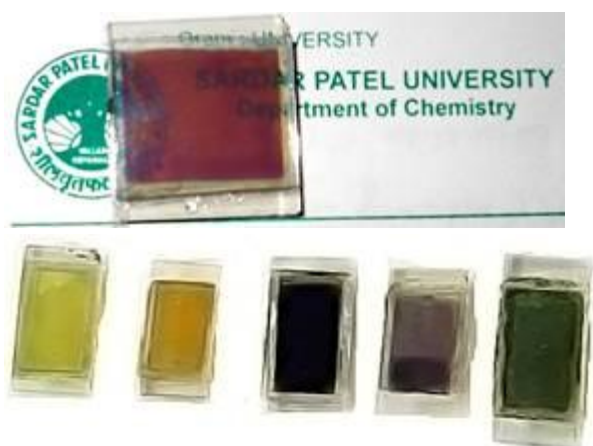


Low cost Dye Sensitized Solar Cell Technology : An alternative of Silicone Based Solar Cell

Dye Sensitized Solar Cell (DSSC), A third generation photovoltaic technology has emerged as a subtle alternative for the contemporary Silicon based technology in terms of production and costing. Under the first phase of the project, PI has developed low cost purely organic dye molecules as a light harvesting material in dye solar cell. These dyes are easy to synthesize in laboratory as well in bulk without using precious metals either as catalyst or in dye itself.



The DSSC devices were fabricated using this dye molecule and achieved more than 7% solar to electricity conversion efficiency under the illumination of sunlight and filled Indian pattern on it (Patent file no. 2609/MUM/2013 dated 7th August 2013). It has been clear from these results that there is plenty of rooms in this technology so PI has planned to go a step forward in this area to develop first indigenous dye solar cell based portable battery chargers. As a part of the extension of the first phase of the project, a project with objective of fabrication of device with 5 cm² area is under progress. Moreover, DSSC can be fabricated on the flexible plastic substrate to yield a flexible solar cell for many indoor and outdoor applications. Recently, DSSC market has been concentrated on the Building Integrated Photovoltaic (BIPV) due to vivid color and designs imparted by DSSC. Hence, it is the high time for industry to commercialize such kind of technology in India where there is a plenty of sun light.