

DEPARTMENT VISION

To produce globally competitive and socially responsible engineering graduates and to bring out quality research and education, generating knowledge in the frontier areas of Electronics and Communication Engineering

DEPARTMENT MISSION

1. To achieve self-sufficiency on all fronts to ensure qualitative Teaching-Learning practices.
2. To provide quality education, student-centred Teaching-Learning processes and state of art infrastructure for professional aspirants hailing from both rural and urban areas.
3. To impart technical education that encourages independent thinking, developing strong domain knowledge, contemporary skills and attitude towards holistic growth of young minds.
4. Responsiveness to both local and global industry needs and creating opportunities through incubation and implementation of innovative programs
5. To serve the community as disciplined responsible citizens in a rapidly changing and expanding global community.
6. Evolving this organization into a centre of academic and research excellence.

ADVANCEMENTS IN RENEWABLE ENERGY TECHNOLOGY

Renewable energy comes from sources that replenish themselves naturally and quickly, unlike finite fossil fuels (coal, oil, natural gas).

Renewable energy sources generally have a much lower carbon footprint, resulting in fewer greenhouse gas emissions that contribute to climate change.

Advantages of Renewable Energy: Inexhaustible, Cleaner energy, Energy security

Challenges and Considerations: Intermittency, Cost, Environmental impacts.

Advancements in Renewable Energy:

Soaking Up the Sunshine:

- **Breaking records:** Scientists have achieved a stellar 23.64% efficiency with CIGS solar cells, surpassing previous benchmarks and pushing the boundaries of solar power generation potential.
- **Simulating success:** Researchers have developed a new design for solar cells that utilizes complex computer simulations, promising significantly higher efficiency than existing models.

Beyond the sun:

- **Turning waste into potential:** A revolutionary method using light-driven photocatalysis allows the conversion of polyethylene waste into valuable chemicals, offering a sustainable solution for plastic management.
- **Hydrogen's bright future:** Scientists have developed novel nanostructures that achieve record-breaking efficiency in generating hydrogen using solar energy, paving the way for a cleaner and more sustainable fuel source.

Smarter grids, smoother flow:

- **AI steps up:** A new AI model optimizes the use of renewable and other energy sources, improving power restoration techniques and ensuring a more resilient grid, particularly for isolated microgrids.

Looking ahead:

These advancements are just the tip of the iceberg. With continuous research and innovation, we can expect even more exciting developments in renewable energy technology, leading us towards a cleaner and more sustainable future.

