


CENTRE FOR GREEN ENERGY TECHNOLOGY
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The research team of **Dr.Periyasamy THILAKAN** and **N. Tamilselvan** of Centre for Green Energy Technology (CGET) has invented a preparation method of **Nano-crystalline Indium Tin Oxide (ITO)** to obtain “LUMINESCENT NANOCRYSTALLINE INDIUM TIN OXIDE (ITO)” and filed an Indian patent Ref. No. 825/CHE/2014. The topic of the patent is “PREPARATION OF LUMINESCENT NANOCRYSTALLINE INDIUM TIN OXIDE (ITO)”. This invention will lead to apply the developed material to obtain UV-Light Emitting Diodes (UV-LED) with deeper UV emission in the UVB region due to its wide bandgap up to 4.32 eV. So, far there is no semiconductor available to emit light in this region of spectrum. Moreover the realization of UV-LED using the developed ITO nano-crystalline material can be effectively used to obtain high power white light emitters with better colour rendering index (CRI) for clear vision.


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The research team of **Dr.Periyasamy THILAKAN B.S. Akila and T. Balaganapathi** has invented a special preparation method of TiO_2 with modified dielectric strength and applied on processed Silicon substrates. This process found resulting in minimum reflectance from UVB region to the NIR region of spectrum. So, this process of “Preparation of Wideband TiO_2 Antireflection coating for Silicon Solar Cells” is filed an Indian patent Ref. No. 824/CHE/2014. Usually Silicon reflects UV-region of spectral light to 40~50% and lead the Silicon solar cell to absorb less photons in this region resulting in lower efficiency. Since the current invention minimizes the reflection losses in the UVB and UVA region of spectrum flat until to NIR region, the quantum yield of Silicon solar cell will be greatly enhanced and hence the output power of the Silicon solar cells will be more. Moreover, this invention will also result in higher output efficiency for Silicon solar cells even in the stray light condition.

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