Supporting Information

Facile Preparation of 3D MoS_2 Aerogels for Highly Efficient Solar Desalination

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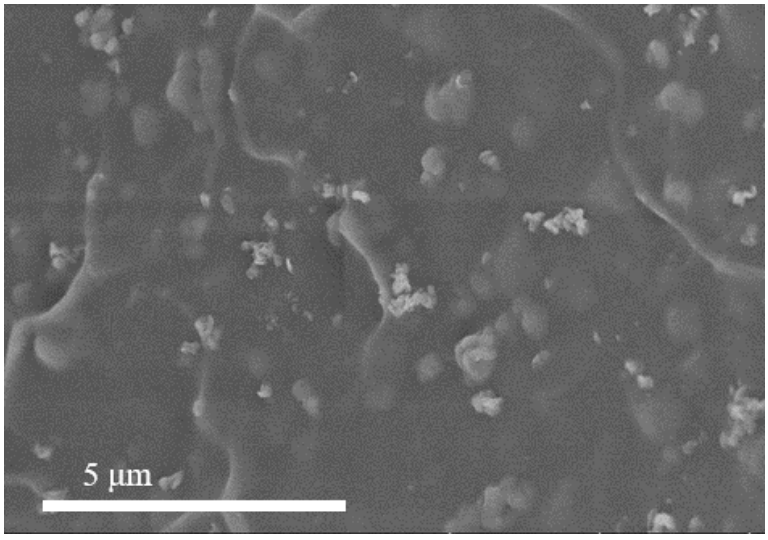

Figure S1. The location of functionalized MoS_2 nanosheets in the 3D MoS_2 aerogels.

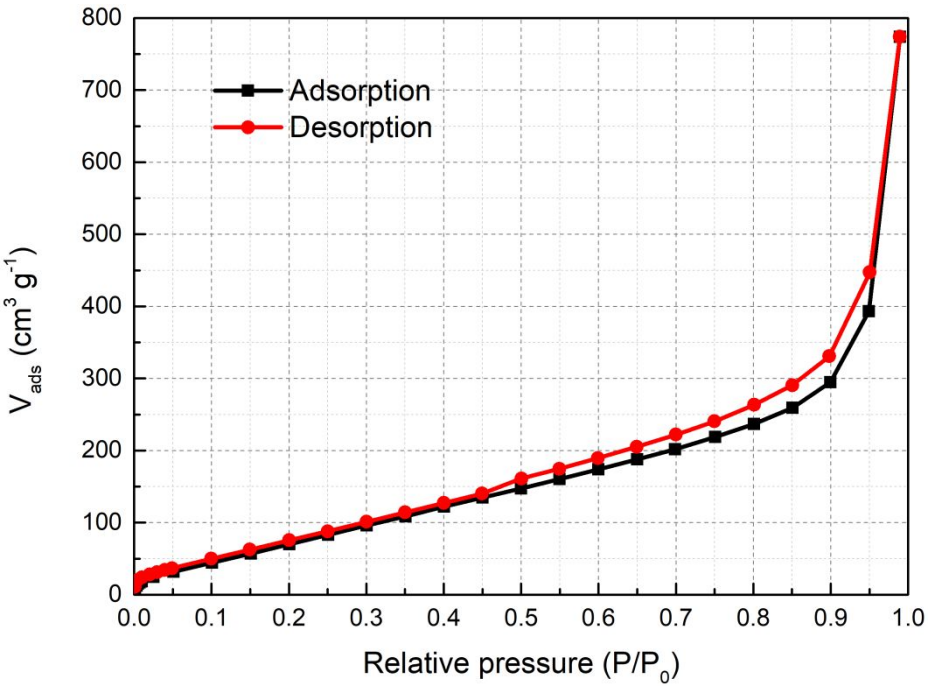

Figure S2. N_2 adsorption/desorption isotherm of MoS_2 aerogels prepared from the functionalized MoS_2 nanosheets.

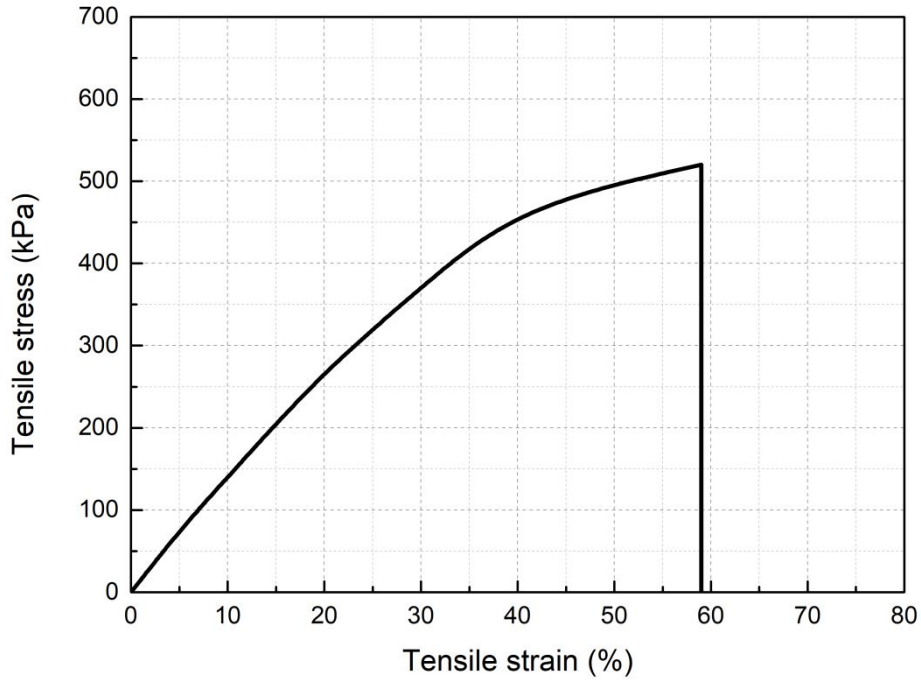

Figure S3. Tensile stress-strain curve of the 3D MoS_2 aerogel.

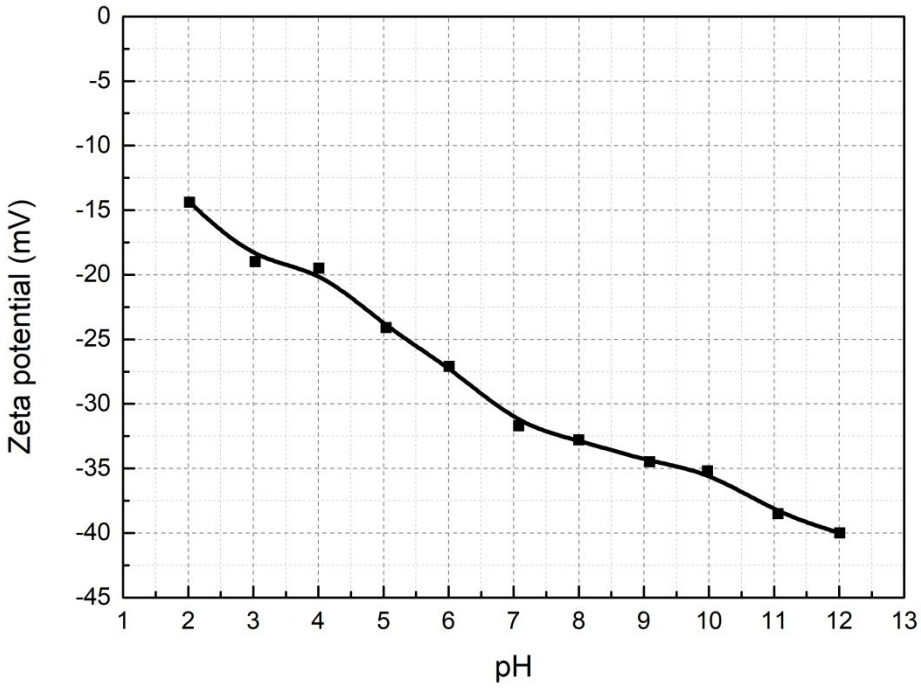

Figure S4. Zeta potentials of single MoS_2 nanosheets within the wide pH range of 2.0-12.0.

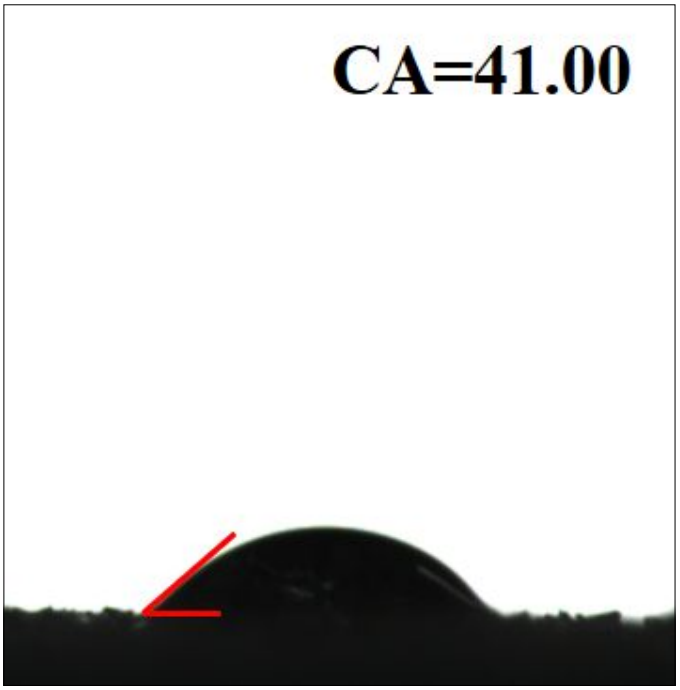

Figure S5. Contact angle of the 3D MoS_2 aerogel.

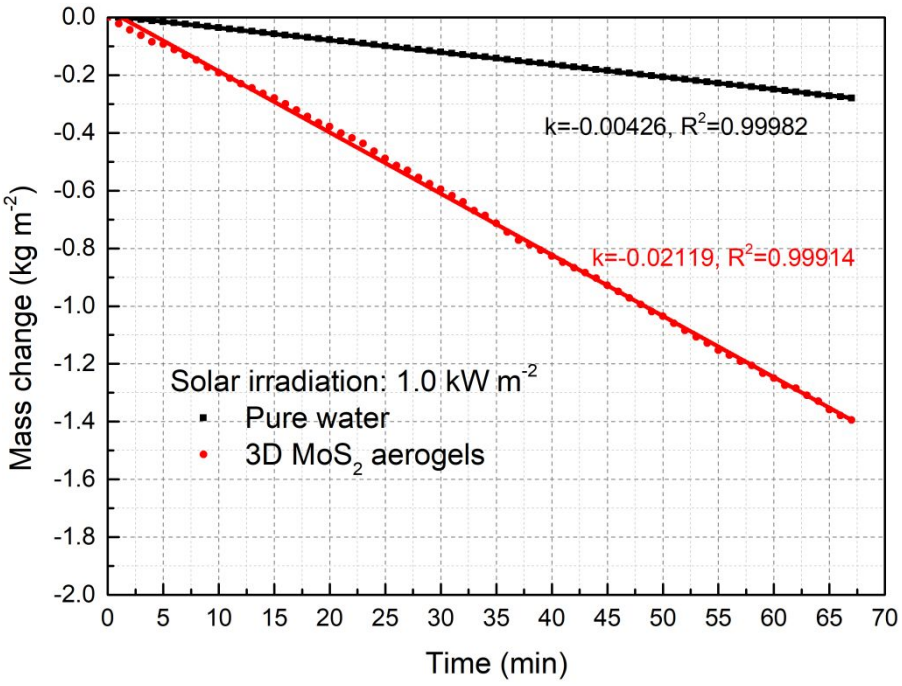

Figure S6. Linear fitting results of the time-dependent mass change of water with the 3D MoS_2 aerogels and pure water under solar irradiation of 1.0 kW m^{-2}.

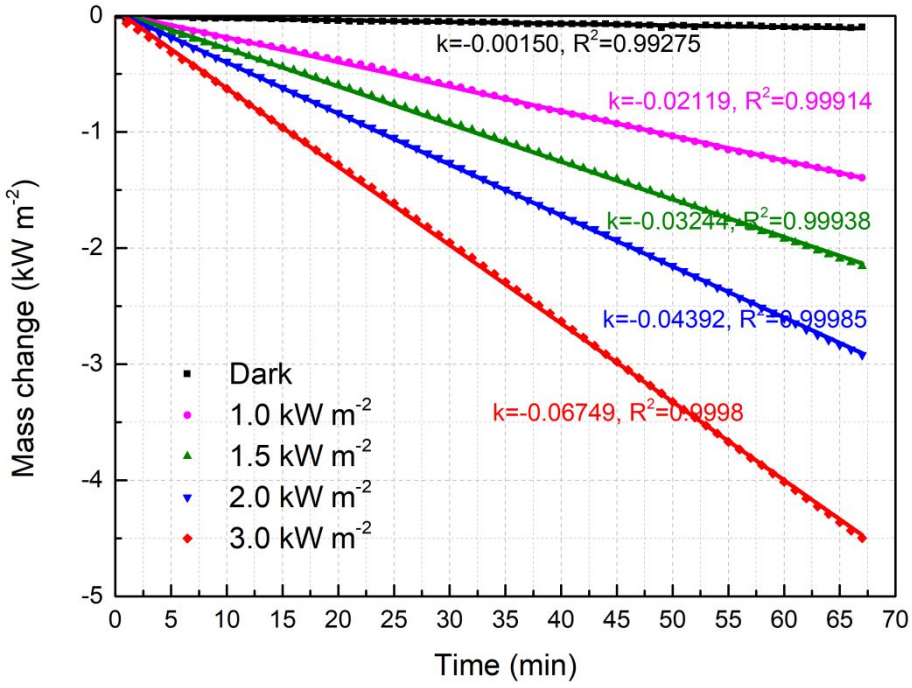

Figure S7. Linear fitting results of the time-dependent mass change of water with the 3D MoS_2 aerogels under solar irradiations of 0, 1.0, 1.5, 2.0 and 3.0 kW/m^2.

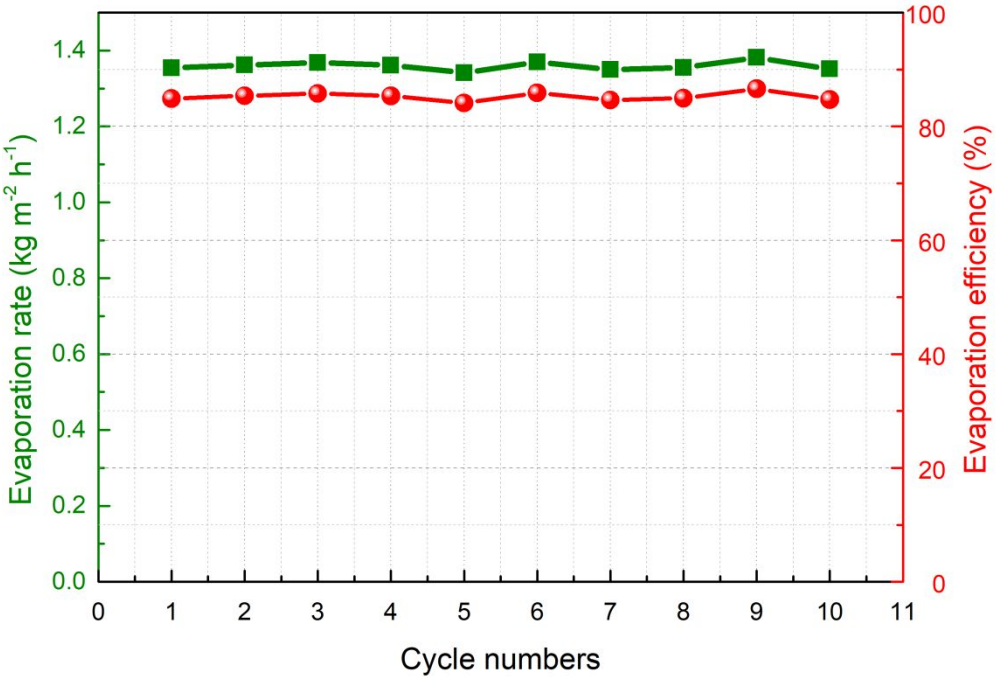

Figure S8. Cycling performance of MoS_2 aerogels under solar irradiation of 1.0 kW m^{-2}.

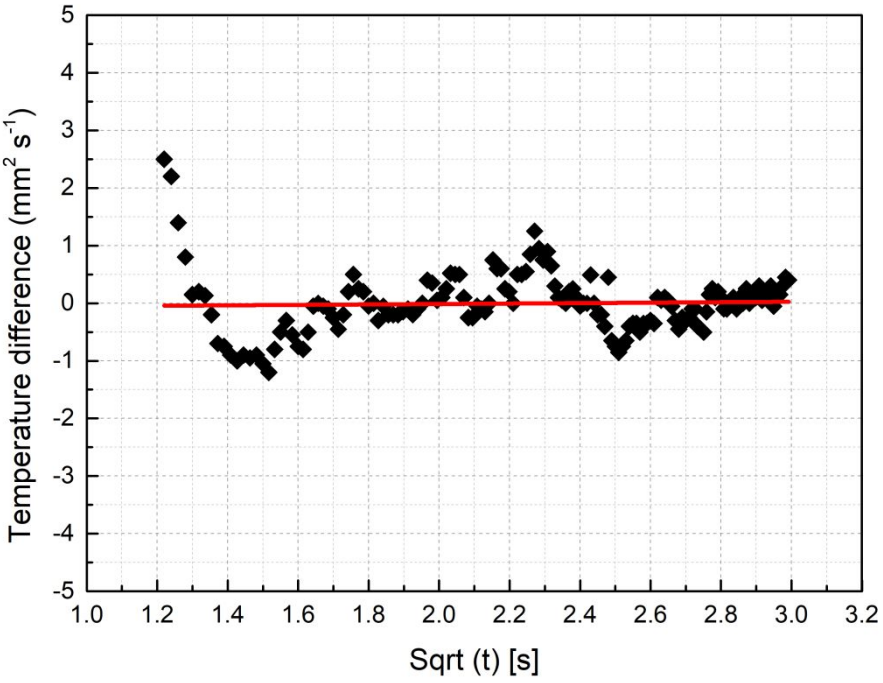

Figure S9. Residual plot of the thermal conductivity of the 3D MoS_2 aerogel based on the transient plane source method.

Table S1 Calculation details of the evaporation efficacies under 1.0-3.0 kW m^{-2}.

P_{in} (Incident solar power, kW m^{-2})	T_0 (Initial temperature, K)	T (Temperature of vaporization, K)	L_v (latent heat of vaporization, $\times 10^6$ J kg^{-1})	Q (Sensible heat of water, $\times 10^6$ J kg^{-1})	ṁ (Evaporation rate, kg m^{-2} h^{-1})	η (Evaporation efficiency, %)
1.0	295	315	2.409	0.0836	1.27	88.0
1.5	295	322	2.397	0.1129	1.95	90.5
2.0	295	325	2.391	0.1254	2.64	92.1
3.0	295	335	2.375	0.1672	4.05	95.3

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