



## Dr. Rahul Chandel

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### Profile

Photovoltaic energy professional and researcher with over 15 years of experience in solar photovoltaic engineering and research. PhD in Energy (photovoltaic-thermoelectric engineering).

### Education

PhD (Energy), MBA (Operations Management), B.Tech (Electronics and Communication Engineering)

### Skills

**Hardware Proficiency:** Adept in photovoltaic power plant design and engineering, research, electronics and microcontrollers, use of advanced instruments like class A solar simulators, spectrometers, weather stations, dataloggers, sensors. Good knowledge of commercial solar tracking systems (SAT, DAT). Skilled in prototype PV-thermoelectric system building. Familiar with electron microscope XRD etc.

**Software Proficiency:** Complete modelling of solar energy based systems and thermoelectric devices in Ansys software. Photovoltaic system design and simulation using PVsyst software. Simulations in RetScreen and HOMER renewable energy software. Adept in building 3D models in Blender software. Familiarity with AutoCAD for 2D drawings. Familiarity with python and C++ programming language.

### Earned Coursera Course Certificates:

- Nuts and Bolts of Machine Learning by Google
- Machine Learning Regression by University of Washington
- Programming for Everybody (Getting Started with Python) by University of Michigan
- Python Data Structures by University of Michigan
- Using Python to Access Web Data by University of Michigan
- Capstone: Retrieving, Processing, and Visualizing Data with Python by University of Michigan

- Photovoltaic Systems by Technical University of Denmark
- Solar Energy System Design by State University of New York
- Solar Energy Basics by State University of New York
- Introduction to Embedded Machine Learning by Edge Impulse
- Basic Statistics by University of Amsterdam
- Understanding Research Methods by University of London

## Research Publications

S. No.	Title	Authors	Journal/ Conference	Impact Factor
1	Experimental Analysis and Modelling of a Photovoltaic powered Thermoelectric Solid-State Cooling System for Transition towards Net Zero Energy Buildings under different Solar loading Conditions	Rahul Chandel, S.S. Chandel, D. Prasad, R.P. Dwivedi	Journal of Cleaner Production, Accepted 03 Feb, 2024. Publication in progress. <a href="https://doi.org/10.1016/j.jclepro.2024.141099">https://doi.org/10.1016/j.jclepro.2024.141099</a>	11.1
2	Experimental Investigation of Photovoltaic-Integrated Thermoelectric Cooling System for Enhancing Power Generation under Real Outdoor Conditions	Rahul Chandel, R.P. Dwivedi, D. Prasad, S.S. Chandel	IEEE Xplore/ IEEE Conference on Energy Conversion (CENCON) (2023) <a href="https://doi.org/10.1109/CENCON58932.2023.10369273">https://doi.org/10.1109/CENCON58932.2023.10369273</a>	N/A (International Conference)
3	Development of a novel solar PV module model for reliable power prediction under real outdoor conditions.	Manish Kumar, Prashant Malik, Rahul Chandel, Shyam Singh Chandel.	Renewable Energy (2023), <a href="https://doi.org/10.1016/j.renene.2023.119224">https://doi.org/10.1016/j.renene.2023.119224</a>	8.7
4	Power generation enhancement analysis of a 400 kWp grid-connected rooftop photovoltaic power plant in a hilly terrain of India	Salwan Tajjour, Shyam Singh Chandel, Rahul Chandel, Nishant Thakur	<a href="https://doi.org/10.1016/j.esd.2023.101333">Energy for Sustainable Development</a> (2023) <a href="https://doi.org/10.1016/j.esd.2023.101333">https://doi.org/10.1016/j.esd.2023.101333</a>	5.5
5	Review of deep learning techniques for power generation prediction of industrial solar photovoltaic plants	Shyam Singh Chandel, Ankit Gupta, Rahul Chandel, Salwan Tajjour	Solar Compass (2023) <a href="https://doi.org/10.1016/j.solcom.2023.100061">https://doi.org/10.1016/j.solcom.2023.100061</a>	N/A (New Elsevier Journal)
6	Review on thermoelectric systems for enhancing photovoltaic power generation	Rahul Chandel, S.S.Chandel, D. Prasad, R.P. Dwivedi	Sustainable Energy Technologies and Assessments (2022), <a href="https://doi.org/10.1016/j.seta.2022.102585">https://doi.org/10.1016/j.seta.2022.102585</a>	7.63

7	Prospects of sustainable photovoltaic powered thermoelectric cooling in zero energy buildings: A review	Rahul Chandel, S.S.Chandel, D. Prasad, R.P. Dwivedi	International Journal of Energy Research (2022), <a href="https://doi.org/10.1002/er.8508">https://doi.org/10.1002/er.8508</a>	4.67
8	Perspective of New Distributed Grid connected Roof top Solar Photovoltaic Power Generation Policy Interventions in India	Rahul Chandel, S.S.Chandel, P Malik	Energy Policy (2022), <a href="https://doi.org/10.1016/j.enpol.2022.113122">https://doi.org/10.1016/j.enpol.2022.113122</a>	9.0
9	Research outcome of sustainable solar drying technology dissemination for preserving perishable agriculture and horticulture crops in the North Western Himalayan region of India	R.K. Aggarwal, Shyam Singh Chandel, Shiva Gorjian, Rahul Chandel	Sustainable Energy Technologies and Assessments (2022), <a href="https://doi.org/10.1016/j.seta.2022.102732">https://doi.org/10.1016/j.seta.2022.102732</a>	7.63
10	Performance analysis outcome of a 19-MWp commercial solar photovoltaic plant with fixed-tilt, adjustable-tilt, and solar tracking configurations	Rahul Chandel, S.S.Chandel	Progress in Photovoltaics (2021), 10.1002/pip.3458	6.7
11	A power prediction model and its validation for a roof top photovoltaic power plant considering module degradation	P Malik, Rahul Chandel, S.S.Chandel	Solar Energy,224 (2021), 184-194, <a href="https://doi.org/10.1016/j.solener.2021.06.015">https://doi.org/10.1016/j.solener.2021.06.015</a>	6.7
12	Review of Solar Photovoltaic Water Pumping System Technology for Irrigation and Community Drinking Water Supplies	S.S.Chandel, MN Naik, Rahul Chandel	Renewable and Sustainable Energy Reviews(2015),pp.1084-1099	16.80
13	Degradation analysis of 28 year field exposed mono-c-Si photovoltaic modules of a direct coupled solar water pumping system in western Himalayan region of India.	S.S.Chandel, MN Naik, V Sharma, Rahul Chandel	Renewable Energy,78(2015),193-202	8.63
14	Review of performance studies of direct coupled photovoltaic water pumping systems and case study.	S.S.Chandel, MN Naik, Rahul Chandel	Renewable and Sustainable Energy Reviews76(2015),163-175.	16.80
15	Uncertainty analysis of photovoltaic power measurements using solar simulators	Rahul Chandel	Energy Technology,1-12 (2013),763-769.	4.15
16	Degradation analysis of different PV modules after prolonged field operation	OS Sastry, Rahul Chandel, RK Singh, PK Dash, R Kumar	26 <sup>th</sup> European Photovoltaic Solar Energy Conference and Exhibition, 4AV.2.6(2011) ,pp 3495-3499.	NA (International Conference)
17	Degradation in performance ratio and yields of exposed modules under arid conditions.	OS Sastry, RK Singh, Rahul Chandel, PK Dash, R Kumar	26 <sup>th</sup> European Photovoltaic Solar Energy Conference and Exhibition, 4AV.2.34(2011) ,pp 3590 - 3591.	NA (International Conference)

## Patents

S.No.	Patent Title	Date of filing	Patent Number	Status
1	Portable Water Heating Solar Collector (PWHSC)	19-03-2021	341090-001	Granted on 17-05-2023
2	Controlled Lazer Heating System	19-03-2021	341089-001	Granted on 17-05-2023

## Book Chapters

Wrote three Chapters on SDG-7,11 and 13 in the book titled “**Building a Sustainable Future: Realising United Nations Sustainable Development Goals through Higher Education Institutes**” published jointly by Association of Indian Universities (AIU) and Shoolini University. Was also part of the Editorial Team. This book was launched by former **President of India** in 2023 and is publicly available in hard and soft copy.

[Book Link](#)

## Google Scholar Profile

<https://scholar.google.com/citations?user=szj-DrUAAAAJ&hl=en>

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