

# Dr. Akhilendra Pratap Singh

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## Academic Information

Degree	Stream	Year	Marks	Institute/University
Ph.D.	Mechanical Engineering	2010-2017	7.5/10	IIT Kanpur, India
M. Tech	Mechanical Engineering	2008-2010	8.75/10	IIT Kanpur, India
B. Tech	Mechanical Engineering	2004-2008	76.94/100	KNIT Sultanpur, India

## Area of Research Interest

- ✓ Advanced low temperature combustion
- ✓ Optical diagnostics with special reference to engine endoscopy and PIV
- ✓ Combustion diagnostics
- ✓ Engine emission measurement
- ✓ Particulate characterization and their control
- ✓ Alternative fuels

## Awards and Honors

- ✓ Awarded with "**Young Scientist Award-2019**" by International Society for Energy, Environment and Sustainability.
- ✓ Awarded with "**Indo-US Postdoctoral Fellowship**" by Science and Engineering Research Board (SERB) for 12 months.
- ✓ Awarded with "**Young Engineer Award**" by The Institution of Engineers (India) for the year 2017.
- ✓ Awarded "**Best Ph.D. Thesis Award**" by International Society for Energy, Environment and Sustainability in 2017.
- ✓ Awarded prestigious "**Senior Research Associate**" fellowship for three years (2014-2017) under the scientist's pool scheme of Council of Scientific and Industrial Research, New Delhi, India.
- ✓ Won "**Best Paper Presentation Award in Track**" in International Conference on "Sustainable Energy and Environmental Challenges (SEEC-2017)" 26<sup>th</sup>-28<sup>th</sup> February 2017 at Center of Innovative and Applied Bioprocessing (CIAB), Mohali, India.

- ✓ Awarded “**Best Poster Award**” in International Workshop on Sustainable Energy, Environment & Safety with Railway Centric Theme- 2015, Lucknow, India.
- ✓ Won **2<sup>nd</sup> prize in paper presentation** entitled “Statistical Analysis of Cycle-to-Cycle Variations of Methanol Fuelled HCCI Combustion Engine” in International Mobility Conference-2012, January 2012, New Delhi, India.
- ✓ Won **3<sup>rd</sup> prize in poster presentation** “HCCI Engine using Diesel like Fuels” in International Workshop on Advances in Combustion and Transportation-2010 at IIT Kanpur.
- ✓ Got financial support from Science & Engineering Research Board (SERB), Govt. of India under **International Travel Support** (ITS) scheme for presenting a research paper in SAE World Congress in April 2015, Detroit, USA.
- ✓ Awarded with “**Merit Scholarship**” by UPTU in all four years of B.Tech.

### **Employment Details**

- ✓ Working as “**Senior Project Associate**” at Indian Institute of Technology Kanpur, Kanpur, India. *(From January 2019 to Till date)*
- ✓ Worked as “**Postdoctoral Fellow**” under the Indo-US Postdoctoral Fellowship of Science and Engineering Research Board (SERB), India at Engine Research Center, University of Wisconsin, Madison, USA. *(From December 2017 to Decemebr 2018)*
- ✓ Worked as “**Senior Research Engineer**” at Indian Institute of Technology Kanpur, Kanpur, India. *(From March 2017 to December 2017)*
- ✓ Worked as “**Senior Research Associate**” fellowship for three years under the scientist's pool scheme of Council of Scientific and Industrial Research, New Delhi, India. *(From March 2014 to February 2017)*

### **Publications**

#### **Doctoral Dissertation**

Ph.D. Thesis on “**Mode Switching Prototype Engine Development for Low Temperature Combustion**”, under the supervision of Prof. Avinash Kumar Agarwal at Indian Institute of Technology Kanpur, India. (2010-2017)

#### **Master Dissertation**

M.Tech Thesis on “**Development of Diesel HCCI Engine: An Experimental Investigation of Performance, Emission and Combustion Characteristics**”, under the supervision of Prof. Avinash Kumar Agarwal at Indian Institute of Technology Kanpur, India. (2008-2010)

### **Refereed International Journals**

- (1) Akhilendra P. Singh, Nikhil Sharma, Vikram Kumar, Dev Prakash Satsangi, Avinash K. Agarwal, “Fuel Injection Strategy for Utilization of Mineral Diesel-Methanol Blend in a Common Rail Direct Injection Engine”, Accepted for Publication in *ASME Journal of Energy Resources and Technology*, 2019. *(IF= 1.688)*

- (2) Akhilendra Pratap Singh, Avinash Kumar Agarwal, “Biodiesel Spray Characteristics and Their Effect on Engine Combustion and Particulate Emissions”, Accepted for Publication in *ASME Journal of Energy Resources and Technology*, 2019. (IF= 1.688)
- (3) Akhilendra Pratap Singh, Avinash K. Agarwal, “Performance and emission characteristics of conventional diesel combustion/partially premixed charge compression ignition combustion mode switching of biodiesel-fueled engine”, *International Journal of Engine Research*, 2019. (IF= 2.272) DOI: 10.1177/1468087419860311
- (4) Avinash K. Agarwal, Nikhil Sharma, Akhilendra Pratap Singh, Vikram Kumar, Dev Prakash Satsangi, Chetal Patel, “Adaptation of methanol-dodecanol-diesel blend in diesel genset engine”, *ASME Journal of Energy Resources and Technology*; 141(10): 102203, 2019. DOI: 10.1115/1.4043390
- (5) Avinash Kumar Agarwal, Akhilendra Pratap Singh, S. S. Thipse, Mukti Prasad, “Intermodal and Intelligent Transportation Systems for Developed India”, Accepted for Publication in *Journal of Energy and Environmental Sustainability*, 2019. (IF= NA)
- (6) Akhilendra Pratap Singh, Avinash K. Agarwal, “Low Temperature Combustion Engines and Mode Switching Strategies – A review”, *Journal of Energy and Environmental Sustainability*; 6:40-45, 2018. (IF= NA)
- (7) Avinash K Agarwal, Akhilendra Pratap Singh, Tarun Gupta, Rashmi A Agarwal, Nikhil Sharma, Prashant Rajpoot, Swaroop K Pandey, Bushra Ateeq, “Mutagenicity and Cytotoxicity of Particulates Emitted from Biodiesel Fuelled Engines”, *Environmental Science & Technology*; 52(24):14496-14507, 2018. (IF= 6.653)
- (8) Avinash K. Agarwal, Akhilendra Pratap Singh, Rakesh Kumar Maurya, Pravesh Chandra Shukla, Atul Dhar, Dhananjay Kumar Srivastava, “Combustion characteristics of a common rail direct injection engine using different fuel injection strategies”, *International Journal of Thermal Sciences*; 134: 475-484, 2018. (IF= 3.070) DOI: 10.1016/j.ijthermalsci.2018.07.001
- (9) Avinash K Agarwal, Bushra Ateeq, Tarun Gupta, Akhilendra Pratap Singh, Swaroop K Pandey, Nikhil Sharma, Rashmi A Agarwal, Neeraj K. Gupta, Hemant Sharma, Ayush Jain, Pravesh C Shukla, “Toxicity and Mutagenicity of Exhaust from Compressed Natural Gas: Could this be a Solution for Megacities with Mixed-Traffic Conditions?”, *Environmental Pollution*, 239: 499-511, 2018. (IF= 5.552) DOI: 10.1016/j.envpol.2018.04.028
- (10) Akhilendra Pratap Singh, Avinash K. Agarwal, “Evaluation of Fuel Injection Strategies for Biodiesel Fueled CRDI Engine Development and Particulate Studies”, *ASME Journal of Energy Resources and Technology*; 140(10):102201-102201-17, 2018. (IF= 1.688) DOI: 10.1115/1.4039745
- (11) Akhilendra Pratap Singh, Nikhil Bajpai, Avinash K. Agarwal, “Combustion Mode Switching Characteristics of a Medium-Duty Engine Operated in CI/ PCCI Combustion Modes”, *ASME Journal of Energy Resources and Technology*; 140(9):092201-092201-11, 2018. (IF= 1.688) DOI: 10.1115/1.4039741
- (12) Suresh J. Gadekar, Akhilendra Pratap Singh, Avinash K. Agarwal, “Visualization and Characterization of Engine In-Cylinder Flow Structures for different Intake Port Geometries using Tomographic PIV”, *Physics of Fluids*, 29, 095104, 2017. (IF= 2.232) DOI: 10.1063/1.5000725

- (13) **Akhilendra Pratap Singh**, Ayush Jain, Neeraj Gupta, Avinash K. Agarwal, “Sensitivity of Intake Charge Temperature and Fuel Properties on Low Temperature Combustion: An Experimental Study”, *International Journal of Engine Research*, 1-26, 2017. (IF= 2.237) DOI: 10.1177/1468087417730215
- (14) Avinash K. Agarwal, Suresh J. Gadekar, **Akhilendra Pratap Singh**, “In-cylinder Flow Evolution using Tomographic PIV in an Internal Combustion Engine”, *ASME Journal of Energy Resources and Technology*; 140-1: 012207-10, 2018. (IF= 1.688) DOI: 10.1115/1.4037686
- (15) **Akhilendra Pratap Singh**, Ayush Jain, Avinash Kumar Agarwal, “Development of Fuel Injection Strategy for PCCI Engine Fuelled with Diesel and Biodiesel Blends”, *Energy and Fuels*, 31 (8): 8594–8607, 2017. (IF= 2.835) DOI: 10.1021/acs.energyfuels.6b03393
- (16) **Akhilendra Pratap Singh**, Anuj Pal, Neeraj Kumar Gupta, Avinash K. Agarwal, “Particle Emission Characteristics of Laser Ignition vs. Spark Ignition of Hydrogen Fuelled Engine”, *International Journal of Hydrogen Energy*, 42(24):15956-15965, 2017. (IF= 3.419). DOI: 10.1016/j.ijhydene.2017.04.031
- (17) **Akhilendra Pratap Singh**, Avinash K. Agarwal, “Partially Homogenous Charge Compression Ignition Engine Development for Low Volatility Fuels”, *Energy and Fuels*, 31 (3): 3164–3181, 2017. (IF= 2.835) DOI: 10.1021/acs.energyfuels.6b02832
- (18) Avinash Kumar Agarwal, **Akhilendra Pratap Singh**, Rakesh K. Maurya, “Evolution, Challenges and Path Forward for Low Temperature Combustion Engines”, *Progress in Energy and Combustion Science*, 61:1-56; 2017. (IF= 23.634) DOI: 10.1016/j.peccs.2017.02.001
- (19) Avinash K. Agarwal, **Akhilendra Pratap Singh**, Anuj Pal, “Effect of Laser Ignition Parameters and Compression Ratio on Particulate Emissions from Hydrogen Fuelled Engine”, *International Journal of Hydrogen Energy*; 42(15): 10622-10635, 2017. (IF= 3.419) DOI: <https://doi.org/10.1016/j.ijhydene.2017.03.074>
- (20) Ayush Jain, **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Effect of Split Fuel Injection and EGR on NO<sub>x</sub> and PM Emission Reduction in a Low Temperature Combustion (LTC) Mode Diesel Engine”, *Energy*, 122: 249-264, 2017. (IF= 4.292) DOI: 10.1016/j.energy.2017.01.050
- (21) Ayush Jain, **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Effect of Fuel Injection Parameters on Combustion Stability and Emissions of a Mineral Diesel Fueled Partially Premixed Charge Compression Ignition (PCCI) Engine”, *Applied Energy*, 190: 658-669, 2017. (IF= 6.222) DOI: 10.1016/j.apenergy.2016.12.164
- (22) **Akhilendra Pratap Singh**, Anuj Pal, Avinash Kumar Agarwal, “Comparative particulate characteristics of hydrogen, CNG, HCNG, gasoline and diesel fueled engines”, *Fuel*, 185: 491-499, 2016. (IF= 4.140) DOI: 10.1016/j.fuel.2016.08.018
- (23) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Diesoline, Diesohol, and Diesosene Fuelled HCCI Engine Development”, *ASME Journal of Energy Resources Technology*; 138: 052212-1, 2016. (IF= 1.688) DOI: 10.1115/1.4033571
- (24) Avinash Kumar Agarwal, **Akhilendra Pratap Singh**, Anuj Agarwal, “Evolution, Trends and Applications of Endoscopy in Internal Combustion Engines”, *Journal of Energy and Environmental Sustainability*, 1: 56-66, 2016. (IF= NA) (ISSN= 2455-2259)

- (25) Avinash Kumar Agarwal, **Akhilendra Pratap Singh**, Anuj Agarwal, Joonho Jeon, Chang Sik Lee, Sungwook Park, “Spatial combustion analysis of biodiesel fueled engine using combustion chamber endoscopy and modeling”, *Renewable Energy*; 98: 292-303, 2016. (IF= 4.068) DOI: 10.1016/j.renene.2016.02.005
- (26) Avinash Kumar Agarwal, Anuj Agarwal, **Akhilendra Pratap Singh**, “Time Resolved in-situ Biodiesel Combustion Visualization using Engine Endoscopy”, *Measurement*; 69 (1): 236-249, 2015. (IF= 1.637) DOI: 10.1016/j.measurement.2015.03.008
- (27) **Akhilendra Pratap Singh**, Aditya Gupta, Avinash Kumar Agarwal, "Tomographic Particle Image Velocimetry for Flow Analysis in a Single Cylinder Optical Engine", *SAE International Journal of Materials and Manufacturing*, 8 (2), 14, 2015. (IF= NA) DOI: 10.4271/2015-01-0599
- (28) Avinash Kumar Agarwal, Jithin Lukose, **Akhilendra Pratap Singh**, Tarun Gupta, “Engine Exhaust Particulate Characterization of Gasoline Homogeneous Charge Compression Ignition Engine”, *Aerosol and Air Quality Research*, 15(2): 504-516, 2015. (IF= 2.393) DOI: 10.4209/aaqr.2014.01.0021
- (29) Gajendra Singh, **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Experimental Investigation of Combustion, Performance and Emission Characterization of Biodiesel Fuelled HCCI Engine Using External Mixture Formation Technique”, *Sustainable Energy Technologies and Assessment*, 6: 116-128, 2014. (IF= NA) DOI: 10.1016/j.seta.2014.01.002
- (30) Avinash Kumar Agarwal, Dhananjay Kumar Srivastava, Atul Dhar, Rakesh Kumar Maurya, Pravesh Chandra Shukla, **Akhilendra Pratap Singh**, “Effect of Fuel Injection Timing and Pressure on Combustion, Emissions and Performance Characteristics of a Single Cylinder Diesel Engine”, *Fuel*, 111: 374-383, 2013. (IF= 4.140) DOI: 10.1016/j.fuel.2013.03.016
- (31) Avinash Kumar Agarwal, Atul Dhar, Dhananjay Kumar Srivastava, Rakesh Kumar Maurya, **Akhilendra Pratap Singh**, “Effect of Fuel Injection Pressure on Diesel Particulate Size and Number Distribution in a CRDI Single Cylinder Research Engine”, *Fuel*, 107: 84-89, 2013. (IF= 4.140) DOI: 10.1016/j.fuel.2013.01.077
- (32) Avinash Kumar Agarwal, Jithin Lukose, **Akhilendra Pratap Singh**, Tarun Gupta, “Characterization of Exhaust Particulates from Diesel Fuelled Homogenous Charge Compression Ignition Combustion Engine”, *Journal of Aerosol Science*, 58: 71-85, 2013. (IF= 2.627) DOI: 10.1016/j.jaerosci.2012.12.005
- (33) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Combustion Characteristics of Diesel HCCI Engine: An Experimental Investigation Using External Mixture Formation Technique”, *Applied Energy*, 99: 116-125, 2012. (IF= 6.222) DOI: 10.1016/j.apenergy.2012.03.060

### Manuscript Under Review

- (1) Akhilendra P. Singh, Vikram Kumar, Nikhil Sharma, Dev Praksh Satsangi, Avinash K. Agarwal. Alcohol Fuelled Reactivity Controlled Compression Ignition Combustion for Partial Replacement of Mineral Diesel in Internal Combustion Engines. Submitted in *Fuel* (JFUE-D-19-04366R1).

- (2) Avinash K. Agarwal, Akhilendra P. Singh, S.S. Thipse, Gautam Goswami. Case-Study of Energy and Environmental Issues in Indian Road Transportation Sector. Submitted in *INAE Letters (INAE-D-19-00032)*.
- (3) Avinash K. Agarwal, Akhilendra P. Singh, S.S. Thipse, Mukti Prasad. Status of Safety and Security Issues in Indian Road Transport Sector and Roadmap. Submitted in *Sadhana (SADH-D-19-00006)*.
- (4) Avinash K. Agarwal, Nirendra N. Mustafi, Akhilendra P. Singh. Particulate Formation Mechanisms, Composition, and Control Measures in Internal Combustion Engines for Environmental and Health Protection. Submitted in *Progress in Energy and Combustion Science (PECS\_2019\_212)*.
- (5) S. Nizam, I. S. Sen, V. Vinoj, V. Galy, D. Selby, M. F. Azam, S. K. Pandey, R. A. Creaser, Avinash K. Agarwal, Akhilendra P. Singh, M. Bizimis. Fossil Fuel Sourced Carbon Free Western Himalayan Glaciers. Submitted in *Environmental Science and Technology (es-2019-06746j)*.
- (6) Akhilendra P. Singh, Dhananjay Kumar, Avinash K. Agarwal. Particulate Characterization of Laser Ignited Hydrogen Enriched Compressed Natural Gas Engine. Submitted in *Int. J. Hydrogen Energy*.
- (7) Avinash K. Agarwal, Akhilendra P. Singh, Tarun Gupta, Rashmi A. Agarwal, Nikhil Sharma, Swaroop Kumar Pandey, Bushra Ateeq. Toxicity of Exhaust Particulates and Gaseous Emissions from Gasohol (Ethanol Blended Gasoline) Fueled Spark Ignition Engine. Submitted in *Energy and Environmental Sciences*.
- (8) Akhilendra P. Singh, Nikhil Sharma, Vikram Kumar, Avinash K. Agarwal. Experimental Investigations of Mineral Diesel/ Methanol-Fueled Reactivity Controlled Compression Ignition Engine Operated at Variable Engine Loads and Premixed Ratios. Submitted in *Renewable Energy*.
- (9) Ankur Kalwar, Akhilendra P. Singh, Avinash K. Agarwal. Combustion and Emission Characterisation of Primary Alcohols in Dual-Fuel Injection Mode in a Direct Injection Spark Ignition Engine. Submitted to *Fuel*.

### **Conference Proceedings (National/ International)**

- (1) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “CI/PCCI Combustion Mode Switching of Diesohol Fuelled Production Engine”, *SAE World Congress*, 2017-01-0738, April 2017, Detroit, USA. DOI:10.4271/2017-01-0738.
- (2) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Mode Switching Strategy Development for Diesohol Fuelled Engine”, *SEEC- 2017-018*, International Conference on Sustainable Energy and Environmental Challenges (SEEC-2017), Mohali, India.
- (3) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Effect of Engine Speed on In-Cylinder Air Flow Characteristics”, *SEEC- 2017-019*, International Conference on Sustainable Energy and Environmental Challenges (SEEC-2017), Mohali, India.
- (4) Suresh Gadekar, **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “Tomographic PIV Evaluation of In-Cylinder Flow Evolution and Effect of Engine Speed”, *SAE World Congress*, 2016-01-0638, April 2016, Detroit, USA. DOI:10.4271/2016-01-0638.

- (5) **Akhilendra Pratap Singh**, Suresh Gadekar, Avinash Kumar Agarwal, "In-Cylinder Air-Flow Characteristics Using Tomographic PIV at Different Engine Speeds, Intake Air Temperatures and Intake Valve Deactivation in a Single Cylinder Optical Research Engine", SAE Technical Paper 2016-28-0001, **SAE** INDIA International Mobility Conference-2016, February 2016, New Delhi, India. DOI:10.4271/2016-28-0001.
- (6) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, "Effect of Intake Charge Temperature and EGR on Biodiesel Fuelled HCCI Engine", **SAE** Technical Paper 2016-28-0257, SAE INDIA International Mobility Conference-2016, February 2016, New Delhi, India. DOI:10.4271/2016-28-0257.
- (7) **Akhilendra Pratap Singh**, Aditya Gupta, Avinash Kumar Agarwal, "Tomographic Particle Image Velocimetry for Flow Analysis in a Single Cylinder Optical Engine", **SAE** World Congress, 2015-01-0599, April 2015, Detroit, USA. DOI:10.4271/2015-01-0599.
- (8) **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, "An Experimental Investigation of Combustion, Emissions and Performance of a Diesel Fuelled HCCI Engine", **SAE** Technical Paper 2012-28-0005, SAE INDIA International Mobility Conference-2012, January 2012, New Delhi, India. DOI:10.4271/2012-28-0005.
- (9) Atul Dhar, Dhananjay Srivastava, **Akhilendra Pratap Singh**, Pravesh Chandra Shukla, Rakesh Kumar Maurya, Avinash Kumar Agarwal, "Effect of Injection Pressure and Injection Timing on Combustion, Performance and Emission Characteristics of Single Cylinder Research Engine", SAE Student section paper 126S-2012, **SAE** INDIA International Mobility Conference-2012, January 2012, New Delhi, India.
- (10) Rakesh Kumar Maurya, **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, "Statistical Analysis of Cycle-to-Cycle Variations of Methanol Fuelled HCCI Combustion Engine" SAE Student section paper 128S-2012, **SAE** INDIA International Mobility Conference-2012, January 2012, New Delhi, India.

### **Posters Presented in Conference/ Seminar/ Workshop**

- (1) Poster Presentation on "Mineral Diesel and Biodiesel Spray Characteristics at Different Fuel Injection Pressures and Ambient Pressures" in International Conference on "*Sustainable Energy and Environmental Challenges*" at **Center of Innovative and Applied Bioprocessing**, Mohali, Punjab; 2017.
- (2) Poster Presentation on "Effect of Fuel Injection Strategy and EGR on Diesel and Biodiesel Fueled PCCI Engine" in International Conference on "*Sustainable Energy and Environmental Challenges*" at **Center of Innovative and Applied Bioprocessing**, Mohali, Punjab; 2017.
- (3) Poster Presentation on "In-Cylinder Air-Flow Characteristics using Tomographic PIV at different Engine Speeds, Intake Air temperatures and Intake Valve Deactivation in a Single Cylinder Optical Research Engine" in International Workshop on "*Sustainable Energy, Environment & Safety with Railway Centric Theme*", at **RDSO**, Lucknow, India; 2015.

- (4) Poster Presentation on “Flow Characterization in a Single Cylinder Optical Engine using Tomographic PIV” in International Workshop on "*Sustainable Energy, Power and Propulsion*", at **Jadavpur University**, Kolkata, India; 2015.
- (5) Poster Presentation on “HCCI Engine using Diesel like Fuels” in International Workshop on “*Advances in Combustion and Transportation*”, at **IIT Kanpur**, Kanpur, India; 2010.

### **Book Published**

- (1) “**Simulations and Optical Diagnostics for Internal Combustion Engines**”, (Eds.), **Akhilendra Pratap Singh**, Pravesh Chandra Shukla, Joonsik Hwang, Avinash Kumar Agarwal, Published by Springer Singapore (2019). (DOI: 10.1007/978-981-15-0335-1).
- (2) “**Advanced Combustion Techniques and Engine Technologies for the Automotive Sector**”, (Eds.), **Akhilendra Pratap Singh**, Nikhil Sharma, Ramesh Agarwal, Avinash Kumar Agarwal, Published by Springer Singapore (2019). (DOI: 10.1007/978-981-15-0368-9).
- (3) “**Alternative Fuels and Their Utilization Strategies in Internal Combustion Engines**”, (Eds.), **Akhilendra Pratap Singh**, Yogesh Chandra Sharma, Nirendra Nath Mustafi, Avinash Kumar Agarwal, Published by Springer Singapore (2019). (DOI: 10.1007/978-981-15-0418-1).
- (4) “**Methanol and the Alternative Fuel Economy**”, 231 pages, (Eds.), Avinash Kumar Agarwal, Anirudh Gautam, Nikhil Sharma, **Akhilendra Pratap Singh**, Published by Springer Singapore (2018). (ISBN # 978-981-1332-86-9).
- (5) “**Advanced Engine Diagnostics**”, 253 pages, (Eds.), Avinash Kumar Agarwal, Nikhil Sharma, Jai Gopal Gupta, **Akhilendra Pratap Singh**, Published by Springer Singapore (2018). (ISBN # 978-981-13-3274-6).
- (6) “**Prospects of Alternative Transportation Fuels**”, 405 pages, (Eds.) **Akhilendra Pratap Singh**, Rashmi Avinash Agarwal, Avinash Kumar Agarwal, Atul Dhar, Mritunjay Kumar Shukla, Published by Springer Singapore (2018). (ISBN # 978-981-10-7518-6).
- (7) “**Air Pollution and Control**”, 260 pages, (Eds.) Nikhil Sharma, Avinash Kumar Agarwal, Peter Eastwood, Tarun Gupta, **Akhilendra Pratap Singh**, Published by Springer Singapore (2018). (ISBN # 978-981-10-7185-0).
- (8) “**Combustion for Power Generation and Transportation: Technology, Challenges and Prospects**”, 451 pages, (Eds.) Avinash Kumar Agarwal, Santanu De, Ashok Pandey, **Akhilendra Pratap Singh**, Published by Springer Singapore (2017). (ISBN # 978-981-10-3784-9).
- (9) “**Sustainable Energy and Environmental Challenges (SEEC-2017)**” 641 pages, (Eds.) **Akhilendra Pratap Singh**, Atul Dhar, Ashok Pandey, Avinash Kumar Agarwal, Dhananjay Kumar Srivastava, R. S. Sangwan and Santanu De, Conference proceeding of International Conference, Published by ISEES, February 2017.
- (10) “**Technology Vision 2015: Technology Roadmap Transportation**”, 237 pages, (Eds.) Avinash Kumar Agarwal, S S Thipse, **Akhilendra Pratap Singh**, Gautam Goswami, Mukti Prasad, Published by TIFAC, New Delhi, December 2016.



## **Book Chapters**

- (1) **Akhilendra Pratap Singh**, Pravesh Chandra Shukla, Joonsik Hwang, Avinash K Agarwal, "Introduction to Combustion Simulations and Optical Diagnostic Techniques for Internal Combustion Engines", Published in **Simulations and Optical Diagnostics for Internal Combustion Engines: Current Status and Way Forward**, Chapter 1, pp. 3-6, (Editors: Akhilendra Pratap Singh, Pravesh Chandra Shukla, Joonsik Hwang, Avinash K Agarwal, Published by Springer Singapore (2019).
- (2) Hardikk Valera, Dhananjay Kumar, Akhilendra Pratap Singh, Avinash Kumar Agarwal, "Engine Modelling Aspects for Adaption of Alternative Fuel", Published in **Simulations and Optical Diagnostics for Internal Combustion Engines: Current Status and Way Forward**, Chapter 2, (Editors: Akhilendra Pratap Singh, Pravesh Chandra Shukla, Joonsik Hwang, Avinash K Agarwal, Published by Springer Singapore (2019).
- (3) Akhilendra Pratap Singh, Nikhil Sharma, Ramesh Agarwal, Avinash Kumar Agarwal, "Introduction to Advanced Combustion Techniques and Engine Technologies for Automotive Sector", Published in **Advanced Combustion Techniques and Engine Technologies for Automotive Sector**, Chapter 1, (Editors: Akhilendra Pratap Singh, Nikhil Sharma, Ramesh Agarwal, Avinash Kumar Agarwal, Published by Springer Singapore (2019).
- (4) Tushar Agarwal, Akhilendra Pratap Singh, Avinash Kumar Agarwal, "Development of Methanol Fuelled Two-Wheeler for Sustainable Mobility", Published in **Advanced Combustion Techniques and Engine Technologies for Automotive Sector**, Chapter 2, (Editors: Akhilendra Pratap Singh, Nikhil Sharma, Ramesh Agarwal, Avinash Kumar Agarwal, Published by Springer Singapore (2019).
- (5) Hardikk Valera, Akhilendra Pratap Singh, Avinash Kumar Agarwal, "Prospects of Methanol Fuelled Carburetted Two Wheelers in Developing Countries", Published in **Advanced Combustion Techniques and Engine Technologies for Automotive Sector**, Chapter 4, (Editors: Akhilendra Pratap Singh, Nikhil Sharma, Ramesh Agarwal, Avinash Kumar Agarwal, Published by Springer Singapore (2019).
- (6) Akhilendra Pratap Singh, Nirendra Nath Mustafi, Yogesh Chandra Sharma, Avinash Kumar Agarwal, "Introduction of Alternative Fuels and their Utilization Strategies", Published in **Alternative Fuels and Their Utilization Strategies in Internal Combustion Engines**, Chapter 1, (Editors: Akhilendra Pratap Singh, Nirendra Nath Mustafi, Yogesh Chandra Sharma, Avinash Kumar Agarwal, Published by Springer Singapore (2019).
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### **Invited Talks/ Lectures**

- (1) Invited Talk on “**Advanced Combustion Techniques for Internal Combustion Engines: Strategies, Achievements and Future Directions**” in 3<sup>rd</sup> International Conference on “Sustainable Energy and Environmental Challenges” at Indian Institute of Technology Roorkee, Uttarakhand. (December 2018)
- (2) Lecture on “**Low Temperature Combustion: Advanced Combustion for IC Engines**” in Short Course on “IC Engines, Combustion Theory and Industrial Applications” at Indian Institute of Technology Kanpur, India. (March 2017)
- (3) Invited Talk on “**Advanced Combustion Technologies for Internal Combustion Engines**” in 1<sup>st</sup> International Conference on “Sustainable Energy and Environmental Challenges” at Center of Innovative and Applied Bioprocessing, Mohali, Punjab. (February 2017)
- (4) Lecture on “**Homogeneous Charge Compression Ignition (HCCI) Engines: Advantages and Challenges**” in Short Term Course on “Advanced Combustion, Emissions and Modeling Aspects” at Indian Institute of Technology Kanpur, India. (May 2014)
- (5) Invited Talk on “**Development of Diesel Fueled HCCI Engine**” at Tshwane University of Technology, Pretoria, South Africa. (March 2012)

### **Patents**

- (1) Patent Filed: **Akhilendra Pratap Singh**, Avinash Kumar Agarwal, “External Mixing Device for HCCI Combustion as Diesel Vaporizer”, Invention ID **IN-824158**.

### **Membership of Professional Societies**

- (1) Secretary, International Society of Energy, Environment and Sustainability (ISEES)
- (2) Member, Society of Automotive Engineers (SAE)
- (3) Member, American Society of Mechanical Engineers (ASME)

### **Additional Information**

- (1) Reviewer of Energy, Applied Energy and Ain Shams Engineering Journal (Elsevier).
- (2) Reviewer of Journal of Energy Resource and Technology (ASME).
- (3) Reviewer of SAE International.

## **Personal Information**

Father's Name : Mr. Hanumat Singh

Date of Birth : July 6, 1987

Marital Status : Married

Nationality : Indian

## **Declaration**

I do hereby declare that the above particulars furnished by me are true to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "Singh.", is written above the printed name.

**Date: February 2020**

**Dr. Akhilendra Pratap Singh**

## **References**

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