

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 NANO TECHNOLOGY

Nanotechnology, the manipulation of matter on an atomic and molecular scale (1-100 nanometers), is a rapidly evolving field with exciting advancements happening across various sectors.



Healthcare:

- Targeted drug delivery: Nanoparticles can be designed to deliver drugs directly to diseased cells, minimizing side effects and improving treatment efficacy. For example, researchers have developed nanoparticles that can deliver chemotherapy drugs specifically to cancer cells.
- Early disease detection: Nano sensors are being developed to detect diseases at their earliest stages, allowing for earlier intervention and improved patient outcomes. For instance, researchers are working on nano sensors that can detect cancer biomarkers in blood samples.

Energy and environment:

- More efficient solar cells: Nanomaterials are being used to improve the efficiency of solar cells, making them more cost-effective and sustainable. For example, researchers are using quantum dots to capture more sunlight and convert it into electricity.
- Water purification: Nanoparticles can be used to remove contaminants from water, such as bacteria and heavy metals. This can provide clean drinking water for people in areas with limited access.
- *Renewable energy storage*: Nanomaterials are being developed for more efficient and compact batteries and supercapacitors, essential for storing renewable energy sources like solar and wind power.

Electronics and computing:

- Smaller and faster transistors: Nanotechnology is enabling the development of even smaller and faster transistors, leading to more powerful and efficient microchips.
- Flexible and transparent electronics: Nanomaterials are being used to create flexible and transparent electronics, which could be used in new applications such as wearable devices and electronic displays.
- Quantum computing: Nanotechnology plays a crucial role in developing quantum computers, which hold the potential to solve complex problems that are currently intractable for classical computers.

These are just a few examples of the many advancements happening in nanotechnology. As research and development continue, we can expect even more exciting breakthroughs in the years to come.

Quote: "Thinking big, building small: Nanotechnology - where innovation meets the atom."