nanomaterials

MDPI

Supplementary Materials

Evaluating the Effect of Varying the Metal Precursor in the Colloidal Synthesis of $MoSe_2$ Nanomaterials and Their Application as Electrodes in the Hydrogen Evolution Reaction

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Supplementary Information

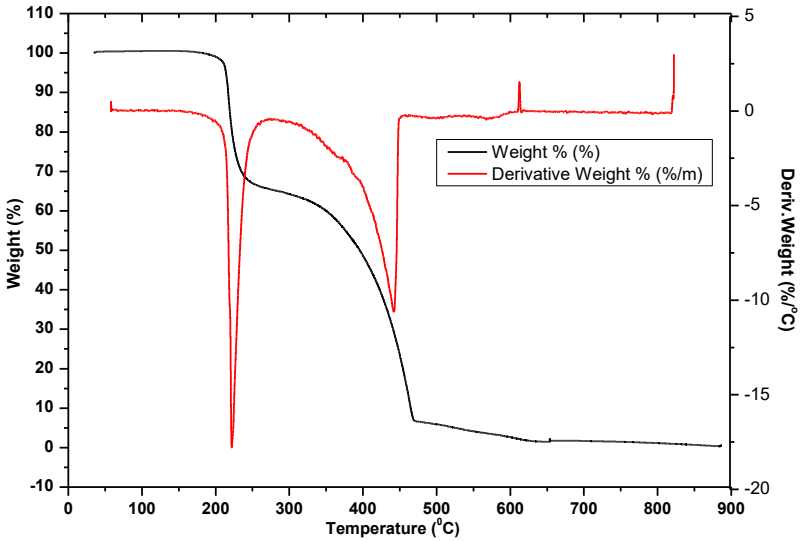

Figure S1. TGA of selenourea showing the decomposition of the compound to H_2Se and the carboamide ($C(NH)_2$) at ~220 °C.

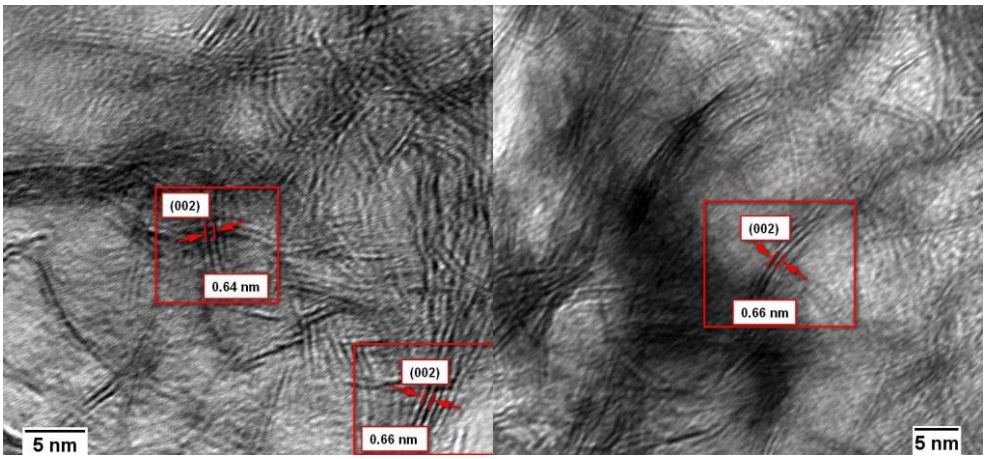

Figure S2. HRTEM images of nanosheets synthesized at 30 min, showing the interlayer spacing of the nanosheets. The d-spacing of the lattice fringes can be used to determine whether the synthesized nanosheets are multi-layer or monolayer nanosheets. The d-spacing of the nanosheets was determined to be ~0.66 nm which is the d-spacing of the (002) lattice plane in multi-layer nanosheets. This confirms that the nanosheets at 30 min are indeed multi-layer.

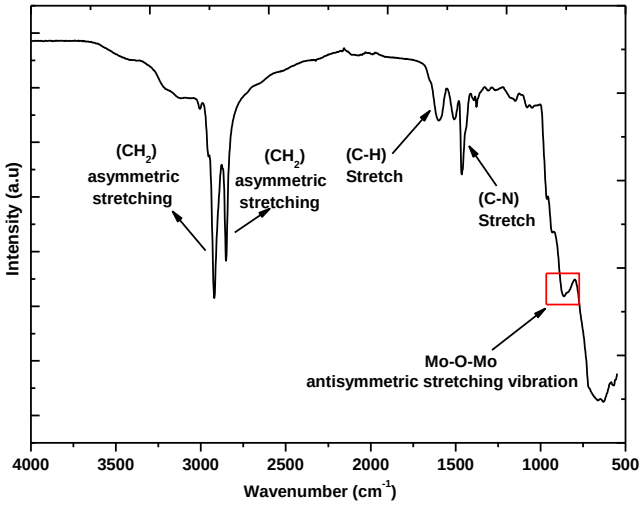

Figure S3. The FTIR spectrum of the product obtained when H_2MoO_4 is heated in oleylamine at 300 °C.

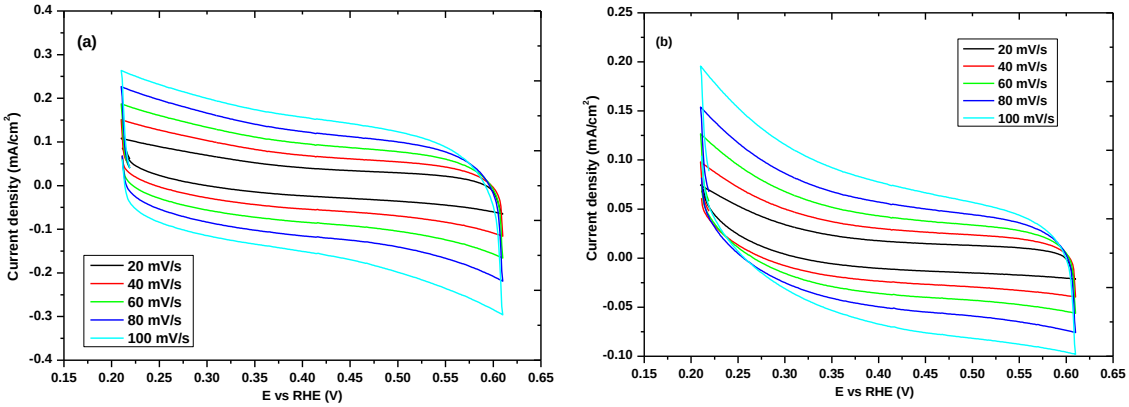

Figure S4. CV curves of (**a**) $MoSe_2$-nanosheets and (**b**) $MoSe_2$-nanoflowers at scan-rates of 20, 40, 60, 80 and 100 mV/s.

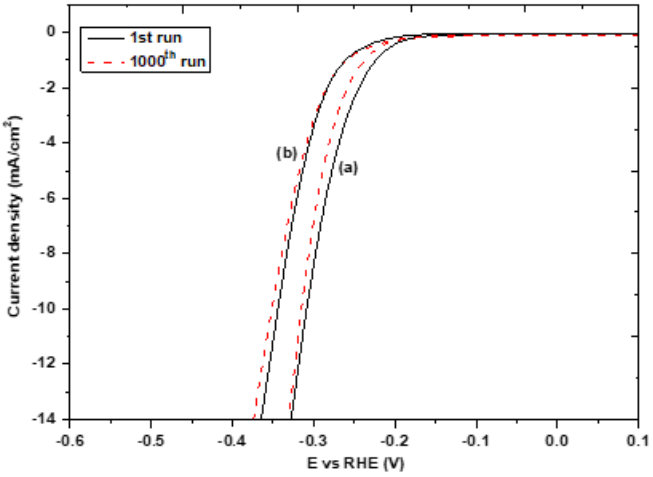

Figure S5. LSV curves of (**a**) $MoSe_2$-nanoflowers and (**b**) $MoSe_2$-nanosheets before and after a 1000 cycles of LSV.