

## Highly Durable and Flexible Dye-Sensitized Solar Cells Fabricated on Plastic Substrates: PVDF-Nanofiber-Reinforced TiO<sub>2</sub> Photoelectrodes

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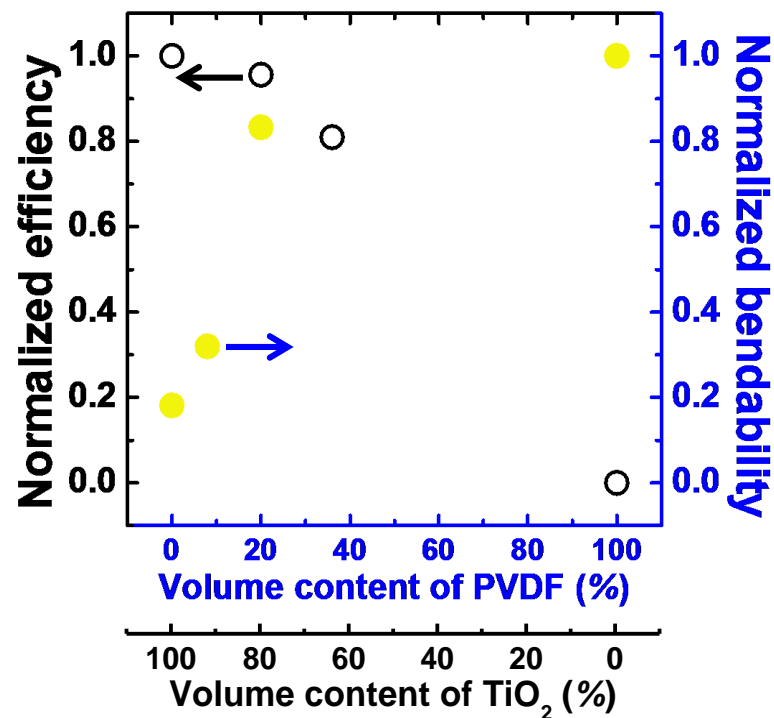
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**Table S1.** Photovoltaic properties of composite films (CF) and binder-free films (BF) together with the cell performance on different substrates. The dye loading amounts of CF and BF were also listed. The fitted and calculated results of impedance spectra of CF and BF based cells under one sun illumination and open circuit condition.

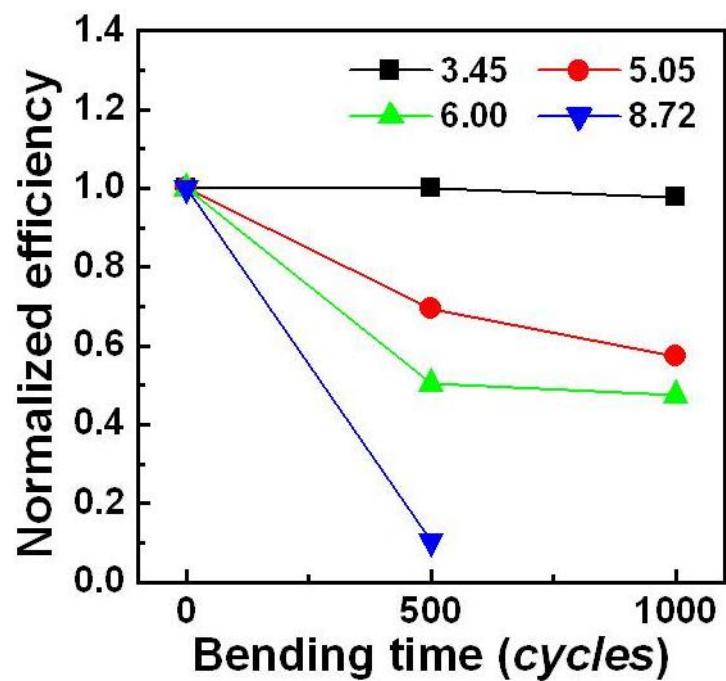
Sample	$J_{SC}$ (mA/cm <sup>2</sup> )	$V_{OC}$ (mV)	$FF$ (%)	$\eta$ (%)	Thickness ( $\mu$ m)	Amount of dye loading ( $\times 10^{-5}$ mol/cm <sup>3</sup> )	Fitting results of EIS analysis					
							$R_S$ ( $\Omega$ )	$R_1$ ( $\Omega$ )	$R_2$ ( $\Omega$ )	$C_{\mu}$ ( $\times 10^{-3}$ F)	$\tau$ (ms)	$W_R$ ( $\Omega$ )
BF	9.77	758	67.5	5.00	6.17	13.68	2.05	1.12	4.83	0.48	2.3	4.61
CF	8.58	806	69.2	4.78	5.97	12.97	2.09	2.26	4.05	1.78	7.2	3.06
FTO/glass	9.83	773	68.8	5.23	12.29							
ITO/PET	7.78	785	66.1	4.04	10.62							

**Table S2.** Photovoltaic properties together with dye loading amount of composite films based cells with different films thickness on FTO/glass substrate.

Thickness ( $\mu\text{m}$ )	$J_{SC}$ ( $\text{mA}/\text{cm}^2$ )	$V_{OC}$ (mV)	$FF$ (%)	$\eta$ (%)	Amount of dye loading ( $\times 10^{-8} \text{ mol}/\text{cm}^2$ )
2.82	5.86	838	69.3	3.40	5.13
5.97	8.58	806	69.2	4.78	9.10
12.29	9.83	773	68.8	5.23	16.4



**Figure S1.** The relationship between efficiency and bendability as a function of volume content ratio of PVDF/TiO<sub>2</sub> in composite films. The efficiency was normalized with that of cell based on pure TiO<sub>2</sub> films. The bendability was evaluated from the efficiency before and after bending for 1000 times on ITO/PET. The black open circle stands for normalized efficiency and the blue solid sphere is for normalized bendability.



**Figure S2.** The effect of electrode thickness on the cell efficiency as a function of bending times. The efficiency was determined by varying film thickness ( $\mu\text{m}$ ) of composite films under different bending times. The efficiency was normalized with that before bending on ITO/PET.