Supporting Information

Functionalization of nanomaterial by non-thermal large area atmospheric pressure plasmas: application to flexible dye-sensitized solar cells

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For the preparation of the TiO_2 paste that contains ethyl cellulose, 3 g of TiO_2 nanoparticles, 0.5 ml of acetic acid, 20 mL of ethanol, 2.5 mL of deionized water, 9.4 mL of alpha-terpinol, 0.5 g of ethyl cellulose were mixed by using three rolls milling machine. In this experiment, DSSC performance for TiO_2 film based on ethyl cellulose paste is slightly higher than the other counterparts. This indicates that the APP treatment is capable of decomposing polymeric binders such as ethyl cellulose.

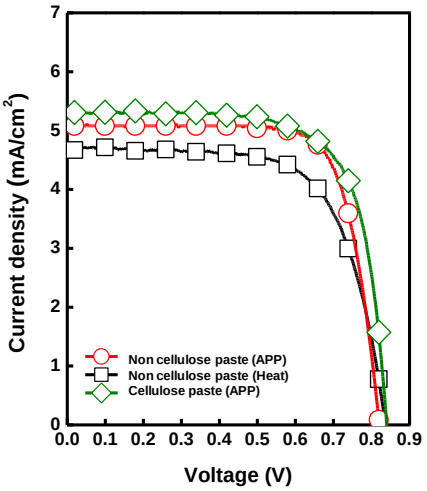

Figure S1. Photocurrent density-voltage characteristic curves of the APP treated DSSCs and heat treated DSSC (AM 1.5G). The thickness of each TiO_2 film was about 2.2 μm.

Condition / Parameter	Heat (non cellulose paste)	APP (non cellulose paste)	APP (cellulose paste)
Jsc (mA/cm^2)	4.71	5.09	5.30
Voc (V)	0.84	0.82	0.84
FF (%)	67	75	72
Efficiency (%)	**2.67**	**3.15**	**3.21**

Table S1. Photovoltaic performance of the APP treated DSSC and heat treated DSSC under 1 sun illumination (AM 1.5G).