

## Electron Life time Enhancement of Dendritic Organo-sensitizers for Dye-sensitized Solar Cells

최석균, 전병철, 안희진, 이도경<sup>1</sup>, 김재홍<sup>2,\*</sup>  
영남대 화학공학부; <sup>1</sup>대구가톨릭대 에너지신소재공학과;  
<sup>2</sup>영남대 에너지신소재공학과  
(jaehkim@ynu.ac.kr\*)

Dye-sensitized solar cell (DSSC) has attracted much attention due to their high performance and easy manufacturing process. Many kinds of organic dyes (Metal-Free dyes) have been investigated as a photosensitizer in Dye-sensitized solar cell (DSSC) to increase the photovoltaic performance of the DSSC. The mechanism of DSSC is based on the injection of electrons from the photosensitizers into the conduction band of nano-crystalline TiO<sub>2</sub> or ZnO. The oxidized photosensitizers are reduced by the electron injection from electrolyte. Thus, the photosensitizer plays an important role in capturing the photons and generating the electron/hole pairs, as well as transferring them to the interface of the semiconductor and the electrolyte, respectively.

In this paper, we have studied on synthesis and characterization of dendritic organic dyes with different number of electron acceptor / anchoring moieties in the end of dendrimer. The photovoltaic performances and the incident photon-to-current (IPCE) of these dyes were measured to evaluate the effects of the dendritic structure on the open-circuit voltage and the short-circuit current.