Electronic Supplementary Material (ESI) for Soft Matter.

Water repelling behavior of 1-D hematite nano-network

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Supplementary data

Fig. S1, the as-grown pristine hematite nanorods have uniformly grown on substrate with a diameter of about 15 ± 5 nm.

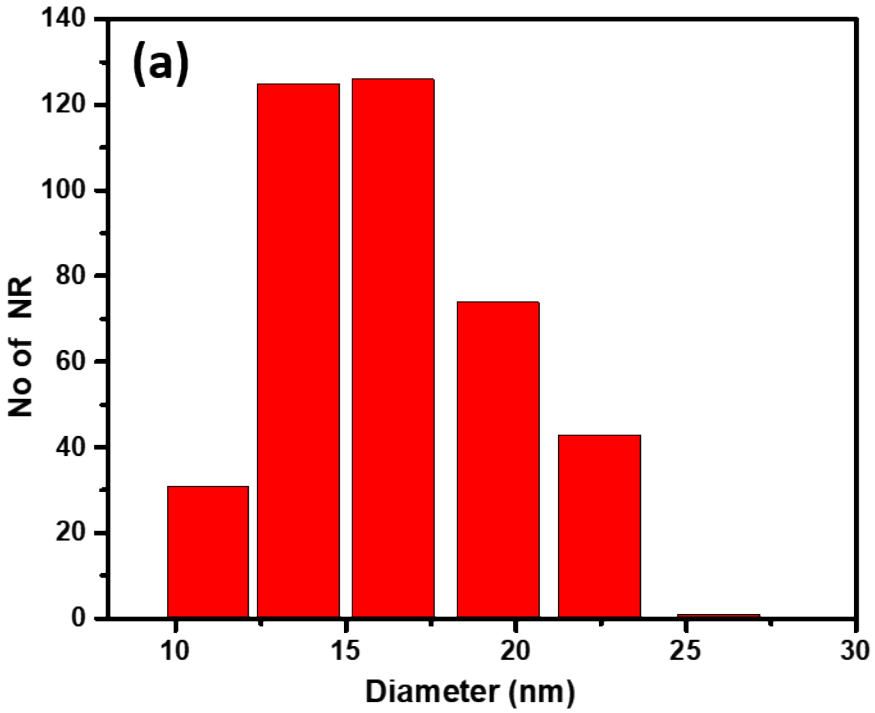

Fig. S2, the as-grown pristine hematite nanorods have uniformly grown on substrate with a length about 75 ± 10 nm.

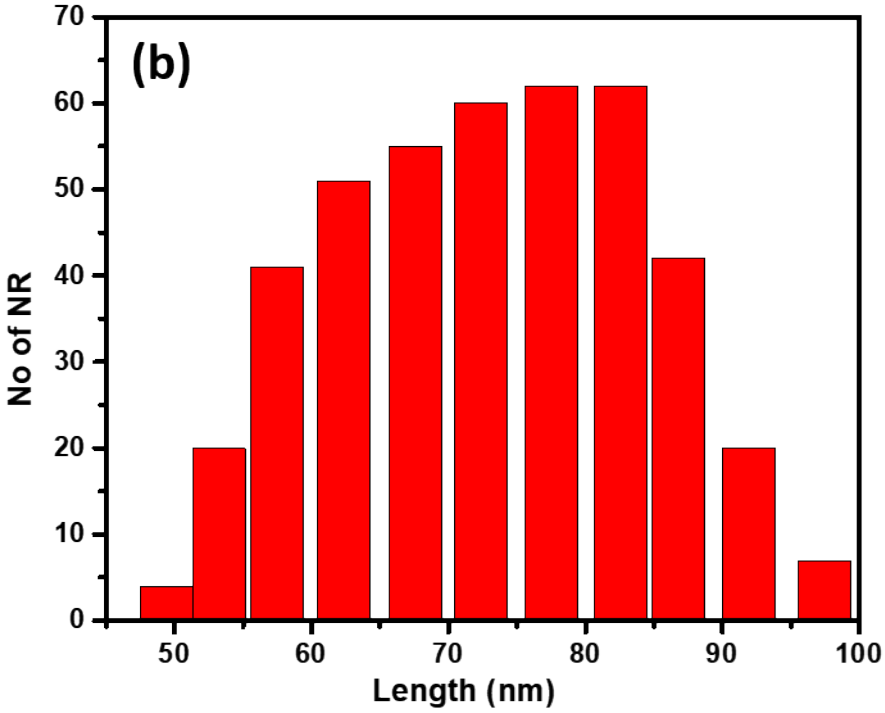

Fig .S3, the energy-dispersive X-ray spectra (EDX) confirm the presence of Fe and O in the pristine sample.

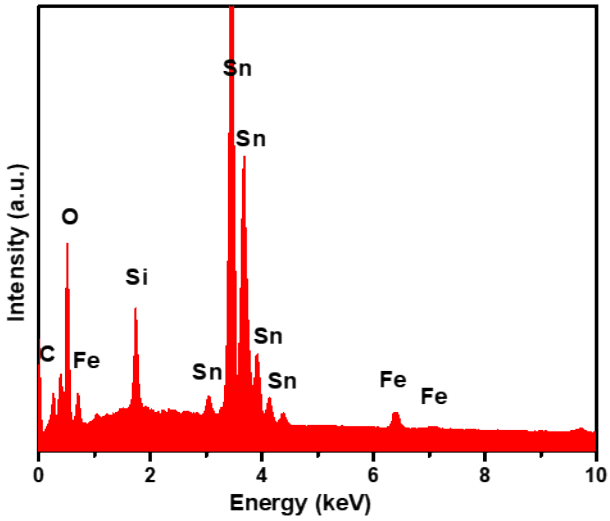

Fig .S4, the energy-dispersive X-ray spectra (EDX) confirm the presence of Fe and O in the irradiated sample at the ion fluence of 5×10^{16} ions.cm^{-2}.

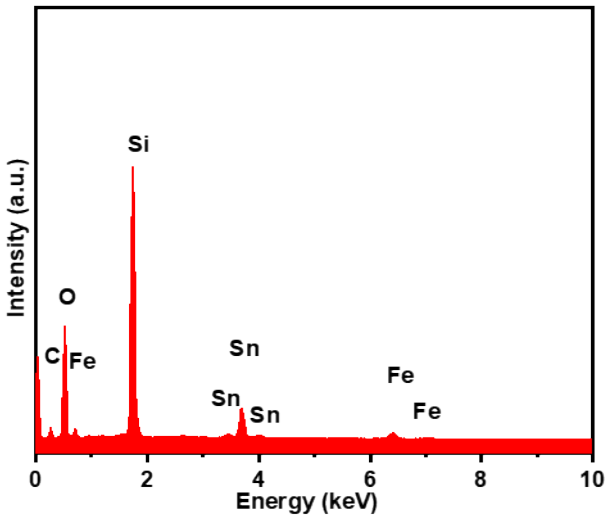

Fig .S5, the irradiated nano-network contains pores with sizes ranging from 10 to 100 nm at ion fluence of 3×10^{16} ions.cm^{-2}.

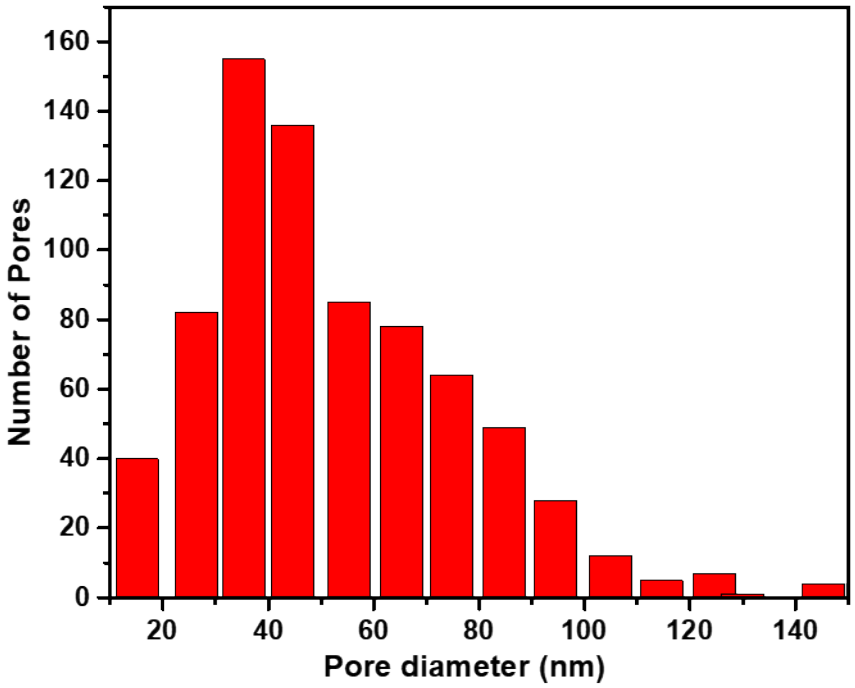

Fig .S6, I-V characteristic of the pristine sample (black) and 5 keV Ar^{+} ions used at ion fluences of 1×10^{16} (blue), 3×10^{16} (red), and 5×10^{16} ions.cm^{-2} (green). The calculated electrical conductivity for pristine samples is 1.09 Sm^{-1}. The samples were systematically irradiated with 5 KeV Ar^{+} at fluences 1×10^{16}, $3\times10^{16,}$ and 5×10^{16} ions.cm^{-2} and they yield current in the range -0.014 to 0.013 µA, -0.023 to 0.022 µA, and -0.039 to 0.031 µA in the same range of voltage and the corresponding conductivities are 1.12 Sm^{-1}, 2.12 Sm^{-1}, and 3.01 Sm^{-1} respectively.