

## TiO<sub>2</sub> Mesoporous Thick Films with Large-Pore Structure for Solid-State Dye-Sensitized Solar Cell

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Micron thick, well-organized mesoporous TiO<sub>2</sub> films with high porosity and good connectivity were developed via the sol-gel process using an amphiphilic graft copolymer. The performances of ssDSSCs fabricated with organized mesoporous TiO<sub>2</sub> films were always higher than that attained with a random mesoporous TiO<sub>2</sub> film. The improved performance mostly results from the improved interfacial contact of electrode/electrolyte due to the large pore size and wellorganized mesoporous structure. It should be noted that ssDSSCs using HTM as a conducting polymer have mostly been fabricated using in situ photoelectropolymerization to allow sufficient penetration of the conducting polymer into the nanopores of the TiO<sub>2</sub> photoelectrode. Our approach is simple and cost effective compared to in situ photoelectropolymerization.

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