boopathi, S. Thiagarajan, **Ankit Sonthalia**, P. Parthiban, S. Devanand & V. Edwin Geo, Effect of methanol fumigation on performance and emission characteristics in a waste cooking oil-fuelled single cylinder CI engine. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 2019, 41(9): 1088-1096, DOI: 10.1080/15567036.2018.1539142. (**SCI Indexed, Impact Factor: 3.447**)
- V. Edwin Geo, **Ankit Sonthalia**, S. Thiagarajan, Fethi Aloui, NO<sub>x</sub>-smoke trade off characteristics of minor vegetable oil blends synergy with oxygenate in a commercial CI engine. *Environmental Science and Pollution Research*, 2018, 25(35): 35715-35725. (**SCI Indexed, Impact Factor: 3.056**)
- Femilda Josephin J.S., V. Edwin Geo, **Ankit Sonthalia**, C. Bharatiraja, Fethi Aloui, Predicting the different engine parameters of a rubber seed oil-ethanol dual fuel engine using artificial neural networks. *International Journal of Global Warming*, 2018, 16(4): 485-506. (**SCI Indexed, Impact Factor: 0.782**)
- V. Edwin Geo, **Ankit Sonthalia**, Fethi Aloui, Femilda Josephin J.S., Study of engine performance, emission and combustion characteristics fueled with diesel-like fuel produced from waste engine oil and waste plastics. *Frontiers of Environmental Science and Engineering*, 2018, 12(4): 8. (**SCI Indexed, Impact Factor: 4.053**)
- V. Edwin Geo, **Ankit Sonthalia**, G. Nagarajan, B. Nagalingam, Studies on performance, combustion and emission of a single cylinder diesel engine fuelled with rubber seed oil and its biodiesel along with ethanol as injected fuel. *Fuel*, 2017, 209: 733-741. (**SCI Indexed, Impact Factor: 5.776**).
- Boopathy D, **Ankit Sonthalia**, Devanand S, Experimental investigations on the effect of hydrogen induction on performance and emission behaviour of a single cylinder diesel engine fuelled with palm oil methyl ester and its blend with diesel, *Journal of Engineering Science and Technology*, 2017, 12(7): 1972-1987. (**Scopus Indexed**)
- **Ankit Sonthalia**, Somesh Reddy, C. Ramesh Kumar, and Keval Kamani, Theoretical Investigation of Waste Heat Recovery from an IC Engine Using Vapor Absorption Refrigeration System and Thermoelectric Converter, DOI: 10.1002/htj.21133, *Heat Transfer—Asian Research*, 2015, 44(6): 499-514 (**Scopus Indexed**).
- **Ankit Sonthalia**, C. Ramesh Kumar, U. Sharma, A. Punganur, S. Abbas, Combustion and Performance Characteristics of a Small Spark Ignition Engine fuelled with HCNG, *Journal of Engineering Science and Technology*, 2015, 10(4): 404- 419. (**Scopus Indexed**).
- Somesh T Reddy, **Ankit Sonthalia**, C. Ramesh Kumar, Performance Analysis of Single Module Thermoelectric Generator, *Advanced Materials Research*, 2014, Vols. 875-877 pp. 1625-1629 (**Scopus Indexed**).
- **Ankit Sonthalia**, C. Ramesh Kumar, The effect of compression ring profile on the friction force in an Internal Combustion Engine, *Tribology in Industry*, 2013, 35(1), 74-83 (**Scopus Indexed**).
- C. Ramesh Kumar, **Ankit Sonthalia**, Rahul Goel, Experimental Study on Waste Heat Recovery from IC engine using Thermoelectric Technology, *Thermal Science*, 2011, 15(4): 1011-1022. (**SCI Indexed, Impact Factor: 1.574**)
- C. Ramesh Kumar, **Ankit Sonthalia**, Rahul Goel, A new approach to study wear and energy saving engine oils using nano-lubricants in IC engine, *International Journal of Nanotechnology and Application*, 2010, 4(3): 169-183.

### **Conferences Attended:**

- Naveen Kumar & **Ankit Sonthalia**, Performance and emission characteristics of a single cylinder diesel engine fuelled with hydrotreated waste cooking oil, (2020), 8<sup>th</sup> International Symposium on Fusion of Science and Technology (ISFT – 2020)
- Naveen Kumar & **Ankit Sonthalia**, Effect of blends of hydrotreated used cooking oil, biodiesel and diesel on the performance and emission characteristics of a single cylinder diesel engine, (2020), 8<sup>th</sup> International Symposium on Fusion of Science and Technology (ISFT – 2020)
- Ramesh Kumar C, Ankit Sonthalia, & Anoop Dubey, The effect of compression ring profile on the friction force in an internal combustion engine: A simulation, (2012), 5<sup>th</sup> International Conference on Science, Engineering and Technology at VIT Vellore.
- Design and Analysis of a Submarine Hull and its Varied Features, (2009), RAIME 09 at National Engineering College, Kovilpatti.
- Performance and Emission Characteristics of a Hydrogen fuelled SI engine, (2009), ICAMB 09 at VIT University

### **Book Chapters:**

- Naveen Kumar, HS Pali, **Ankit Sonthalia**, Sidharth Bansal, Higher Alcohols as Diesel Engine Fuel. In Gupta A.K., De A., Aggarwal S.K., Kushari A., Runchal A.K. (eds) Advances in Energy and Combustion. Green Energy and Technology. Springer, Singapore. eBook ISBN: 978-981-16-2648-7 DOI: [https://doi.org/10.1007/978-981-16-2648-7\\_7](https://doi.org/10.1007/978-981-16-2648-7_7)
- S. Thiagarajan, **Ankit Sonthalia**, V. Edwin Geo, Karthikeyan Viswanathan, Dhinesh Balasubramaniam, Effect of low carbon biofuel on carbon emissions in biodiesel fueled CI engine. In: Abul Kalam Azad, Mohammad Masud Kamal Khan (eds) Bioenergy Resources and Technologies. Academic Press, Elsevier Inc. ISBN: 978-0-12-822525-7 DOI: 10.1016/C2019-0-05000-5
- Shilpi Bansal, Lokesh Narnolia, **Ankit Sonthalia**, Potential Raw Materials and Production Technologies for Biorefineries. In: Kuila A., Mukhopadhyay M. (eds) Biorefinery Production Technologies for Chemicals and Energy. Scrivener Publishing LLC. eBook ISBN: 9781119593065 DOI: 10.1002/9781119593065.
- Naveen Kumar, Mukul Tomar, **Ankit Sonthalia**, Sidharth Bansal, Parvesh Kumar, Harveer S. Pali and Dushyant Mishra. Methanol-Based Economy: A Way Forward to Hydrogen. In: De A., Gupta A., Aggarwal S., Kushari A., Runchal A. (eds) Sustainable Development for Energy, Power, and Propulsion. Springer, Singapore, 2021. eBook ISBN: 978-981-15-5667-8 DOI: [https://doi.org/10.1007/978-981-15-5667-8\\_23](https://doi.org/10.1007/978-981-15-5667-8_23)
- Naveen Kumar, **Ankit Sonthalia**, HS Pali, Sidharth Bansal, Next Generation Biofuels – Opportunities and Challenges, In: Gupta A., De A., Aggarwal S., Kushari A., Runchal A. (eds) Innovations in Sustainable Energy and Cleaner Environment. Green Energy and Technology. Springer, Singapore, 2019, 171-191. eBook ISBN 978-981-13-9012-8 DOI: [https://doi.org/10.1007/978-981-13-9012-8\\_8](https://doi.org/10.1007/978-981-13-9012-8_8)
- Naveen Kumar, **Ankit Sonthalia**, Harveer S. Pali and Sidharth Bansal. Alternative Fuels for Diesel Engines: New Frontiers, In: Richard Viskup (eds) Diesel and Gasoline Engines, IntechOpen, 2018, DOI: <https://doi.org/10.5772/intechopen.80614>.

## **Professional Membership**

- Life member of Institution of Engineers, India
- Member of Society of Automotive Engineers, India

## **Work Experience:**

**SRM Institute of Science and Technology, NCR Campus, Ghaziabad:** Assistant Professor in the Department of Automobile Engineering, (Dec 2015 – Present)

**SRM Institute of Science and Technology, Kattankulathur/Chennai Campus:** Assistant Professor in the Department of Automobile Engineering, (Feb 2015 – Dec 2015)

**Courses Taught:** Thermodynamics, Applied Thermal for Automotive Engineers, Automotive Engine, Engine Systems, Alternate Fuels and Pollution Control, Vehicle Performance and Testing, Gas Dynamics and Space Propulsion, Engineering Mechanics, Machine Drawing, and Engineering Graphics.

## **Responsibilities:**

- Head in-charge of the department of mechanical (2021-22) and automobile engineering (2019-2022)
- Academic coordinator of the department
- Time Table Coordinator of the department
- NAAC Coordinator of the department
- Part of the internal assessment test conducting team
- Handled major project for final year students
- Instrumental in the installation of 4-wheeler chassis dynamometer and suspension and brake tester in automobile lab

## **Other Activities**

- Convened 2<sup>nd</sup> International Conference of Future Trends in Materials and Mechanical Engineering (ICFTMME – 22) at SRM IST, NCR Campus.
- Convened a 6-days (23 to 28 May, 2022) Faculty Development Program Recent Trends in Mechanical Engineering
- Managing Guest Editor for Materials Today Proceedings (Elsevier)
- Guest Editor for Journal of Nanomaterials (Hindawi)
- Editing a book titled “Handbook on thermal management systems for e-mobility and other applications” for Elsevier (Publishing in 2024)
- Recognition for Session Chair in PRIME – 2021 held at NIT Patna
- Received Research Excellence Award at Delhi Technological University for publishing paper in 2018 and 2022.
- Reviewed papers for International Journal of Hydrogen Energy (Elsevier), Energy (Elsevier), Fuel (Elsevier), Heliyon (Elsevier), Journal of Hazardous Material (Elsevier), SAE International Journal of Fuels and Lubricants, Clean Technologies and Environment Policy (Springer), Energy Sources Part A (Taylor and Francis), Energies (MDPI), Sustainability (MDPI)
- Attended workshop on Research Methodology through ICT organized by NITTR Chandigarh

- Attended workshop on Recent Trends in Automobile Engineering through ICT organized by NITTR Chandigarh
- Participated in online FDP on Advanced Energy Conversion Technologies organized by Department of Mechanical Engineering, SRM IST, Chennai.
- Participated in 3<sup>rd</sup> Summer school of Automotive Technology, organized by SAE northern India section through online mode.
- Participated in AICTE sponsored ATAL online Faculty Development Program on Alternate Fuels sponsored by University College of Engineering, Anna University.
- Participated in SIAM (Virtual) Tri Lecture Series on Active & Passive Vehicular Safety Standards - Technology and Safety Features of Two & Three Wheelers
- Participated in SIAM (VIRTUAL) Tri Lecture Series on Environment “Indian Auto Industry’s Journey to BS VI Milestone”
- Completed NPTEL Online Course: IC Engines and Gas Turbines
- Completed courses on Coursera.
- Faculty Coordinator for Innovate 2018.
- Participated in ERUDITIA 2018, FDP Series conducted by SRM IST, NCR Campus
- Jointly Organized 1<sup>st</sup> International Conference on New Frontiers in Engineering, Science and Technology – 2018
- Participated in 2 days’ workshop on Recent Trends in Diesel Engine Technology organized by DTU
- Participated in 5 days’ proficiency improvement program on Powertrain Engineering conducted by ARAI, Pune
- Received best oral presentation award in 5<sup>th</sup> International Conference on Science, Engineering and Technology at VIT Vellore
- Qualified Gate exam in 2010
- Attended a four weeks industrial training at Hindustan Aeronautics Limited (Transport Aircraft Division) Kanpur, May 2007
- Five Months Internship at ARAI, Pune, Dec 2013