Annexure- II

Publications:

Paper Published in International Journal	21
Papers Presented in National Conferences	05
Papers Presented in International Conferences	03
Book Chapter	02

INTERNATIONAL JOURNALS:

1. Swapnil Bhurat, Shyam Pandey, Venkateshwarlu Chintala, Manas Jaiswal, Caneon Kurein, Effect of novel fuel vaporiser technology on engine characteristics of partially premixed charge compression ignition (PCCI) engine with toroidal combustion chamber, Fuel, Volume 315, 2022, 123197, ISSN 0016-2361, https://doi.org/10.1016/j.fuel.2022.123197.
2. Pandey, S. A critical review: Application of methanol as a fuel for internal combustion engines and effects of blending methanol with diesel/biodiesel/ethanol on performance, emission, and combustion characteristics of engines. Heat Transfer. 2022; 1- 19. doi:10.1002/htj.22453
3. R. Kunwer, S. Pandey, and G. Pandey, "Characteristic analysis of thermal energy storage system using synthetic oil as a heat transfer fluid: techno-economic modeling and LAB scale demonstration," *Energy Sources, Part A Recover. Util. Environ. Eff.*, vol. 0, no. 0, pp. 1–17, 2021, doi: 10.1080/15567036.2021.1987588.
4. S. Bhurat, S. Pandey, V. Chintala, M. Jaiswal, and A. Kumar, "Investigation of partially pre-mixed charge compression ignition engine characteristics implemented with toroidal combustion chamber and exhaust gas recirculation," *Energy Sources, Part A Recover. Util. Environ. Eff.*, vol. 0, no. 0, pp. 1–19, 2021, doi: 10.1080/15567036.2021.1909675
5. P Shukla, P K Sharma, S Pandey, V. Chintala, Unsegregated Municipal Solid Waste in India - Current Scenario, Challenges and Way Forward, Nature Environment and Pollution Technology An International Quarterly Scientific Journal, vol. 2, 2021. https://doi.org/10.46488/NEPT.2021.v20i02.048
6. Pandey, S., S.S. Bhurat, and R. Kunwer, Investigation of fumigation of ethanol and exhaust gas recirculation on combustion and emission characteristics of partially premixed charge compression-ignition engine. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 2021: p. 1-15.
7. SS Bhurat, S Pandey, V Chintala Combined effect of external mixture formation and cooled exhaust gas recirculation on engine performance and emissions characteristics of partially pre-mixed charged compression ignition engine, Environmental Progress & Sustainable Energy, 2020.
8. Varun Vijay Savadi, D.P. Singh, S.K. Joshi, I. Majeed, Md. Shuaib, V.R. Sharma, A. Yadav, R. Kumar, P.P. Singh, Unnati, M.K. Sharma, S. Pandey, B.P. Singh, R. Prasad, Activity induced in different rare earth materials using heavy ion oxygen beam; thin layer activation analysis, Nuclear Instruments and

Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Volume 479, 2020, Pages 102-109. https://doi.org/10.1016/j.nimb.2020.06.016

9. S.K. Kurre, S. Pandey, N. Khatry, S.S. Bhurat, S.K. Kumawata , S. Saxenaa, S. Kumara, Study of Lubricating Oil Degradation of CI Engine Fueled with Diesel-Ethanol Blend, Tribology in Industry; Vol. 43, Iss. 2, (2021): 222-231. DOI:10.24874/ti.913.06.20.11
10. Ram Kunwer, Shyam Pandey, Swapnil Sureshchandra Bhurat, Comparison of selected shell and tube heat exchangers with segmental and helical baffles, Thermal Science and Engineering Progress, Volume 20, 2020, 100712. https://doi.org/10.1016/j.tsep.2020.100712
11. Sanka, RV Siva Prasanna, K. Balaji, Yves Leterrier, Shyam Pandey, Monika Srivastava, Anurag Srivastava, Wolfgang H. Binder, Sravendra Rana, and Véronique Michaud., "Nitrogen-doped graphene stabilized copper nanoparticles for Huisgen [3+2] cycloaddition 'click' chemistry," Chem. Commun., vol. 55, no. 44, pp. 6249–6252, 2019. https://doi.org/10.1039/C9CC02057H
12. R. V. S. P. Sanka, B. Krishnakumar, Y. Leterrier, and S. Pandey, "Soft Self-Healing Nanocomposites," Frontiers in Materials., vol. 6, no. June, pp. 1–20, 2019. https://doi.org/10.3389/fmats.2019.00137
13. Sehgal, A K Saxena, M Pandey, S Malhotra, R. K. Improving Performance of Compressed Natural Gas Fueled Passenger Car Engine by Addition of Hydrogen. NISCAIR-CSIR, India, 0975-1084 (Online); 0022-4456 (Print), p 61-65 (2017)
14. S. S. Bhurat, S. Pandey, V. Chintala, and P. S. Ranjit, "Technical barriers and their solutions for deployment of HCCI engine technologies – a review," *Int. J. Ambient Energy*, pp. 1–14, Apr. 2019, doi: 10.1080/01430750.2019.1611644.
15. Shyam Pandey, Parag Diwan, Pradeepta Sahoo, S S Thipse. A review on combustion control strategies of diesel HCCI engine. Biofuels, ISSN 1759-7269 (Print), vol 9, issue 1 pp 61-74,(2016). https://doi.org/10.1080/17597269.2016.1257315
16. Shyam Pandey, Parag Diwan, Pradeepta Sahoo, S S Thipse. The effect of EGR and Premixed Fuel Ratio (PFR) on Combustion and Emissions in a partial HCCI -DI engine fueled with Bio-ethanol and diesel. Biofuels, ISSN 1759-7269 (Print), 1759-7277 (Online), Volume 6, Issue 5-6, Pages 357-367, (2015). https://doi.org/10.1080/17597269.2015.1110776
17. S. K. Kurre, S. Pandey, R. Garg, and M. Saxena, "Experimental study of the performance and emission of diesel engine fueled with blends of diesel-ethanol as an alternative fuel," *Biofuels*, vol. 6, no. 3–4, 2015, doi: 10.1080/17597269.2015.1078561.
18. S. K. Kurre, S. Pandey, R. Garg, and M. Saxena, "Condition monitoring of a diesel engine fueled with a blend of diesel, biodiesel, and butanol using engine oil analysis," *Biofuels*, vol. 6, no. 3–4, 2015, doi: 10.1080/17597269.2015.1081763.
19. S. K. Kurre, R. Garg, and S. Pandey, "A review of biofuel generated contamination, engine oil degradation and engine wear," *Biofuels*, vol. 8, no. 2, 2017, doi: 10.1080/17597269.2016.1224291.
20. Santosh Kumar Kurre, Shyam Pandey, Mukesh Saxena. Effect of Compression Ratio on Diesel Engine Performance and Emission with Diesel- Ethanol Blends. International Journal of Scientific & Engineering Research, ISSN 2229-5518, Volume 4, Issue 10, (2013).
21. Shyam Pandey, Amit Sharma, P. K. Sahoo. Experimental investigation on the performance and emission characteristics of a diesel engine fueled with ethanol, diesel and Jatropha based bio-diesel blends, International Journal of Advances in Engineering & Technology, ISSN: 2231-1963, Vol. 4, Issue 2, pp. 341-353, Sept 2012.

BOOK CHAPTER

1. S.R.V. Siva Prasanna, K. Balaji, Shyam Pandey, Sravendra Rana, Chapter 4 - Metal Oxide Based Nanomaterials and Their Polymer Nanocomposites, Editor(s): Niranjan Karak, Nanomaterials and Polymer Nanocomposites, Elsevier, 2019, Pages 123-144, ISBN 9780128146156, https://doi.org/10.1016/B978-0-12-814615-6.00004-7.
2. Shyam Pandey, Amit Sharma. Combustion and Formation of Emissions in Compression Ignition Engines and Emission Reduction Techniques. Petrodiesel Fuels,https://www.taylorfrancis.com/chapters/edit/10.1201/9780367456252-10/

NATIONAL CONFERENCES:

1. Experimental Investigation on the performance and emissions of a diesel engine fueled with butanol-bio-diesel-diesel blends. - 7th Uttarakhand State Science and Technology Congress-2012
2. Remarkable emission reductions in a small diesel engines using premixed ethanol and EGR. 9th Uttarakhand State Science and Technology Congress-2014-15
3. Effect of butanol on performance and emission analysis of a compression ignition engine fuelled with Diesel -Butanol blends, Santosh Kumar Kurre, Dr. Shyam Pandey, Dr. Rajnish Garg and Dr. Mukesh Saxena, 24th National Conference on I.C. Engines and Combustion, UPES and CIIS, 30th Oct-1stNov 2015.
4. Combustion and Emission Characteristics of Partial HCCI engine fueled with ethanol and diesel, Shyam Pandey, Parag Diwan, Pradeepta Kumar Sahoo, Sukrut Shrikant Thipse, 24th National Conference on I.C. Engines and Combustion, UPES and CIIS, 30th Oct-1st Nov 2015.
5. Experimental investigation on the Technical Feasibility of Ethanol Diesel blends for use in Direct Injection (DI) Diesel Engine, Pradeepta Kumar Sahoo, Amit Kumar Sharma, Shyam Pandey, 24th National Conference on I.C. Engines and Combustion, UPES and CIIS, 30th Oct-1st Nov 2015.

INTERNATIONAL CONFERENCES

1. Shyam Pandey, Swapnil Bhurat, Venkateswarlu Chintala, Combustion and emissions behaviour assessment of a partially premixed charge compression ignition (PCCI) engine with diesel and fumigated ethanol, Energy Procedia,Volume 160, 2019, Pages 590-596, ISSN 1876-6102, https://doi.org/10.1016/j.egypro.2019.02.210.
2. Swapnil Sureshchandra Bhurat, Shyam Pandey, Venkateswarlu Chintala, P.S. Ranjit, Experimental study on performance and emissions characteristics of single cylinder diesel engine with ethanol and biodiesel blended fuels with diesel, Materials Today: Proceedings, Volume 17, Part 1, 2019, Pages 220-226, ISSN 2214-7853, https://doi.org/10.1016/j.matpr.2019.06.422.
3. Influence of compression ratio and exhaust gas recirculation on light duty diesel engine, Lecture series notes, Springer,2020

SPONSORED R-&-D PROJECT

1. Endurance analysis and tribological studies of diesel engines fueled with Bio-butanol, diesel and their blends as alternate fuels.
    a. Funding Agency: Uttarakhand State Council for Science &Technology(govt. of uttarakhand)dehradun- 248001
    b. Project Duration : 03 Year
    c. Total approved cost of the project (in Rs.): 08 Lakhs

INTERNALLY FUNDED PROJECTS (SEED)

I. Undergoing

Funding Agency/Institution	Amount (Rs.)	Period	Title	Investigators
UPES DDN	1,70,000	2019-2021	Segregation of Mixed Municipal Solid Waste Through Wet Density Media Separation process.	Mr. Prashant Shukla Dr. Shyam Pandey, Dr. Pankaj Sharma, Dr. Venkateshwarlu Chintala
UPES DDN	2,52,000	2020-21	Performance Investigation of lab-scale packed bed thermal energy storage system	Mr. Ram Kunwer Dr. Shyam Pandey
UPES DDN	110000	2021-22	Analysis of Performance, combustion and emissions characteristics of 3-cylinder, 4 stroke diesel engine fueled by plastic oil and diesel blends,	Dr. Shyam Pandey Mr. Shashank Pal Dr. Shailey Singhal

II. Completed

Funding Agency/Institution	Amount (Rs.)	Period	Title	Investigators
UPES DDN	2,10,000 (sanctioned) 45,000 (spent)	2017-2020	Development of pre-mixed charge compression ignition engine operating on variable compression ratio with vaporized diesel.	Dr. Shyam Pandey, Mr. Swapnil Sureshchandra Bhurat, Dr. Venkateshwarlu C.

Patent filed:

1. Fuel injection system for compression ignition engines of stationary applications, particularly for diesel engine (2792/DEL/2013).
2. Arrangement for Length Adjustable Dual Type Free Piston Engine (201811008593). Inventors: Dr. Shyam Pandey, Himanshu Bindal, Prakhar Rastogi, Navjeet Singroha, Hemraj Chaudhary, Pratik Raj, Saurabh Matta (date of application - 2018-03-08; date of examination 2018-03-12)
3. A Vehicle Transmission System (201911009132). Inventors: Dr. Shyam Pandey, Mr. Narayan Khatri, Dr. Girish Chandran V, Mr. Mohit Khatri, Mr. Chandan Kumar ,Mr. Jayesh Vyas, Mr. Chirag , Date of filing application: 08-03-2019; date of publication : 29-03-2019
4. A Fuel Vaporizer Unit (201911044038).
5. A Mixed Municipal Waste Segregation System (202011025038), Waste Segregator (331395-001),
6. A Face Cover for Travelling in a Public Vehicle (202011029188).
7. Shell and tube type EGR cooler for small off-road diesel engine. (Application no.- 262875)

Award/Scholarship/Recognition:

1. Nominated as a **Margadarshak** for AICTE approved institute
   Note: In one of the application invited by AICTE (2020), I was selected as a Margdarshak to upcoming technical institutes. The programme run by the Ministry of HRD, Government of India aims to improve the quality and standards of engineering education in India with a particular emphasis on industry-readiness and employability. The ministry had evaluated 942 faculty members of top engineering schools, including the Indian Institutes of Technology and the National Institutes of Technology, before shortlisting 296 professors for mentoring lesser-known institutions to help improve the standard of their curriculum. We are confident that Dr. Pandey's expert guidance will prove to be of immense value.
   - ❖ Mentoring **Shivalik College of Engineering** Dehradun as a Margadarshak

2. Received Best Faculty Award 2019
3. Qualified Graduate Aptitude in Engineering exam (AIR 730), MHRD Scholarship (July 2001 to April 2003) to pursue M. Tech from IIT Roorkee.
4. Under my mentorship student teams won 1st Prize in the event Gokart (2014) Bhopal and RISE project.
5. Received "appreciation letter" for the road safety drive (2012).

Ph. D. Thesis Guided

i. Co-supervised

a. Mr. Sanka Rama Venkata Siva Prasanna- Development of Graphene Promoted Click Triggered Self-Healing Nanocomposites- 2020
b. Santosh Kurre - Tribological Study of Direct Injection Diesel Engine Fuelled with Diesel Butanol Blends, 2019

ii. Supervised

a. Swapnil Sureshchandra Bhurat- Development of Pre-Mixed Charge Compression Ignition Engine (PCCI) Operating On Variable Compression Ratio With Vaporized Diesel
b. Ramesh V K - Energy and Exergy analysis of Glasshouse enclosed Parabolic Trough Collectors used for solar thermal Enhanced Oil Recovery (EOR)
c. Ram Kunwer -Thermal energy storage system for concentrated solar power application

iii. Undergoing as a supervisor

a. Shashank Pal - Catalytic thermal decomposition of the municipal mixed plastic waste (MMPW) into fuel for modified IC engine and residue char as anode in Li-ion battery

iv. Undergoing as a Co-supervisor

c. Prashant Shukla - Design & Development of Mechanized Segregation System for MSW (Municipal Solid Waste.
d. Varun Savadi - Investigation of surface wear studies in strategically important rare earth materials and alloys by employing TLA

Teaching & Learning mentoring assignments: PG Cap

- Mentoring participants on curriculum development as per the recent trends in Industry and National/International requirements.
- Guiding participants to work on pedagogical development to meet the changing learner's behaviors.
- Helping teachers to implement OBE at UPES, providing support to prepare POs-PSOs and COs attainment methodology and necessary computing tools.

Annexure –III

National Conference organized

Organized one National Conference **"24th National Conference on I.C. Engines and Combustion 2015"** as a Co-convenor.

Faculty Development Program Coordinated/Attended

1. Organized a two weeks main workshop on "Fluid Mechanics" during May 20th -30th, 2014 at University of Petroleum and Energy Studies, Dehradun (U.K.).
2. Organized a two week ISTE STTP on Control Systems at University of Petroleum and Energy studies with the help of A-view transmissions IIT KGP December 2, 2014 to December 12, 2014
3. Organized a two weeks main workshop on "Introduction to Design of Algorithms" at University of Petroleum and Energy studies with the help of A-view transmissions from IIT KGP, 25-30th May 2015.
4. Organized a two weeks ISTE Short Term Training Programme (STTP) "on Pedagogy For Effective Use of ICT In Engineering Education, 5-21st Jan 2015
5. Organized a two weeks main workshop on " Environmental Studies" with the help of A-view transmissions from IIT Bombay, 2-12th June 2015
6. Organized a two weeks ISTE Short Term Training Programme (STTP) "on Engineering Physics, 8-18th Dec 2015.
7. Organized two Week ISTE STTP on Introduction to Structural Engineering at University of Petroleum and Energy studies with the help of A-view transmissions IIT KGP, 4th January, 2016 to Saturday 9th January, 2016.
8. Organized a two Week ISTE STTP on Electric Power System at University of Petroleum and Energy studies with the help of A-view transmissions IIT KGP, 10th July 2017 to15th July, 2017
9. Attended "Coordinators workshops on fluid mechanics" at IIT Kharagpur during March 11-15, 2014.
10. Attended short term Training Programme on " Diesel Particulate and NOx control" at IIT Kanpur (QIP)
11. Attended workshop on "Harnessing Intellectual Property & its management for growth and prosperity" at Graphic Era University, Dehradun on 26th April 2014.
12. Attended, Half Day Coordinators Workshop on Pedagogy for Effective use of ICT in Engineering Education, IIT Bombay, 25th Nov 2014