

RANJIT DESAI

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EDUCATION

- **Rochester Institute of Technology, Rochester (NY), USA. PhD in Sustainability** *Aug. 2015-Present*
– Relevant coursework: Multi-criteria Decision Analysis, Data Analysis, Energy Policy, Risk Analysis, Industrial Ecology, Fundamentals of Sustainability Sciences **CGPA: 3.82/4**
- **Erasmus Mundus Masters** *Edition 2011-2013*
European Joint Masters in Management and Engineering of Environment and Energy **CGPA: 3.42/4**
 - **KTH Royal Institute of Technology, Stockholm, Sweden** *Aug. 2012-Sep. 2013*
– Relevant coursework: Energy and Environment, Renewable Energy Technologies, Sustainable Power Generation, Sustainable Energy Utilization **GPA: 3.43/4**
 - **EMN Ecole des Mines de Nantes, Nantes, France** *Sep. 2011-Jul. 2012*
– Relevant coursework: Environmental Management and Strategies of Sustainability, Project Management, Economics, Finance and Accounting **GPA: 3.42/4**
- **Vishwakarma Institute of Technology, Pune, India. Bachelors of Engineering (Mechanical)** *Aug. 2006-May 2010*
– Relevant coursework: Fluid Machinery and Fluid Power, Heat Transfer, Thermodynamics **CGPA: 8.36/10**
– Thesis: Design, Manufacturing, and Testing of Parabolic Trough Concentrator

PROFESSIONAL EXPERIENCE

- **Sinhgad College of Engineering (affiliated with University of Pune), Pune, India. Assistant Professor** *Jul. 2014-Jun. 2015*
– Taught and conducted labs for undergraduate mechanical engineering courses
– Assessed and supervised University of Pune examinations
– Conducted research and consulted for energy audit projects along with other faculty members
- **Ink Future, Pune, India. Associate** *Jan. 2014-Aug. 2015*
– Established the India chapter of this global think-tank network
– Steered bi-weekly group discussions with associates
– Generated summary reports and circulated among global associates to continue online discussions
- **CPC Analytics, Berlin, Germany. Freelance Consultant** *Feb. 2014-Aug. 2015*
– Maintained and wrote for CPC blog
- **Independent Consultant, Pune, India.** *Feb. 2014-May 2014*
– Developed a business plan for a team researcher participating in the Bill and Melinda Gates Foundation's deployable waterless toilet system program
– Conceptualized and prepared system designs
- **KTH Royal Institute of Technology, Stockholm, Sweden. Research Assistant** *Mar. 2013-Dec. 2013*
– Thesis: Thermo-Economic analysis of direct steam generation (DSG) of central tower in solar tower systems
– Proposed a new architecture for the DSG receiver
– Modelled a thermal model of complete receiver system with boiler, super-heater, and re-heater sections in MATLAB
– Calculated optimized mass flow rate for a large scale regenerative Rankine cycle power plant of 123 MW
- **AKSON'S Solar Equipments Private Limited. Pune, India. Design Engineer** *Jun. 2010-May 2011*
– Designed a novel low-cost 'Parabolic Trough Concentrator' for roof-top mounting
– Developed a process steam generation and a community kitchen system with 'Scheffler Concentrator'
– Managed a team to develop an innovative solar water heating system: 'AKSON'S PENTA'
– Member of a core team to formulate and realize a technology exchange MoU

SKILLS

- R, MATLAB, Python, Fortran, C-programming, LEAP, RETSCREEN, Sima Pro, TRNSYS, SAM, Minitab, SPSS, Aspen plus
- **Languages:** Hindi (Native), French (Intermediate), German (A2-Goethe Institute), Marathi (Mother tongue)

EXTRA-CURRICULAR ACTIVITIES

- Member of Engineers for Sustainable World RIT Chapter, Rochester, NY (2016-present)
- Student member of Association of Energy Engineers (2016-present)
- Core member of planning and strategy team for Imagine RIT at RIT, Rochester, NY (2015-2016)
- Member of Energy Committee for ME3 students at KTH, Stockholm, Sweden and EMN, Nantes, France (2011-2013)
- Chief Organizer for robotics competitions in VITality-A national level technical event held at VIT, Pune, India (2008-2009)

PATENTS AND PUBLICATIONS

- **Patent:** Freeze Concentration System (Status: Pending)
Patent Application Number in the Indian Patent Office: 410/MUM/2012.
- **Ranjit R. Desai**, Roger B. Chen, William Armington, "A Pattern Analysis of Daily Electric Vehicle Charging Profiles: Operational Efficiency and Environmental Impacts", To be presented at the 96th Annual Meeting of the Transportation Research Board, Washington, DC, January 2017.
- Abhishek B. Sahasrabudhe, **Ranjit R. Desai**, and Siddharth K. Jabade, "Modeling and Simulation of a Freeze Concentration Technique for Sugarcane Juice Concentration," Conference proceedings of 2nd International Conference on Mechanical, Industrial and Manufacturing Technologies 2011(MIMT 2011), vol. 1, pp. 303-306.
- Abhishek B. Sahasrabudhe, **Ranjit R. Desai**, and Siddharth K. Jabade, "Freeze Concentration of Sugarcane Juice in a Jaggery Making Process-Modelling, "International Journal of Modelling and Optimization", vol. 1, no. 2, pp. 118-121, 2011.
- **Ranjit R. Desai**, Abhishek B. Sahasrabudhe, Kalyana K Sundaram, "A Review of Developments in Solar Parabolic Trough Concentrator Technology," Conference Proceedings 'Energetic 2010', Bangaluru, India.

PROJECTS

- **Analysis of Daily Charging Profiles of Plug-In Electric Vehicle (PEV) Drivers (Research Project)** *Jan. 2016-Present*
Advisor: Prof. Roger B. Chen, RIT, Rochester, NY, USA
 - Cluster analyzed daily charging profiles of PEV drivers
 - Performed operational Efficiency analysis of public charging stations
 - Carried out environmental impact analysis of charging behavior of PEV drivers
- **Analysis of Energy Recovery Unit at Golisano Institute for Sustainability (Research Project)** *Sep. 2015-Present*
Advisor: Prof. Thomas Trabold, RIT, Rochester, NY, USA
 - Calculated energy transfer from the two wheel (enthalpy wheel and dehumidification wheel) ERU at GIS using data from the smart LEED Platinum building operating system of GIS
 - Analyzed energy savings with respect to weather and time of the day
- **Life Cycle Analysis of Different Charging Behaviors of Plug-In Electric Vehicle (PEV) Drivers Based on Cluster Membership (Industrial Ecology)** *Mar. 2016-May 2016*
Advisor: Prof. Callie W. Babbitt, RIT, Rochester, NY, USA
 - Calculated environmental impact in terms of CO₂ emissions of different clusters of PEV drivers using Sima Pro
 - Studied impact of charging behaviors as a Global Warming Potential (GWP) in terms of CO₂ emissions
 - Compared PEV drivers with respect to their cluster membership and their environmental impacts
- **Multi-criteria analysis of the Energy Recovery Unit at Golisano Institute for Sustainability (GIS) (Multi-criteria Sustainable Systems Analysis)** *Jan. 2016-May 2016*
Advisor: Prof. Gabrielle Gaustad, RIT, Rochester, NY, USA
 - Developed an optimization model of energy transfer of ERU
 - Analyzed ERU system with respect to operating temperature and outside temperature
 - Proposed changes in operating set temperatures to facilitate increase in energy savings
- **Malta-Energy Systems Analysis (Energy and Environment)** *Sep. 2012-Dec. 2012*
Advisor: Prof. Mark Howells, KTH, Stockholm, Sweden
 - Modeled energy system by constructing scenarios in LEAP using population, GDP, indigenous renewable energy potential, EU's 20-20-20 climate mitigation goals and modern day technologies like Smart Grids
 - Analyzed for maximum renewable energy usage and minimum GHG emissions to put forth policy recommendations
 - Proposed policy framework to achieve GHG emissions reductions for Malta
- **Biogas Upgrading in Indian Context (Integrated Engineering Project)** *Feb. 2012-Jul. 2012*
Advisor: Dr. Shivaji Ramalingam, EMN, Nantes, France
 - Selected and dimensioned an upgrading facility for medium scale biogas plant based on adsorption
 - Analyzed the current development policies for development of biogas in India
 - Economic feasibility study to foresee future of biogas in replacing CNG
- **Layer Freezing in Freeze Concentration Technique (FCT) (Research project)** *Jan. 2010-Sep. 2011*
Advisor: Dr. S. K. Jabade, VIT, Pune, India
 - Designed and developed an innovative model using MATLAB
 - Validated using the experimental setup
 - Project culminated in one patent and three research articles