

Reema Mohanty

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| Bangalore,IN

SUMMARY

Reema is a competent proactive researcher with a research experience of 7+ years and comprehensive knowledge in **energy modelling ,GIS technique, circular economy, climate change mitigation , data analysis, statistical methods, sustainability development goals, carbon neutral (net zero) targets and climate change mitigation**. She is a research assistant at the Indian Institute of Science (Centre for Sustainable Technology Department) Bangalore, India and currently waiting for her thesis submission in October 2022. She has exposure to projects implemented across FMCG, healthcare, solar, wind, biofuel and agriculture. She has been successful in managing large scale projects with **technical and commercial strategy, leadership feature, interpersonal skills, decision making, collaboration, stakeholder and project management** with proficiency in grasping new technical concepts and effectively utilizing them for business value creation, waste to energy and science- based targets.

KEY SKILLS

- MS Office
- GAMS
- Git-Hub
- MATLAB
- GaBi, SimaPro, Ecoinvent
- Python

RESEARCH EXPERIENCE

Indian Institute of Science | Senior Research Fellow (Ph.D.)

Bangalore, IN | Aug'16 – Present

Indian Institute of Science is a premier research institute in India. It is globally recognized for research in science and technology.

- **Project Title: Sustainability Assessment of 2G biofuel supply chain using a suitable mathematical model in circular economy framework in the transport and power sector.**
- **Duration:** 6 years

Description: In the proposed work a novel energy model is developed with the help of strategic case study and AI based solutions which will assess the sustainability in the transport and power generation sector. As stubble burning and vehicular emission is a huge cause of air pollution and climate change in India, the work helps to find a solution to eradicate these issues. It includes mapping and consolidation of existing agro-residues, tools, and best practices based on GIS technique with an emphasis on sustainable production practices, a system based on regeneration in a closed loop, products that are recovered, reused, redesigned, repaired and used as input to more products and not disposed of as waste. A commercial and technical analysis on the development of a range of agro-waste to value, identifying key developments, new technologies and potential applications in the domestic and international markets is thoroughly performed. While doing the modelling the gender equality and social inclusion are also considered. In the meantime, behavioural assessment is done in order to map and consolidate existing and planned training or briefings on environmentally sustainable logistics and supply chain and circular economy principles and practices as the key stakeholders are farmers.

- **Project Title: Sustainability assessment of LiON battery for Electric vehicles.**
- **Duration:** 6 months

Description: Proposed work was to do the modelling of the LiON battery; to perform both life cycle assessment and impact assessment of the battery using MS Excel to evaluate the **economic, technical, social, and environmental** sustainability of the LiON battery. An innovation solution was proposed for the battery waste rather than going for land filling which was becoming a cause for environmental pollution.

- **Project Title: Sustainability assessment of e-waste using a circular economy framework.**
- **Duration:** 6 months

Description: Proposed work is to develop a business case involving circular economy concepts to promote refurbishment, extended producer responsibility, and make the companies' products more marketable.

Year & Publisher	Publication Title
(2022) Renewable Energy	Establishing a circular economy framework in the upstream of a 2G Ethanol-based supply chain in Karnataka, India. (Under review)
(2021) CTRG proceedings in Springer Nature	Book Chapter of springer nature on "Sustainability Assessment of Biomass within Biofuel Supply Chain in Transport Sector using Circular Economy Framework".
(2020) Dresden Nexus Conference	A poster on "Biofuel Supply Chain Sustainability Assessment through Circular Economy"

EXPERIENCE PRIOR TO Ph.D.

POLICY ENGINE UK (UBI Centre) | Research Intern

Policy Engine UK is a branch of the USA based think tank Universal Basic Income.

Project Title: Carbon tax model for the United Kingdom scenario London, GB | Jan 22' – April 22'

Duration: 4 months

Description: The work estimates the household emissions, carbon foot printing, economic modelling providing suggestion for the UK government regulatory to implement the carbon tax policies and assess the **scope 1, scope 2 and scope 3 emissions**. Basically, carbon tax modelling is done with respect to the total consumption in household and alternative options like electric vehicle, change in consumer behaviour, sustainable consumption of food etc is advised to the clients, who are from the political parties as well as non-profitable organizations. So, carbon foot printing is one of the key applications which has been implemented. Also, the risk assessment is performed with respect to household consumptions in order to educate the consumers about the alarming effect of climate change.

CMR Institute of Technology | Assistant Professor

Bengaluru, India | July '15 – Jun '16

CMRIT is one of the leading technology and research-based educational institutes in Southern India.

Project Title: Two diode modelling of the photovoltaic array in order to be connected in the micro-grid.

- Worked in MATLAB environment for one year towards modelling and simulation of PV Array under non-shading and partial shading conditions.

Project Title: Use of occupancy sensor in a mall/hotel.

- Implemented proximity sensor to know the number of occupants coming into a room as it can be done in the entrance of a corporate building, shopping malls, etc.

ACADEMIC QUALIFICATION

2022 (In progress)	Ph.D. (Center for Sustainable Technologies)	Indian Institute of Science (IISc), Bengaluru
2014	Master of Technology (M.Tech.) in Industrial Electronics	National Institute of Technology (NIT), Rourkela
2011	Bachelor of Technology (B. Tech.) in Electronics and Electrical Engineering	Silicon Institute of Technology, Bhubaneswar, (Biju Patnaik University of Technology)
2007	XII (Council of Higher Secondary Education)	Ravenshaw Junior College, Cuttack
2005	X (Board of Secondary Education)	Secondary Board High School, Cuttack

EXTRA-CURRICULAR ACHIEVEMENTS

- Member of Zeal Club – focused on creating social awareness and education of socially backward people.
- An active member of the social responsibility cell at IISc Bangalore where the slum workers are provided with good and hygienic food, clothes and education materials such as notebooks, pen etc.
- Represented my high school in the **Mock Parliament** conducted on the Indian National Television channel (Doordarshan) as the Speaker of the house.