

Nano-porous solid-state photovoltaic cell sensitized with tannin

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Abstract. Tannin and related polyphenolic substances strongly surface chelate with TiO_2 sensitizing nano-porous films of TiO_2 to the visible spectrum. The photovoltaic cell nano-porous n- TiO_2 /tannin/p-CuI generates highly stable photovoltages. The result is explained as the effectiveness of the Ti^{IV} -tannin complex on the surface of TiO_2 in preventing short-circuiting across the TiO_2 /CuI barrier.