

Supporting Information

Large-scale Fabrication and Mo Vacancy-induced Robust Room-temperature Ferromagnetism of MoSe₂ Thin Films

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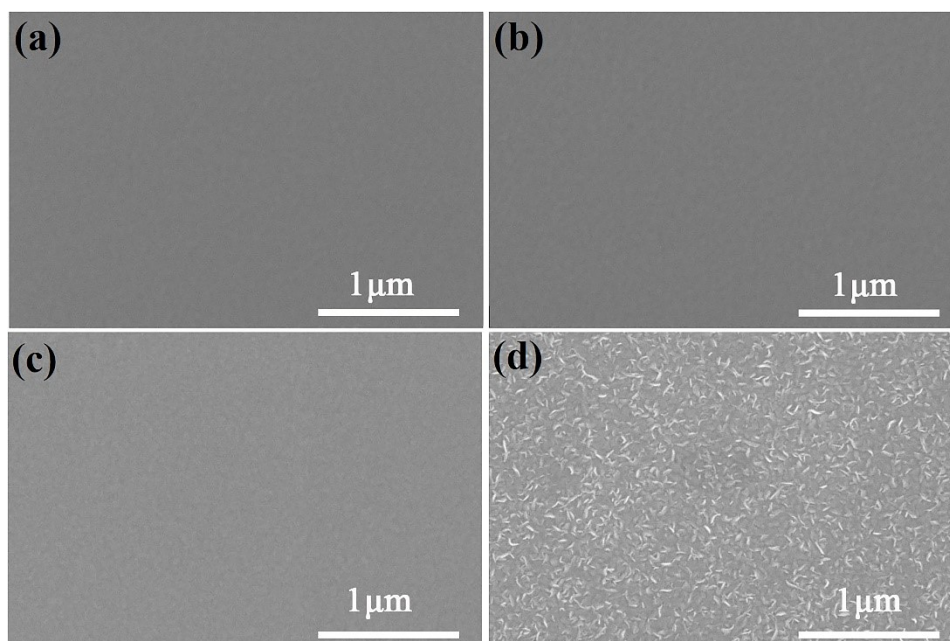


Fig. S1. SEM characterizations of the MoSe₂ thin films prepared at different temperatures. (a-d) The high-resolution top-view SEM images of the MoSe₂ thin films prepared at 770 °C (Z1), 800 °C (Z2), 850 °C (Z3) and 900 °C (Z4), respectively. (a) Z1, (b)Z2 and (c) Z3 all exhibit highly uniform smooth surface, while (d) Z4 displays evenly-distributed small willow leaf-like structures on the surface.

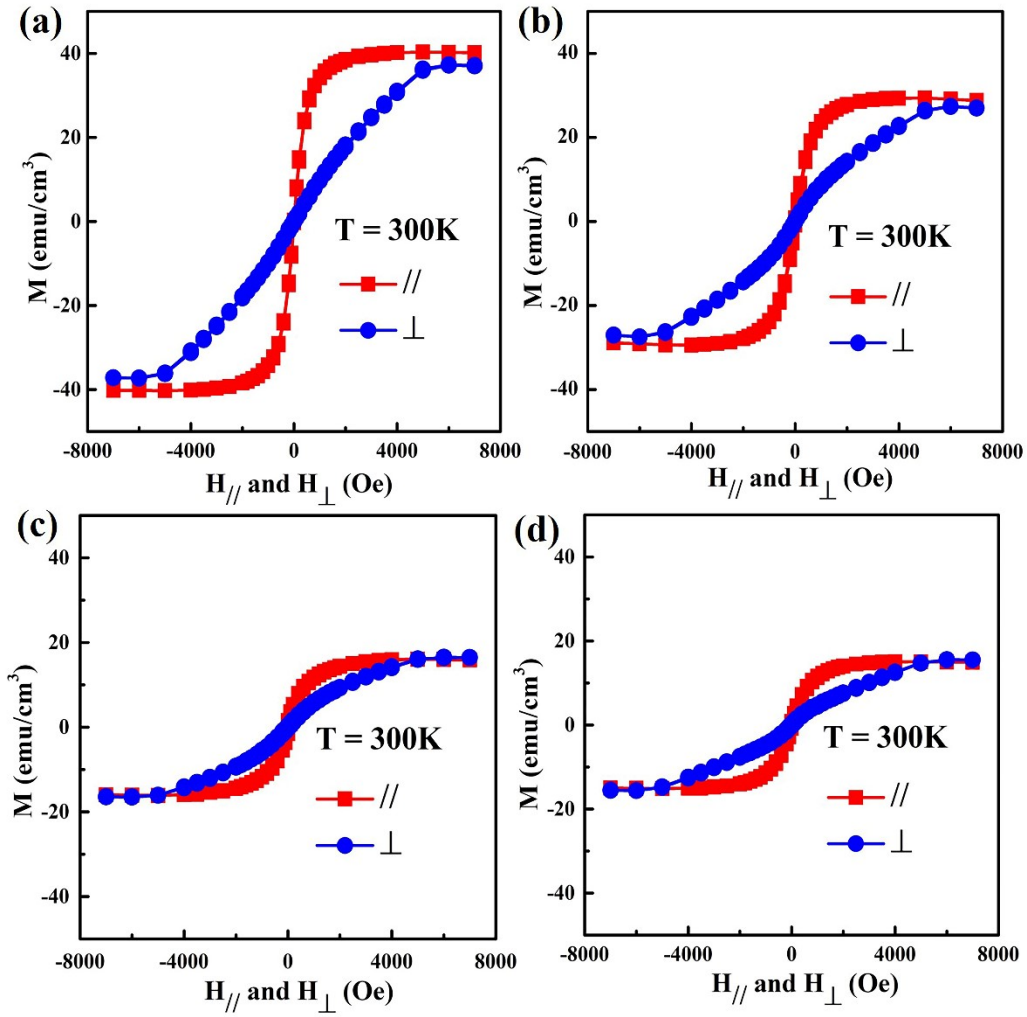


Fig. S2. Magnetic anisotropy of the MoSe₂ thin films prepared at different temperatures. (a-d) The M - H curves of Z1, Z2, Z3, and Z4 with $H_{//}$ and H_{\perp} applied at 300 K, respectively, indicating that the magnetic anisotropy exists and the c -axis is the easy magnetization direction in the all the samples.