DHRUV RAJ KARANA

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Previous Work Experience: Assistant Professor, MKSSS's Cummins College of Engg., Pune

OBJECTIVE

- To be a part of an organization where I can utilize my technical skills for notable contribution to the institution and individual growth.
- To have a growth oriented and challenging career, where I can enhance my experience through continuous learning and teamwork.

EDUCATION

Degree	*University / School*	*Grade*	*Year*
Ph.D. (Thermal & Fluid Engg.)	Indian Institute of Technology – Banaras Hindu University, Varanasi	9.3 CGPA (Coursework)	2021
M. Tech (Thermal Engg.)	National Institute of Technology, Durgapur, West Bengal	8.1 CGPA	2017
B Tech. (Mechanical Engg.)	Delhi Technological University (formerly Delhi College of Engg.)	58.39%	2014
Class XII	Don Bosco School, Delhi (CBSE)	81.8%	2010
Class X	Don Bosco School, Delhi (CBSE)	91.1%	2008

TRAININGS

- Attended seminar on "*Gas Turbines*" organized by GE & ASME at Jadavpur University.
- Certified in simulation on "*ANSYS Workbench 14.5"* by CTTC - Kolkata (July 2016).
- Certificate course on "*Overview of Solidworks*" at CTTC- Kolkata, India (July 2016).
- Short term course on "*Machine Condition Monitoring*" at NIT- Durgapur, (Sept 2016).
- Short term course on "*Advances in Microsystem Technologies*" at NIT- Durgapur, (Feb 2017).
- Short term course on "Efficient *Energy Conversion in Harmony with Environment*" at IIT-BHU.
- Internship at *RSK (Railway Spring Karkhana)* – Gwalior, Madhya Pradesh, India.
- Summer training at the *IPGCL/PPCL*, a coal and combined cycle-based power plants in Delhi, India.

INTERESTS

I.C Engines | Engineering Graphics | Thermodynamics

EXPERIENCE

Research Scholar Jul'17 – Dec'21
Indian Institute of Technology – BHU Varanasi

Thesis title: "Performance improvement of TEG based WHR system integrated with engine exhaust"

- Performed assessment of different waste heat recovery (WHR) techniques, their cost effectiveness and compatibility with the I.C engines.
- Acquired experience in modelling and experimentation of heat transfer and fluid problems, including computer skills like Engineering Equation Solver, MS Excel, Origin, DAQ systems.

- Designed, implemented and optimised the heat exchanger parameters for WHR of engine.

ACADEMIC PROJECTS

Performance Analysis of Analysis of Diesel Engine Using Crude Tyre Pyrolysis Oil (TPO) and Refined TPO Blends Jul'16 – Jul'17

- TPO was used as an alternate fuel for the CI engine to fulfill the dual objective of waste management andsustainable energy source.
- Designed and fabricated TPO refinement set up (lab scale).
- Analyzed and compared the performance of engine with TPO, diesel and its blends.

Analysis of Parameters of Friction Stir Welding (FSW) for the Material - Al 6063 Jan'13 – Jul'14

- Gained experience in fabrication and testing of heat exchangers.
- Learned design of experiments to reduce the number of trials in experiments.
- Optimized the operating parameters of friction stir welding to obtain best possible strength of the welded joint.

POSITIONS OF RESPONSIBILITY

- Reviewer of the journals, Elsevier Springer & Taylor & Francis.
- Served the responsibility of Training & Placement coordinator for PG batch 2015-2017 at NIT Durgapur.
- Class representative for the postgraduate batch of Thermal engineering 2015-2017.
- Served responsibility of Civil maintenance in-charge of the hostel "SN Bose" at NIT Durgapur.
- Team leader for various intercollege festival competitions.

ACHIEVEMENTS

- 130+ citations in Google scholar.
- Qualified GATE twice with score greater than 90 percentiles.
- Recognized by Hindi academy for scoring 90% in the CBSE exam Class-X.
- Content manager at the social networking page "mantriji.in".

PUBLICATIONS

Journals

- *D.R. Karana*, R.R. Sahoo, Performance assessment of the automotive heat exchanger with twisted tape for thermoelectric based waste heat recovery, *Journal of Cleaner Production*, 283 124361 1-11 (2021) ISSN: 0959-6526 (IF: 11.02) DOI: HTTPS://DOI.ORG/10.1016/J.JCLEPRO.2020.124631
- *D.R. Karana*, R.R. Sahoo, Influence of geometric parameter on the performance of a new asymmetrical and segmented thermoelectric generator, *Energy* 179, 90-99 (2019) ISSN: 0360-5442 (IF: 8.857) DOI: HTTPS://DOI.ORG/10.1016/J.ENERGY.2019.04.199
- *D.R. Karana*, R.R. Sahoo, Heat transfer and pressure drop investigations of the compact exhaust heat exchanger having twisted tape inserts for automotive waste heat utilization, *ASME, Thermal Science and Engineering Application* 13(4) 041003 1-10 (2021) ISSN: 1948-5085 (IF: 1.47)
- *D.R. Karana*, R.R. Sahoo, Thermohydraulic performance of a new internal twisted ribs automobile exhaust heat exchanger for waste heat recovery applications, *International Journal of Energy Research* 44 11417-11433 (2020) ISSN: 1099-114X (IF: 4.672)
- *D.R. Karana*, R.R. Sahoo, Thermal, environmental and economic analysis of a new thermoelectric cogeneration system coupled with a diesel electricity generator, *Sustainable Energy Technologies and Assessments*, 40 100742 1-11 (2020) ISSN: 2213-1388 (IF: 7.632) DOI:

HTTPS://DOI.ORG/10.1016/J.SETA.2020.100742

- R.R. Sahoo, *D.R. Karana*, Effect of design shape factor on exergonic performance of a new modified extended-tapering segmented thermoelectric generator system, *Energy* 200, 117561 1-15 (2020) ISSN: 0360-5442 (IF: 8.857)
- *D.R. Karana*, R.R. Sahoo, Effect on TEG performance for waste heat recovery of automobiles using MgO and ZnO nanofluid coolants, *Case Studies in Thermal Engineering* 12, 358–364 (2018) (IF: 6.268)

Conferences

- *D.R. Karana*, R.R. Sahoo, Performance Evaluation of Thermoelectric Generator with Nanofluid Coolants for Waste Heat Recovery, Manuscript ID: IHMTC2019-ENE-178, 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2019), 28-31 December 2019, IIT Roorkee, Roorkee, India.
- *D.R. Karana*, A. Layek, Possibility of Increasing Rankine Waste Heat Recovery in IC Engine using Hybrid System, (NCARIMMIEM-2016), 12th & 13th December 2016, NIT Manipur, Imphal, India 795004

HOBBIES

- Avid traveller
- Playing basketball
- Reading articles concerning automobile industry