



# **SRINIVAS UNIVERSITY**

## **COLLEGE OF ENGINEERING & TECHNOLOGY(SUCET)**

**MUKKA-574146, Karnataka (India).**

### **SRINIVAS CENTRE FOR RESEARCH IN RENEWABLE ENERGY PHOTOVOLTAICS.**



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#### **Objectives:**

- To encourage research in the area of Renewable Energy.
- To contribute the nation on matters related to awareness, environment and renewable energy policy.
- To motivate the students to work in the area of renewable energy.
- To establish a network of research with other research institutions in the field of renewable energy.

#### **About the Research Area :**

Renewable energy sources includes wind power, solar power, hydro power, geothermal power and biofuels. The use of renewable energy has many potential benefits, including a reduction in greenhouse gas emissions, the diversification of energy supplies and a reduced dependency on fossil fuel markets (in particular, oil and gas). More than 100 countries now use solar PV. After hydro and wind power, PV is the third renewable energy source in terms of globally capacity. In 2014 worldwide installed PV capacity increased to 177 giga watts (GW), which is two percent of global electricity demand

A typical photovoltaic system employs solar panels, each comprising a number of solar cells, which generate electrical power. In Solar PV the direct conversion of sunlight to electricity occurs without any moving parts and pollution. Photovoltaic systems are also widely used as the power back-ups for the vehicles, aircrafts and satellites. The interaction of such a system with

different types of radiations and other particles may lead to the reduction of efficiency. So it is important to develop radiation resistant photovoltaic systems through the research works in this area.

**Work in Progress:**

As a part of the research work the comparative studies of effect of such irradiations on efficiency of polycrystalline solar cells will be done.

CdTe polycrystalline solar cells which were fabricated at UNAM, Mexico are being used for the studies. A part of electrical Characteristics studies were done at ISAC Bangalore. The research proposal for the beam time was presented at Inter University Accelerator Center (IUAC), New Delhi during 61<sup>st</sup> Accelerator Users Committee meeting in 2017 for the high energy Ion irradiations in different doses. The Proposal was accepted by the IUAC and a couple of shifts were allotted for the experimental work. As per the research plan heavy ion irradiations will be done at IUAC, New Delhi and electron irradiation will be carried out at Bhabha Atomic Research Center(BARC) Electron Beam Center, Kharghar.

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