Curriculum Vitae

SantanKumar Chaurasiya

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Date of Birth	15/08/1995	Nationality	Indian
LINKS	LinkedIn, Google Scholar, ResearchGate		
PROFILE	I am currently working as a graduate research assistant at Cornell University. I specialize in Life Cycle Assessment (LCA) of diverse production systems and supply chains, with expertise in sustainable energy systems, bioplastics, biofuels, seaweed-based biorefineries, sensitivity analysis, and uncertainty analysis. My technical skills include environmental impact assessment, supply chain modeling, data analytics, and industrial process optimization. Passionate about sustainable manufacturing, circular economy, and innovative industrial solutions, I am committed to driving advancements in sustainability and contributing to impactful research and development in these fields.		

EMPLOYMENT HISTORY

Aug 2024— Present	Graduate research assistant, Cornell University (Environmental Defense Fund Project)

As an EDF (Environmental Defense Fund) Graduate Researcher at Cornell University, my research focuses on sustainable energy systems, life cycle assessment (LCA), and techno-economic analysis (TEA) to drive environmental and industrial sustainability. My work involves developing advanced modeling frameworks for evaluating the environmental impacts and economic feasibility of emerging sustainable technologies, with applications in biorefineries, circular economy strategies, and energy transition pathways. I specialize in process design and sustainability assessment of bioproducts, including bioplastics, biofuels, bio stimulants, biocosmetics, and construction materials. Additionally, I am involved in comparative LCA studies, process optimization, and energy-efficient manufacturing strategies.

Jan 2020 — Jul 2024	Junior Research Fellow/Senior Research Fellow, Dr BR Ambedkar National Institute of Technology Jalandhar

I worked as a Junior/Senior Research Fellow (JRF/SRF) in the Department of Industrial and Production Engineering, focusing on the domain of Sustainable Manufacturing. My research involved the fabrication of novel aluminum-titanium (Al-Ti) based metal matrix nanocomposites using ultrasonic stir casting. In addition to material development, I conducted machinability assessments through milling operations. Additionally, I conducted environmental impact evaluations of manufacturing and foundry processes using Life Cycle Assessment (LCA) methodology, contributing to the advancement of sustainable industrial practices.

Jul 2016 — Aug 2016	Internship at Wanakbori Thermal Power Station operated by Gujarat State Electricity Corporation Limited. Worked on increasing the efficiency of the conveyor belt carrying coal from the coal handling plant to the hopper and avoiding coal spillage. Gained insights into the design and management of coal-handling plants.

EDUCATION

Aug 2024 — Till	PhD, Cornell University, NY

Ph.D. in Systems Engineering. The working domain is Life Cycle Assessment of Seaweed-based biorefineries products

Jul 2017 — Jul 2019	Master of Technology, Lovely Professional University, Jalandhar

I graduated with a distinction (8.56 CGPA) in Manufacturing Engineering. The thesis title was "Design and Development of a Spherical Commodity Grader for Small and Marginal Farmers". Patent granted: Patent no: 354581

Jul 2013 — Jul 2017	Bachelor of Engineering, Gujarat Technological University, Ahmedabad

Graduate with distinction (8.64 CGPA) in "Mechanical Engineering".

AREA OF EXPERTISE

- Climate Change
- Sustainable Manufacturing/Machining
- Life Cycle Assessment (LCA)
- Environmental Impact Assessment
- Sustainable Energy System
- Biofuels, Bioplastics, Biomaterials
- Material Science, Casting & Composite Materials
- Machining
- Environmental, Social and Governance (ESG)
- Industrial Engineering
- Operation Research
- Data Analytics
- Patents (IPR)

SOFTWARE SKILLS

- SimaPro
- OpenLCA
- ANYSYS
- MATLAB
- Creo Parametric 4.0
- MS Office
- AutoCAD
- Design Expert
- Python

PATENT

1. An Apparatus for Sorting Agricultural Products,
   WIPO Application no: WO2021009767A1 (Granted)- Patent no: 354581)
2. System and Method for Fabrication of Potato Grader for Small and Marginal Farmers
   Application no (India): 202211075592

PUBLICATIONS

- Chaurasiya, S., You, F. et al. (2025) From Seaweed Biorefinery to Bioplastics: A Life Cycle Analysis of Energy Use and Environmental Impacts (Under Review-IE&C)
- Chaurasiya, S., You, F. et al. (2025) Life Cycle Assessment of Seaweed Biorefineries: A Review of Environmental and Economic Impacts (Under review- RSC Sustainability)
- Chaurasiya, S., Singh, G. (2023). Life cycle assessment of nanocomposite manufactured using ultrasonic stir casting. Journal of Materials Science, 58,5298– 5318. https://doi.org/10.1007/s10853-023-08363-0
- Chaurasiya, S., Singh, G. (2023). Sustainability Assessment Comparison of Cutting Fluid for Turning of Titanium Alloy Grade II. Process Integration and Optimization for Sustainability. https://doi.org/10.1007/s41660-023-00322-1
- Chaurasiya, S., Singh, G. Evaluating the Environmental Footprint: Life Cycle Assessment of Metal Matrix Composites Manufactured by the Stir Casting Process. Process Integr Optim Sustain (2023). https://doi.org/10.1007/s41660-023-00355-6
- Chaurasiya, S., Singh, G. Life cycle assessment of sustainable turning techniques for pure titanium alloy: a comparative analysis. Int J Interact Des Manuf (2023). https://doi.org/10.1007/s12008-023-01546-8
- Singh, G., Gupta, M.K., Chaurasiya, S. et al. (2021). Rice straw burning: a review on its global prevalence and the sustainable alternatives for its effective mitigation. Environmental Science and Pollution Research, 28, 32125–32155. https://doi.org/10.1007/s11356-021-14163-3
- Sharma et al. (2024). Finite element modelling and analysis of jute fibre reinforced PLA matrix composite. Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2024.04.056
- Chaurasiya, S., Singh, G. (2023). Analyzing and optimizing the working parameters of a newly designed and fabricated spherical commodity grader for small and marginal farmers. (Under journal consideration).

- Chaurasiya, S., Singh, G. (2024). Exploring Sustainable Manufacturing: A Comprehensive Review of Literature and Practices. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-99-6094-1_2

REVIEWER TO INTERNATIONAL JOURNAL/ CONFERENCES

- Journal of Cleaner Production (IF: 11.06)
- Sustainable Production and Consumption (IF: 12.1)
- Journal of Intelligent Manufacturing (IF: 8.3)
- The International Journal of Life Cycle Assessment (IF: 4.8)
- Journal of Materials Science (IF: 4.5)
- Material Today proceedings (Scopus)
- CPIE (conference)

EDITORIAL BOARD MEMBER

- Journal of Water Research (JWR)

PROFESSIONAL BODY MEMBERSHIP

- International Association of Hydrological Science
- International Ozone Association
- Life Cycle Initiative (United Nations)

SHORT-TERM COURSES

- Completed short-term course "Perspectives of Machining - Present and Future" by Dr. Knut Sorby, Department of Production and Quality Engineering, NTNU, Norway, organized by "GIAN" at NIT, Jalandhar (June 2nd-7th, 2019)
- Completed short-term course "Emerging Trends and Contemporary Tools for Research and Practice in Ergonomics and Safety" by the Department of Industrial and Production Engineering, NIT Jalandhar, organized by "GIAN" at NIT, Jalandhar (March 11th-15th, 2022)
- Completed short-term course "Metal Additive Manufacturing-2022" by the Department of Industrial and Production Engineering, NIT Jalandhar, organized by "GIAN" at NIT, Jalandhar (December 12th-17th, 2022)
- Completed short-term course " Sustainability Engineering: Determination of Water and Energy Footprints using Life Cycle Assessment" by Dr. Nawshad Haque, CSIRO, Australia, organized by "GIAN" at MNNIT, Prayagraj (December 26-31st, 2022).
- Completed One Week Online short term-term course “Advances in Energy, Environment and Chemical Engineering” by the Department of Industrial and Production Engineering, NIT Jalandhar (May 19-23rd , 2023).
- Completed One Week Online Short-Term Course on “Practices of Statistical & Optimization Techniques for Research (PSOTR-22)” organized by Department of Industrial and Production Engineering, Dr B R Ambedkar National Institute of Technology Jalandhar held on (June 6-10th, 2022.
- Completed One Week Online Short-Term Course On “Recent Advances in Industrial and Production Engineering” (RAIPE-2021) organized by Department of Industrial and Production Engineering, Dr B R Ambedkar National Institute of Technology Jalandhar held on (December 17-21st , 2021).
- Completed the TEQIP-III Sponsored online short-term course on “Material Characterization Techniques” organized by the Institute Instrumentation Centre, Dr B R Ambedkar National Institute of Technology, Jalandhar (August 24-28th , 2020).
- Completed the TEQIP-III Sponsored One Week Online Short-Term Course on “Supply Chain Management: Challenges and Strategies” Organized at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar (July 13-17th, 2020).

- Completed three days Online Short-Term Course on "Recent Advances in Mechanical Engineering Systems (RAMES-20)" organized by Mechanical Engineering Department, LKCTC Jalandhar (July 29-31st , 2020).

CONFERENCE

- Attended "International Conference on Composite Materials: Manufacturing, Experimental Technique, Modelling and Simulation" (ICCMMEMS) 2018 organized by the School of Mechanical Engineering, Lovely Professional University (March 15th-17th, 2018)
- Attended TEQIP–III sponsored E-International conference on "Socio-Economic and Health Challenges due to COVID-19 and Mitigation Strategies (SEHCM-2020)" organized by the Centre for Continuing Education (CCE), Dr B R Ambedkar National Institute of Technology, Jalandhar (October 22-23rd, 2020).
- Attended "7th International Conference on Production & Industrial Engineering (CPIE-2023)" organized by Department of Industrial and Production Engineering, Dr. B.R. Ambedkar National Institute of Technology Jalandhar held on (March 10-12th, 2023).

ROLE AND RESPONSIBILITIES

- **Conference, Session Coordinator**
  Serve as a Session coordinator at the "7th International Conference on Production and Industrial Engineering (CPIE 2023)" held at Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Punjab, India (March 10- 12th, 2023).
- **Short term course Coordinator**
  Serve as session coordinator in online short-term course "Metal Additive Manufacturing-2022" in the Department of Industrial and Production Engineering, NIT Jalandhar, organized by "GIAN" at NIT, Jalandhar (December 12th-17th, 2022).
- Coordinator for conference transportation committee
  Serve as Coordinator in the Transportation Committee for "106th Indian Science Congress 2019" held at Lovely Professional University from January 2nd- 7th, 2019.

VOLUNTEER

- Serving as a volunteer in the PRYASS organization, educate the children of labourers and those socially deprived, who are devoid of education, especially those of immigrant labourers (Jan 2020- till now).at Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Punjab, India (March 10- 12th, 2023).
- Serve as a volunteer on the World Language Day, guide and helping students coming from outside for different activity such as ASL language, and Bangla laungage, organize by Cornell University, USA.

EXTRACURRICULAR ACTIVITIES

- Graduation Project Expo, Lovely Professional University
  Won first prize out of 600 projects in the "Graduation Project Expo" competition for the invention of "An Apparatus for Sorting Agricultural Products" organized by Lovely Professional University, Jalandhar-India. (April 2019)
- Technical Treasure Hunt, SPCE Visnagar, Gujarat
  Won first prize in the "Technical Treasure Hunt" competition at TechEnigma 2015, SPCE, Visnagar-India. Sep (2016)

REFERENCES

Available upon request