

Supplementary Information

Long-term ambient stability of MoS₂ via ionic liquid encapsulation

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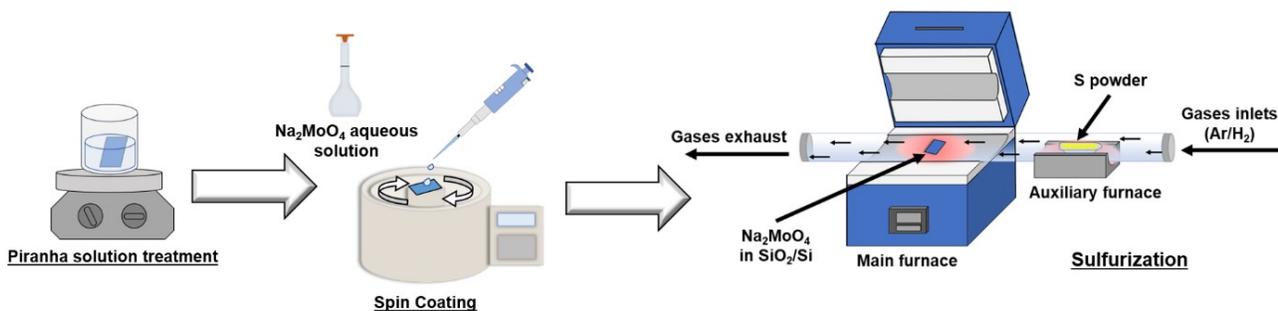


Fig. S1. Schematic representation of MoS_2 synthesis.

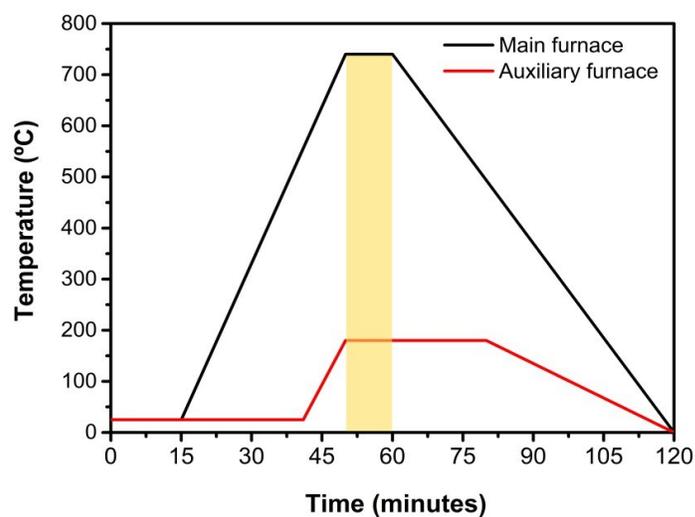


Fig. S2. Temperature profile of the sulfurization process. The time frame associated with sulfurization is highlighted in yellow.

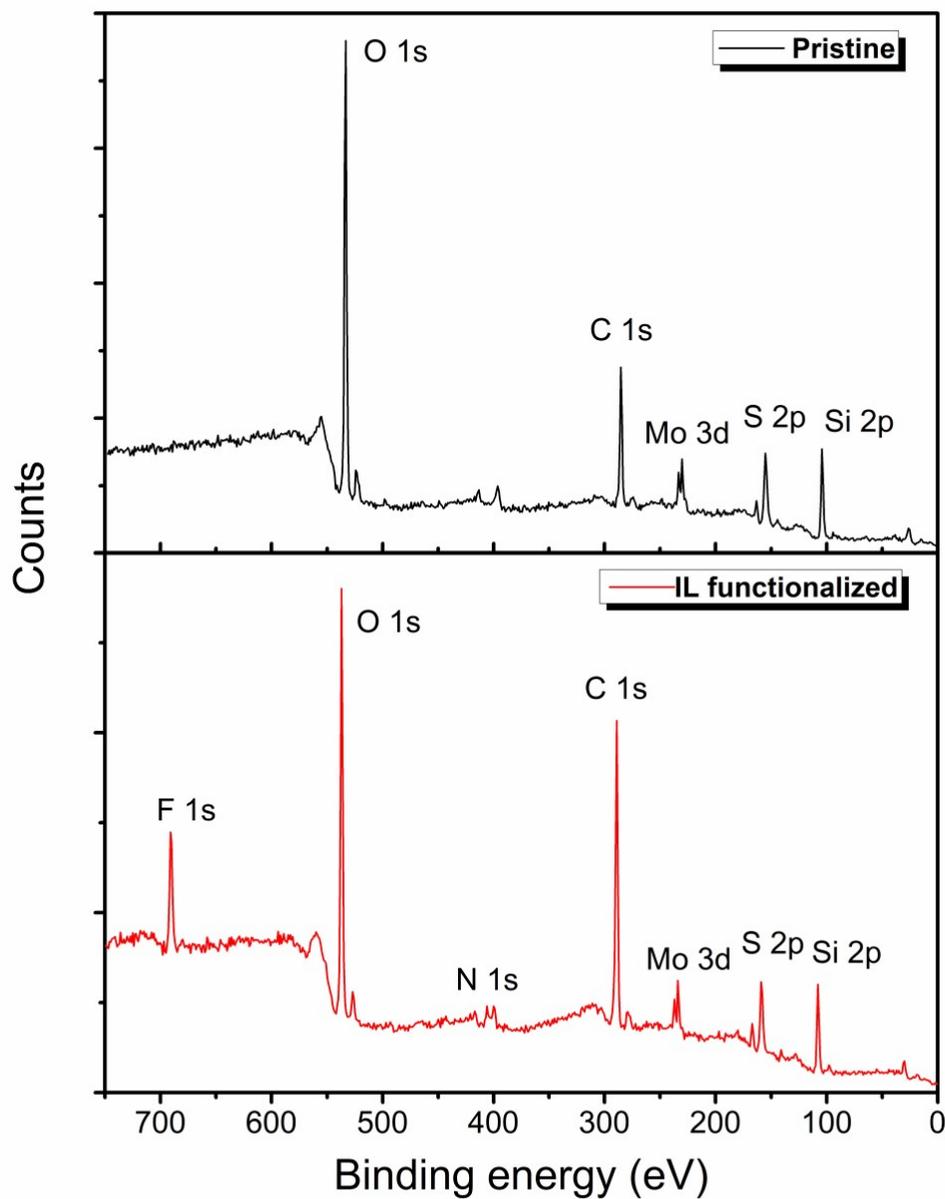


Fig. S3. XPS survey spectra of pristine and IL functionalized MoS₂ samples.

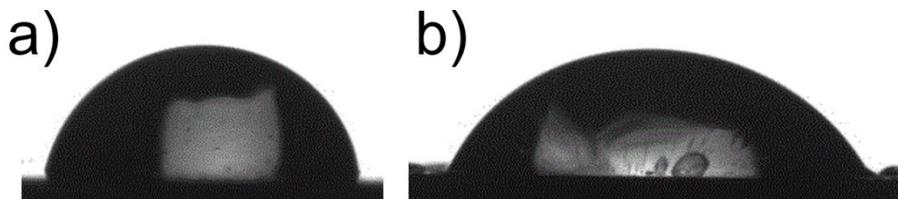


Fig. S4. Contact angle measurements for a) MoS₂ crystals on top of SiO₂ and b) the same sample following IL dispersion. The obtained values were 81° and 63°, respectively.

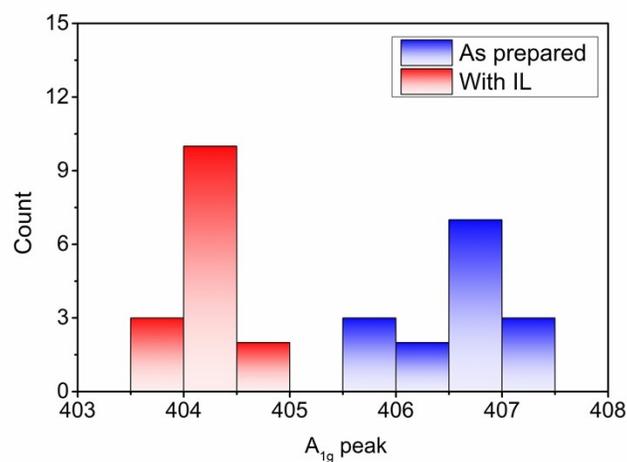
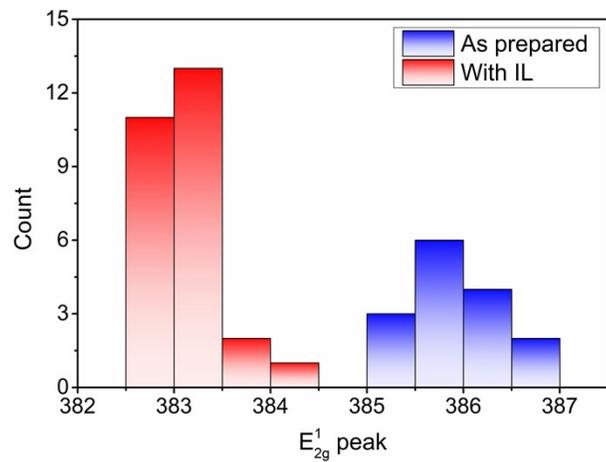


Fig. S5. Distribution of energy positions of the E_{2g}^1 and A_{1g} signals collected at 15 different points on both the pristine sample and the sample after IL dispersion.

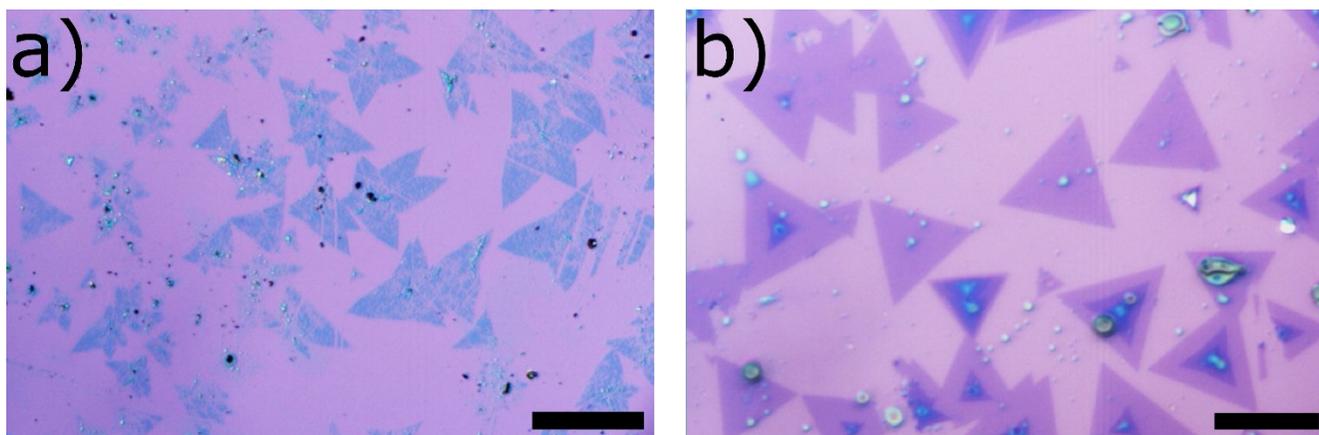


Fig. S6. OM images of pristine (a) and IL-treated samples (b) after 18 months in ambient air.