

**Formation of hole-pattern TiO₂ layer for
Dye-sensitized solar cell's photoelectrode with
SU-8 photoresist**

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Preparing the DSSCs which is capable of better penetration electrolyte to photoelectrode is effective to obtain higher DSSCs performance. However, flat structure photoelectrode has so far restriction its low surface area to easy penetrated electrolyte for the better DSSCs performance. For enhancement of cell performance while less using dye, we suggest a simple process to fabricate hole pattern TiO₂ layer that involves the predeposition of SU-8 photoresist on FTO, followed by the deposition of nanocrystalline TiO₂ and continuous calcinations process for elimination of SU-8 photoresist. The DSSCs based on the flat structure photoelectrode showed a cell performance of 4.57%, which is a little higher than of the DSSCs fabricated using a hole pattern structure TiO₂ photoelectrode. However, the hole pattern structure photoelectrode showed better cell performance per amount of dye loading to photoelectrode than flat structure photoelectrode. It suggests that hole pattern structure photoelectrode based DSSCs can potentially improve transmitted through the FTO and penetration of electrolyte to photoelectrode although less amount of dye to photoelectrode.