BEILSTEIN JOURNAL OF NANOTECHNOLOGY

Supporting Information

for

Influence of thickness and morphology of MoS_2 on the performance of counter electrodes in dye-sensitized solar cells

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Beilstein J. Nanotechnol. **2022,** *13,* 528–537. doi:10.3762/bjnano.13.44

Additional experimental data

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AFM and electrical conductivity characterization of devices

The AFM method was performed using a FlexAFM (Nanosurf, Switzerland) under ambient conditions using a cantilever type NCLR. The Electrical conductivity of the MoS_2 films deposited on the FTO substrates was measured with a Keithley model 2400 multisource meter at room temperature.

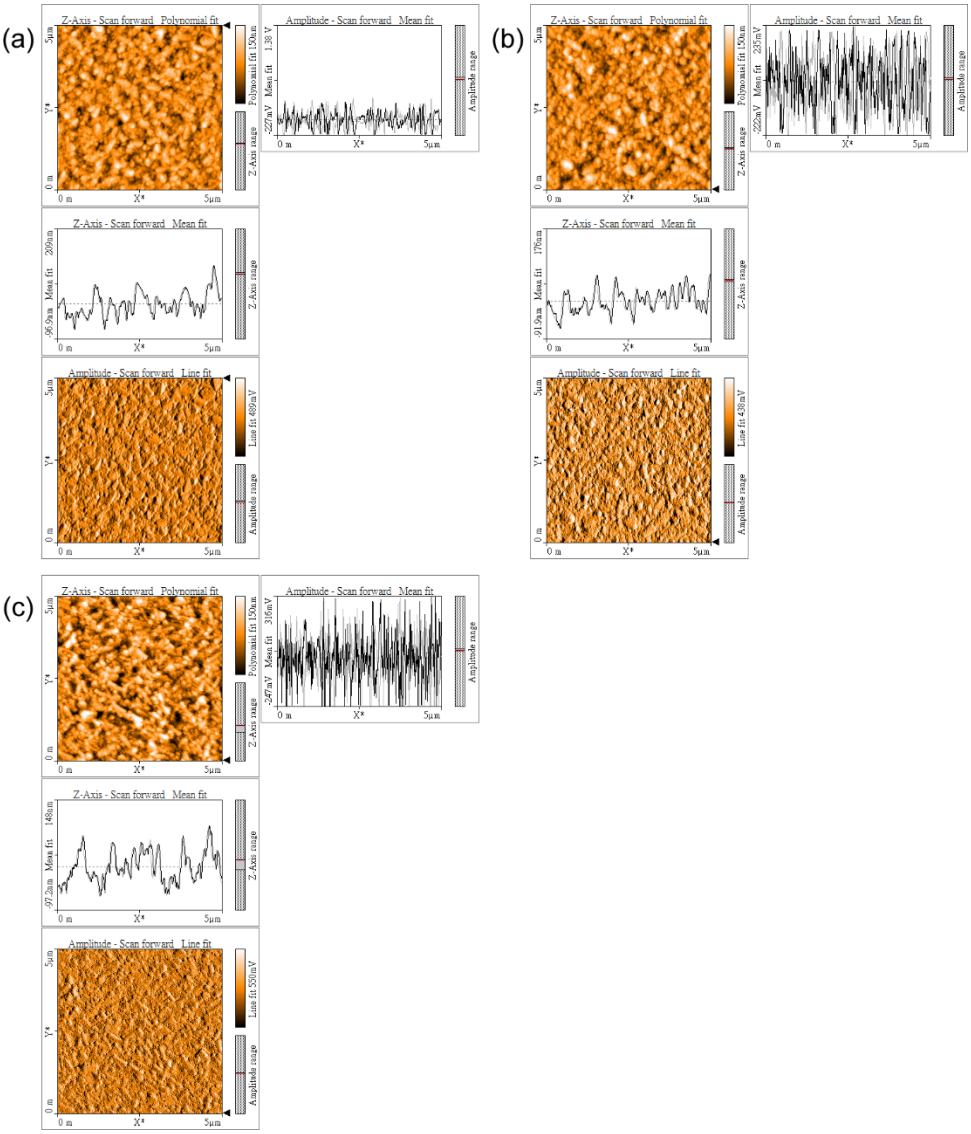

Figure S1: AFM images of (a) MoS_2-1.25/FTO, (b) MoS_2-2.5/FTO, and (c) MoS_2-5.0/FTO.

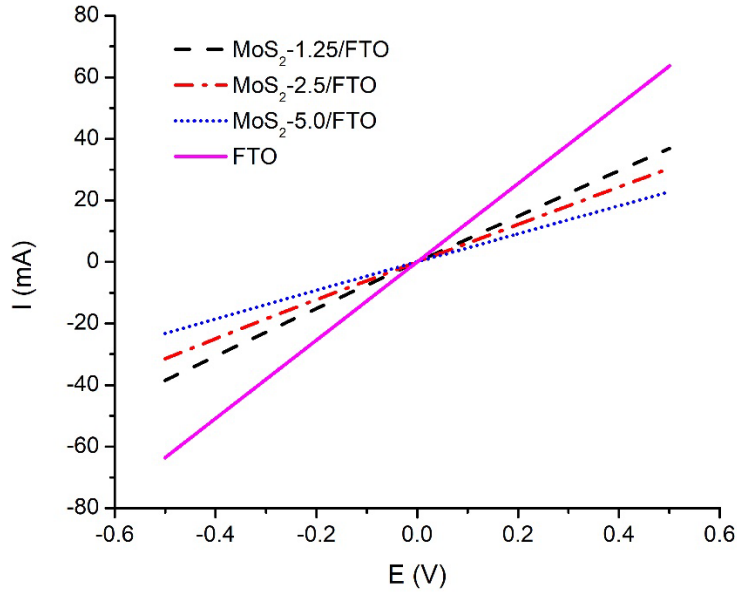

Figure S2: Current–voltage (*I–V*) plots of MoS_2 thin films compared to that of the FTO substrate.

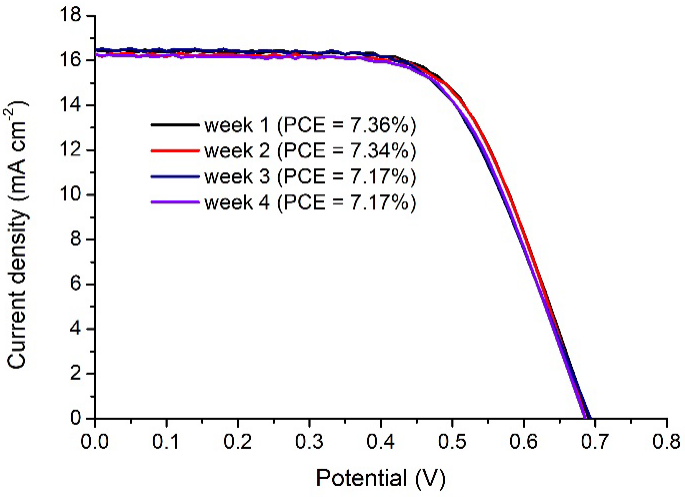

Figure S3: Photovoltaic performance of the DSSCs fabricated from MoS_2-1.25/FTO over four weeks of testing.

Table S1: AFM image roughness and *I–V* electrical conductivity of the MoS_2 thin films.

Sample	AFM-images roughness		*I–V* electrical conductivity ($mS \cdot cm^{-1}$)
	average roughness (S_a, nm)	root mean square roughness (S_q, nm)	
MoS_2-1.25	19.111	23.895	75
MoS_2-2.5	19.822	24.981	61
MoS_2-5.0	24.179	30.443	46