

**SUKHDEEP SINGH**

Citizenship: Indian ▪  
Date of birth: 25 June 1987

**Contact:**

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**Address:** House No – 115, Ravindra Enclave, Phase 2 Baltana Punjab, India.

**Objective:** Challenging and rewarding upper-level position in a growth-oriented organization that offers diverse job responsibility in Mechanical/Thermal engineering and will fully utilize both my technical and managerial abilities, possibly with an international perspective.

**Research Areas:** Thermal Management, Heat transfer, Fluid flow, CFD, Numerical modeling, Artificial Intelligence (AI), Data Science.

**KEY SKILLS:**

<b>3D Modeling PTC- CREO/ SOLID WORKS/</b>	<b>CNC- PROGRAMMING</b>	<b>FEM/FVM</b>	<b>Software skills</b>
Solid/ Assembly Modeling, and Simulation	Lathe Operations Milling Operations Drilling Operations	CFD (Design Module, Fluent, CFX, ICEM), COMSOL, ABACUS	C++, PYTHON, JAVASCRIPT MATLAB, EES, HTML5 CSS3

**ACADEMIC EDUCATION:**

<b>2015 – 2023</b>	<b>PhD (Studies on characteristics of spray cooling for Electronics Industry) (6.5 CGPA)</b> Dr. BR Ambedkar, National Institute of Technology, Jalandhar.
<b>2010 – 2012</b>	<b>Masters of Engineering (CAD/CAM &amp; Robotics) (6.19 CGPA)</b> Thapar University, Patiala, Punjab
<b>2007 – 2010</b>	<b>Bachelor of Technology (74.84%)</b> Rayat & Bahra Institute of Engineering & Bio-Technology, Punjab Technical University, Punjab.
<b>2004 – 2007</b>	<b>3-years diploma in Mechanical Engineering (70.38%)</b> Malwa Polytechnic College, Punjab State Board of Technical Education and Industrial Training, Chandigarh.
<b>2003 – 2004</b>	<b>Matriculation (CBSE Board) (68%)</b> Manav Mangal School, Sector 11, Panchkula.

### **PROFESSIONAL EXPERIENCE:**

Worked as Assistant Professor from 14<sup>th</sup> January, 2013 to 6<sup>th</sup> August, 2015 at Dr. BR Ambedkar, National Institute of Technology Jalandhar, Punjab.

- Where, I taught Core subjects to the undergraduate students of Mechanical Engineering such as Fluid Mechanics, Heat transfer, Computational Fluid dynamics (CFD), Thermodynamics.
- Further, the fundamental courses such as Engineering Graphics, Basics of Mechanical Engineering are also taught.
- Coordinated various Cultural, technical events, and short-term courses.

### **INDUSTRIAL TRAINING AND DISSERTATION DETAILS:**

- **Ph.D. thesis title:** Study on Spray cooling for Electronics Industry. Experimental and Numerical
- **ME thesis title:** Numerical evaluation of flow through a centrifugal slurry pump handling fly ash using **CFD (Ansys Fluent/CFX)**.
- **B.Tech Project title:** Design and development of shrimp spying robot rover. The project was designed in **SolidWorks** and developed in the lab.
- **Diploma Project title:** Design and development of Rope Brake Dynamometer. The project was first designed and analyzed in **AutoCAD** and later fabricated in the automobile lab.
- 6 months Industrial Training in **PARAMETRIC CADTECH** in design department. The training aimed at getting familiar and building projects using modeling and analysis softwares (**AutoCAD, CATIA, Ansys Workbench**).

### **ACHIEVEMENTS:**

- Placement representative for PhD scholars at Dr. BR Ambedkar National Institute of technology.
- Member of All India Research Scholars Association (AIRSA) and Joint Research Council of India (JRCI).
- Obtained Gold Medal in Tech fest 2007 organized by P.T.I.S. at G.T.B. polytechnic, Malout from the honorable Chief Minister of Punjab (Sardar Parkash Singh Badal).

- Represented district 3 times in the State Level Basketball Championship in Haryana.

### **ORGANIZATIONS:**

American Society of Heating Refrigeration and Air Conditioning Engineers, *Student* 09/2019 |  
Jalandhar, India

### **JOURNAL PUBLICATIONS:**

1. S. Singh, R. Kukreja, **Experimental investigations on heat transfer enhancement of enhanced surfaces in spray cooling using HFE-649**, Int. J. Multiph. Flow. 161 (2023) 104387.  
<https://doi.org/10.1016/j.ijmultiphaseflow.2023.104387>
2. S. Singh, R. Kukreja, **Experimental study on effect of enhanced surfaces and inclined mode on spray cooling heat transfer performance using HFE-649 coolant**, Energy Sources, Part A Recover. Util. Environ. Eff. (2022) 6537-6555.  
<https://doi.org/10.1080/15567036.2022.2100516>.
3. S. Singh, R. Kukreja, **Effect of binary mixed-surfactants and hybrid nanofluid on spray cooling heat transfer:**, Proc. Inst. Mech. Eng. Part E J. Process Mech. Eng. (2022) 095440892210976. <https://doi.org/10.1177/09544089221097691>.
4. S. Singh, R. Kukreja, **Experimental study on spray cooling heat transfer enhancement using MWCNT and TiO<sub>2</sub> hybrid nanofluid:**, Proc. Inst. Mech. Eng. Part E J. Process Mech. Eng. (2022) 095440892210949. <https://doi.org/10.1177/09544089221094991>.
5. S. Singh, R. Kukreja, **Experimental study on effects of surfactant and spray inclination on heat transfer performance in nonboiling regime**, Energy Sources, Part A Recover. Util. Environ. Eff. (2021) 1–15. <https://doi.org/10.1080/15567036.2021.2007313>.

### **CONFERENCE PUBLICATIONS:**

1. **“Numerical Modeling of a Single Droplet Impact on Wet Surface: Investigation of Film Thickness”**, 19th ISME Conference on Advances in Mechanical Engineering (Mechanical Systems and Sustainability), December,20-22, 2018, Proceeding number (ISME-81)

2. **“A Comprehensive Review on the Hybrid Nano-fluids for Heat Transfer Applications”**, 19th ISME Conference on Advances in Mechanical Engineering (Mechanical Systems and Sustainability), December,20-22, 2018, Proceeding number (ISME-82)
3. **“A Review on characteristics of spray cooling technique for high heat flux management”**, *National conference RATE-18*, June 2018, UIT Bhopal, India.
4. **“Evaluation of Erosion Wear in pump impellers of Centrifugal Slurry Pump”**, 3<sup>rd</sup> International Conference on Production & Industrial Engineering (CPIE-2013) March 29-31, 2013. Proceeding number (CPIE2013\_1107)
5. **“Evaluation of Performance Characteristics of Centrifugal Slurry Pump Handling Bottom Ash using CFD”**, 4<sup>th</sup> International Conference on Production & Industrial Engineering (CPIE-2016) December 19-21, 2016.
6. **“Numerical Evaluation of flow through a Centrifugal Slurry Pump handling Water and Fly Ash using CFD”**, 3<sup>rd</sup> International Conference on Production & Industrial Engineering (CPIE-2013) March 29-31, 2013. Proceeding number (CPIE2013\_1111)

#### **EDX VERIFIED ONLINE COURSES:**

1. edX Verified Certificate for **Introduction to Computer Science and Programming Using Python**. <https://courses.edx.org/certificates/56296c060a7c4d459e1c846acf4ddaf1>
2. edX Verified Certificate for **Machine Learning with Python: A Practical Introduction**, <https://courses.edx.org/certificates/7fee75cb8ff34f69a52fb0a5e479c2d5>

#### **SHORT TERM COURSES/INTERNATIONAL CONFERENCES ATTENDED:**

- Attended a GIAN course on **“Boiling and Condensation: Theory and applications”** from 6<sup>th</sup> to 14<sup>th</sup> September, 2016 at IIT Kanpur.
- Attended TEQIP-II sponsored one-week short-term course on **“Fundamentals & Applications of Finite Element Method”** organized by department of Industrial & Production Engineering from 13<sup>th</sup> to 17<sup>th</sup> June, 2016 at Dr. B R Ambedkar National Institute of Technology, Jalandhar.

- Participated TEQIP-II Sponsored Short-Term Course on “**Current Opportunities and New Directions in Chemical Sciences and Technology**” in Department of Chemical Engineering from 07<sup>th</sup> to 13<sup>th</sup> December, 2015 at Dr. B R Ambedkar National Institute of Technology, Jalandhar.
- Participated TEQIP-II Sponsored Short-Term Course on “**Advanced Engine Technologies (With open ECU’s)**” in Department of Mechanical Engineering from 15<sup>th</sup> -16<sup>th</sup> October, 2015 at Dr. B R Ambedkar National Institute of Technology, Jalandhar.
- Participated TEQIP-II Sponsored Short-Term Course on “**IC Engine Fuels and Combustion Technology**” funded by MHRD in Department of Mechanical Engineering from 14<sup>th</sup> -18<sup>th</sup> December, 2013 at Dr. B R Ambedkar National Institute of Technology, Jalandhar.
- Organized and participated a two-day Indo French Workshop on “**Developments in Academics and Research in Engineering Systems**” from 18<sup>th</sup> to 19<sup>th</sup> March, 2013 in the Department of Mechanical Engineering at Dr. B R Ambedkar National Institute of Technology, Jalandhar
- Participated in the Expert Talk by “**IEEE Computer Society**” on 6<sup>th</sup> April, 2011 at Thapar University, Patiala.
- Attended the International Conference on “**Emerging trends in Mechanical Engineering**” organized by the department of Mechanical Engineering from 24<sup>th</sup> to 26<sup>th</sup> February, 2011 at Thapar University, Patiala.

**INTERESTS:**

- **Basketball, Cosmology:** Evolution and Structure.

**LANGUAGES KNOWN:**

<b>Languages</b>	<b>Proficient</b>	<b>Intermediate</b>	<b>Beginner</b>
<b>English</b>	<input checked="" type="checkbox"/>		
<b>French</b>		<input checked="" type="checkbox"/>	
<b>Hindi</b>	<input checked="" type="checkbox"/>		

<b>Punjabi</b>	<input checked="" type="checkbox"/>		
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**REFERENCES:**

1. Dr. Rajeev Kukreja, Associate Professor in MED, NIT Jalandhar. (PhD supervisor) E mail: kukrejar@nitj.ac.in
2. Dr. Subhash Chander, Professor in MED, NIT Jalandhar. E mail: chanders@nitj.ac.in
3. Dr Sanjay, Assistant Professor in MED, NIT Jalandhar. E mail: sanjay@nitj.ac.in
4. Dr. Rajan Kumar, AssistSant Professor in MED, NIT Jalandhar. E mail: kumarR@nitj.ac.in