ADVANCED SUSTAINABLE SYSTEMS

Supporting Information

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All Natural, High Efficient Groundwater Extraction via Solar Steam/Vapor Generation

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Supplementary Information

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Department of Materials Science and Engineering, University of Maryland, College Park, MD 20742, USA

1. Evaporation rates *vs* soil humidity

We compared the performance of the solar steam generation device operated in different soil humidity by measuring the evaporation rate of the device extracting water from soil with normal humidity and directly from water under 1 sun irradiation. As shown in Fig. S1, the evaporation rate of the device operated in water increases much faster than that of the device extracting water from soil during the initial 20 minutes, while at the steady state, the evaporation rates of the devices are similar. These results indicate that in general, the evaporation efficiency is not strongly dependent on the soil humidity, which is also consistent with the fact that the efficiency of the device extracting water from soil with normal humidity is comparable to that of the devices operated on surface water, even under 10 sun, as shown in Fig. 4. This is because root has great capability to extract water from soil and can supply sufficient water for evaporation.

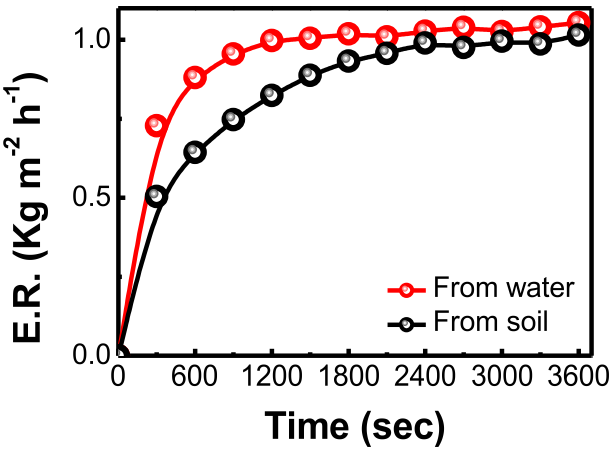

Figure S1: Evaporation rate comparison of the solar steam generation device extracting water from soil with normal humidity and directly from water under 1 sun irradiation.