Name: Dr. Rita Banik
Affiliation: Electrical Engineering, Faculty of Science and Technology, The ICFAI University, Tripura
Position: Associate Professor
Education: Doctor of Philosophy (Ph.D.)

Research Focus: Dr. Rita Banik specializes in renewable energy generation and sustainability, with expertise in MATLAB simulation, electrical power engineering, power systems analysis, and distributed generation. She has extensive knowledge in power systems simulation, quality, and stability, contributing to innovative approaches in sustainable power generation and integration.

Skills and Expertise:

- Renewable Energy Integration and Forecasting
- Electrical Power Engineering
- Power Systems Analysis & Modeling
- Power Quality and Stability
- Distributed Generation

Academic Contributions: Published 21 research papers, with over 1,352 reads and 164 citations, demonstrating her influence in fields such as biomedical imaging, renewable power forecasting, and AI applications in agriculture. Her recent works include advancements in AI-driven diagnostics for diabetic retinopathy and machine learning integration in agriculture.

Notable Publications:

1. *Advancing diabetic retinopathy classification using ensemble deep learning approaches* (2025) - Uses deep learning approaches for improved accuracy in medical image analysis.
2. *Interpretable wind power forecasting with residual learning-based model* (2025) - Proposes an ensemble model to enhance wind power

3. *Rainfall prediction for climate‑resilient agriculture: a robust ensemble with SARIMA and LightGBM* (2024)

4. *Enhanced Renewable Power and Load Forecasting Using RF-XGBoost Stacked Ensemble* (2024) – Focuses on advanced machine learning models for renewable energy and load forecasting.

5. *GAN-Driven Liver Tumor Segmentation: Enhancing Accuracy in Biomedical Imaging* (2024) – Uses GANs for improved accuracy in medical image analysis.

6. *Machine Learning Integration in Agriculture: Concepts and Applications* (2024) – Explores AI's role in agriculture for sustainable crop management.

7. *Improving Solar PV Prediction Performance with RF-CatBoost Ensemble* (2023) – Proposes an ensemble model to enhance solar photovoltaic energy predictions.

8. *An Efficient Solar Energy Management Using IoT-Enabled Arduino-Based MPPT Techniques* (2022) – Discusses IoT applications in solar energy management.