

Dr. Sharmistha Banerjee

Assistant Professor | Design for Sustainability Researcher

Contact Information

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Professional Summary

Accomplished academic and researcher with **17 years of comprehensive experience** spanning industry practice, teaching, and research in Design for Sustainability. Currently serving as Assistant Professor at IIT Guwahati with proven expertise in sustainable product-service system design, disaster risk management, and community-based innovation. Co-founder of the Sustainability and Social Innovation Lab and active contributor to the global Learning and Education Network in Sustainability (LeNS) consortium of 150+ universities worldwide.

Key Metrics:

- **17 years** of professional experience (2006-2025)
- **30 peer-reviewed publications** (2 journal articles, 24 book chapters/conference proceedings, 4 conference papers)
- **9 major consultancy and research projects** (Government and industry funded)

Education

Doctor of Philosophy (Ph.D.) | 2021

Sustainability-Orienting Design Framework for Farm Machinery Design

Indian Institute of Technology Guwahati

Master of Science (MSc) | 2008-2010

Integrated Product Design

Delft University of Technology, Netherlands

Bachelor of Design | 2002-2006

Industrial Design

Indian Institute of Technology Guwahati

Current Academic Positions

Assistant Professor | August 2013 - Present

Department of Design, Indian Institute of Technology Guwahati

- Teaching undergraduate and postgraduate courses in design sustainability, interaction design, and product development
- Leading research initiatives in sustainable product-service systems and distributed economies
- Supervising doctoral and master's students in design for sustainability research

Associate Faculty | *March 2020 - Present*

Centre for Disaster Management and Research, Indian Institute of Technology Guwahati

- Developing community-based disaster risk management solutions
- Research in gamification for disaster preparedness education and training

Co-Founder | *May 2015 - Present*

Sustainability and Social Innovation Lab, Department of Design, IIT Guwahati

- Leading interdisciplinary research in Knowledge Innovation, Product and Service Innovation, and Social Innovation
- Establishing international collaborations through LeNS network consortium

Past Experience

Senior Lecturer | *August 2012 - July 2013*

MIT Institute of Design

- Conducted advanced courses in Green Design, Ethnographic Research, and Research Methods

Design Consultant | *October 2010 - August 2012*

Shenoy Innovation Studio, IDC, IIT Bombay

- Led R&D project with ACC Ltd. for affordable and sustainable rural housing solutions

Assistant Manager | *March 2007 - August 2008*

MIDCO Ltd.

- Design and development of fuel dispensers and industrial products

Executive Design and Development | *October 2006 - February 2007*

Prince Plastics Pvt. Ltd.

- Design of FMCG plastic products and market research

Interface Designer | *June 2006 - October 2006*

Infosys Technologies Ltd.

- Information architecture and user experience design for web-based applications

Publications (Total 30)

Peer-Reviewed Journal Articles

1. Gharate, T., Karanwad, T., Deka, M. K., Banerjee, S., & Banerjee, S. (2024). Comparative Life Cycle Assessment and Pharmaceutical Validations of Directly Compressed versus Additively Manufactured Tablets. *Industrial & Engineering Chemistry Research*. doi:10.1021/acs.iecr.4c00258
2. Banerjee, S., & Puneekar, R. M. (2020). A sustainability-oriented design approach for agricultural machinery and its associated service ecosystem development. *Journal of Cleaner Production*, 264. doi:10.1016/j.jclepro.2020.121642

For a full list of publications, see: <https://orcid.org/0000-0002-1647-6922>

Research Projects & Consultancy (9 Major Projects)

Government-Funded Projects

1. **National Institute of Disaster Management** - Workshop on Disaster Risk Management through Games and Gamification (Ministry of Home Affairs, Government of India)
2. **Ministry of Electronics and Information Technology** - Workshop on Design for Sustainability for Electronics Product Design (Government of India)
3. **Design Innovation Center Projects** (Ministry of Human Resource and Development, Government of India):
 - Scale-appropriate Machinery for Ginger and Turmeric Post-harvest Processing
 - Solar Tunnel Dryer for High Value Agricultural Products of NE Region
 - Hand Operated Assam Lemon Fruit Harvester

Industry & International Projects

4. **ABB LV** - Study on Ease of Disassembly for ABB LV Products at End-of-Life Stage
5. **Erasmus+** - The International Learning Network of Networks on Sustainability (LeNSin)
6. **International Development Enterprise - Bangladesh** - Design of Scale-appropriate Agricultural Machinery for Rural Bangladesh

Core Competencies

Research Specializations:

- Design for Sustainability and Circular Economy
- Sustainable Product-Service System Design
- Community-Based Disaster Risk Management
- Agricultural Machinery Design and Innovation

- Distributed Economy Solutions

Technical Skills:

- Systems Thinking and Participatory Design Methodologies
- Life Cycle Assessment (LCA)
- User Research and Ethnographic Methods
- Design Thinking and Innovation Frameworks
- Sustainability Framework Development

Teaching Portfolio:

- Introduction to Interaction Design
- System Design for Sustainability
- User Research Methods
- Design Management
- Product Design and Development

Professional Affiliations & Networks

- **Learning and Education Network in Sustainability (LeNS)** - Active member of global consortium (150+ universities)
- **International Conference on Research into Design (ICoRD)** - Regular contributor and reviewer
- **Springer International Publishing** - Contributing author and reviewer

Recognition & Impact

- Established the first dedicated Sustainability and Social Innovation Lab at IIT Guwahati
- Contributing to two UN Sustainable Development Goals (SDG 11 and SDG 12) through research initiatives
- International collaboration with Delft University of Technology, Politecnico di Milano, and the global LeNS network
- Mentored 29 postgraduate students, 1 completed PhD, and 4 on ongoing PhDs in sustainable design research.

Last Updated: June 2025