PROBLEM STATEMENTS
(Department of Metallurgical Engineering)

1.Utilizing and storing renewable energy resources.

Cost-effective storage of solar energy (including solar energy embodied in wind and ocean currents) to enable distribution at times of peak human demand (on rainy days) remains a critical issue. Development of reversible processes for energy storage and utilization that have rapid start-up and shut-down characteristics is therefore of prime importance. Develop an energy providing and storing system with maximum efficiency you can.

2.Production of Biodiesel from the waste oil

The sources of waste oil include vegetable oil, used motor oil, used transmission fluid etc. But the process of its safe disposal is not much known and considered. Suggest methods to get a healthy product by manipulating the chemicals in the waste oil and hence inventing an amiable method for its disposal and management.

3.E-CAR

Gear up, join the race and ace it! Here's an opportunity for applying the principles of chemical reaction engineering fluid mechanics and process control thereby creating dynamic avatar of your knowledge! E-Car is a model making competition which looks for creative minds among engineering students who can come up with innovative ideas to design a vehicle powered by non-conventional sources of energy. It aims to test your technical knowledge along with your creative skills.

4.Production of steel

Production of steel at an integrated iron and steel production plant is accomplished using several interrelated processes including coke production, sinter production, iron production, and steel production. Raw materials with intrinsic carbon contents, the primary resources for iron and steel production, can have material significance in the calculation of environmental impact.

5.Residential solar water heating system

The focus is to deliver an affordable package that homeowners can purchase and easily self-install of a solar based step-up water heater. The heater empowers homeowners to reduce their carbon footprint and feel pride in their work.