

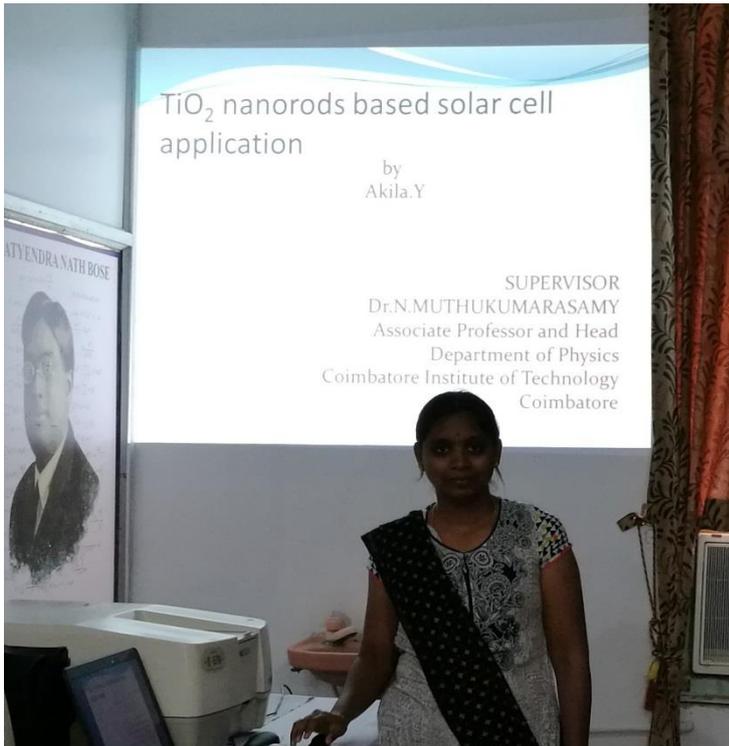
Weekly presentation schedule summary:

Name of the scholar: Y. Akila

Date: 20.06.2017

Title: TiO₂ nano rods for DSSC.

This talk was focussed on preparation and characterization of TiO₂ and transition metal doped TiO₂ nano rods for solar cell application based on both natural and commercial (N719) based dye as sensitizers.



Name of the scholar: M.R. Venkatraman

Date: 27.06.2017

Title: Blue TiO₂ nanostructures & TiO₂/RGO composites with enhanced visible region absorption for DSSC.

This work was focussed on photo anodes for dye sensitized solar cells. Where, F doped TiO₂ (blue TiO₂) and TiO₂/RGO composites were used as photo anodes for dssc. The introduction of fluoropolymers as F dopant into the TiO₂ matrix and its performance as photo anodes for dssc was the subject of interest of this talk also TiO₂/RGO (Reduced Graphene Oxide) composites

prepared through solvothermal method and its efficiency as photo anodes in dye solar cells were also discussed.

A JOINT INDO-NORWEGIAN COLLABORATIVE PROGRAMME

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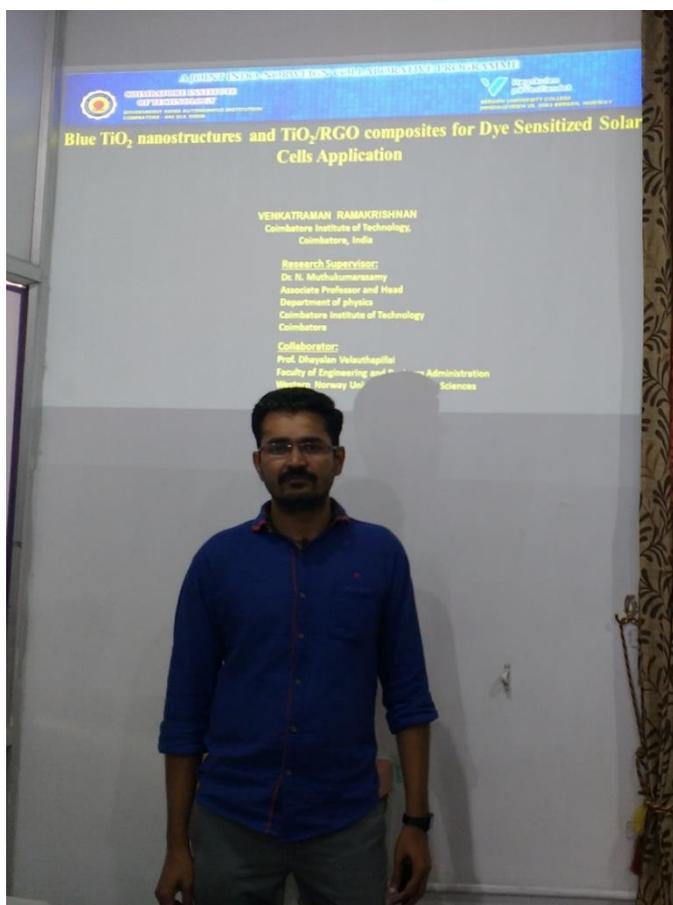
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Blue TiO₂ nanostructures and TiO₂/RGO composites for Dye Sensitized Solar Cells Application

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Name of the scholar: S. Yuvaraj

Date: 11.07.2017

Title: Plasma ion implantation assisted carbon dots incorporated hydroxylapatite.

This talk was focussed on improving the bio compatibility of Hydroxylapatite. Hydroxylapatite (HA), is a naturally occurring mineral form of calcium apatite with the formula $\text{Ca}_5(\text{PO}_4)_3(\text{OH})$ and it is used for several bio applications. Its biocompatibility can further improved by Carbon quantum dots incorporation using cold plasma technique. The uniqueness of the instrument used for the incorporation of carbon quantum dots by gas phase separation of acetylene was discussed.



Name of the scholar: P. Pavithrakumar

Date: 25.07.2017

Title: Perovskites

The rapid improvement of perovskite solar cells has gained much attention in the photovoltaics world and of huge interest to the academic community. A perovskite solar cell is a type of solar cell which includes a perovskite structured compound, most commonly a hybrid organic-inorganic lead or tin halide-based material, as the light-harvesting active layer. This talk was focussed on usage of divalent material such as manganese as a replacement to toxic lead were discussed.



Name of the scholar: D. Vinoth Pandi

Date: 01.08.2017

Title: CdSe Quantum Dots Decorated ZnO Nano Structure for Solar Cell Application

Quantum dot (QD) has emerged as a promising agent in the field of solar energy conversion due to its distinct size-dependent optoelectronic characteristics. In this type of solar cell architecture, high performance is expected due to multiple exciton generation effect and tuning of energy band gap in QD. Usage of 1D materials has several advantage such as reduced remombination rate, as the path way of electron is more defined than a usual nano particles based solar cells. In this talk CdSe quantum dots were used as sensitizers over ZnO nano rods, its solar cell efficiency were discussed.



Name of the scholar: M. Shobana

Date: 08.08.2017

Title: Role of electron transport layers in perovskite based solar cells

Thin-film photovoltaics based on organic–inorganic hybrid perovskite light absorbers have recently emerged as a promising low-cost solar energy harvesting technology. A great deal of effort is required in designing complex nanostructures which are effective as ETL/ETM to achieve high open circuit voltage (V_{oc}) and high fill factor (FF) in PSCs. In this talk different parameters of electron transport layer towards improvement in stability and efficiency of perovskite solar cells were discussed.

