

Supporting Information for

## Thickness-Dependent Bandgap Tunable Molybdenum Disulfide Films for Optoelectronics

Juntong Zhu,<sup>a</sup> Jiang Wu,<sup>b</sup> Yinghui Sun,<sup>\*a</sup> Jianwen Huang,<sup>a</sup> Yufei Xia,<sup>a</sup> Hao Wang,<sup>a</sup> Haibo Wang,<sup>a</sup> Yun Wang,<sup>a</sup> Qinghua Yi,<sup>a</sup> Guifu Zou<sup>\*a</sup>

<sup>a</sup>College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, Suzhou 215006, China.

<sup>b</sup>Department of Electronic and Electrical Engineering, University College London, London WC1E 7JE, UK.

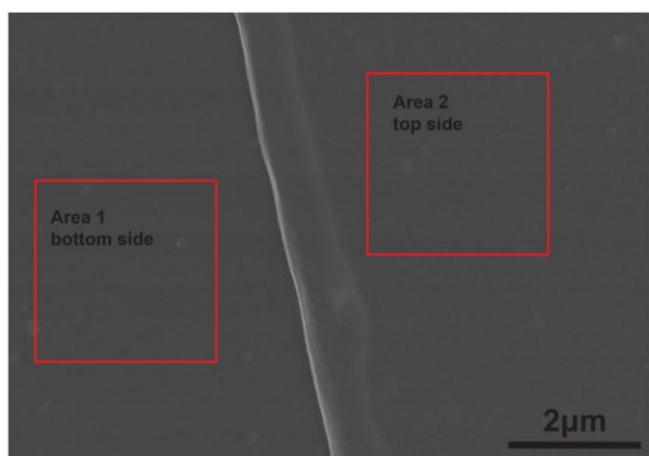


Figure S1. SEM image of bottom (left) and top (right) sides of 50 nm MoS<sub>2</sub> film after peeled off on the left part by tape.

	element	Top side	Bottom side
Atomic %	Mo-L	31.71	33.86
	S-K	68.29	66.14

Table S1. EDAX of bottom (left) and top (right) sides of 50 nm MoS<sub>2</sub> film after peeled off on the left part by tape.

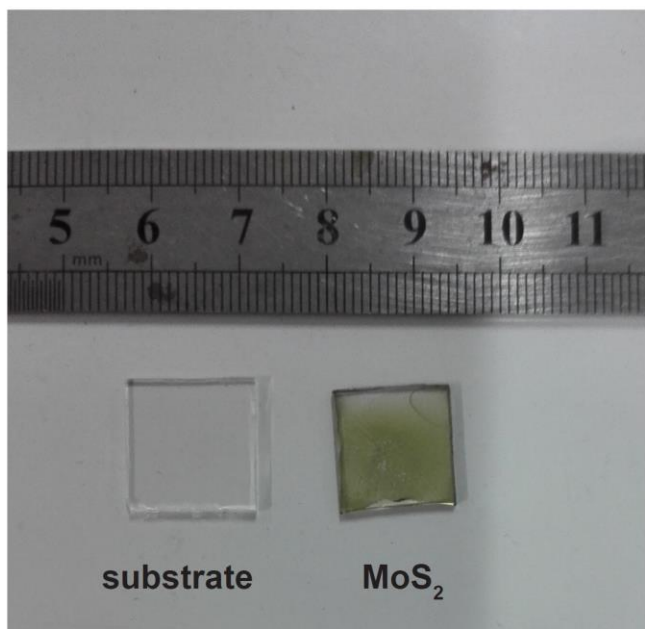


Figure S2. A large area photograph of MoS<sub>2</sub> film, the left is the quartz substrate and the right is MoS<sub>2</sub> film prepared on quartz.

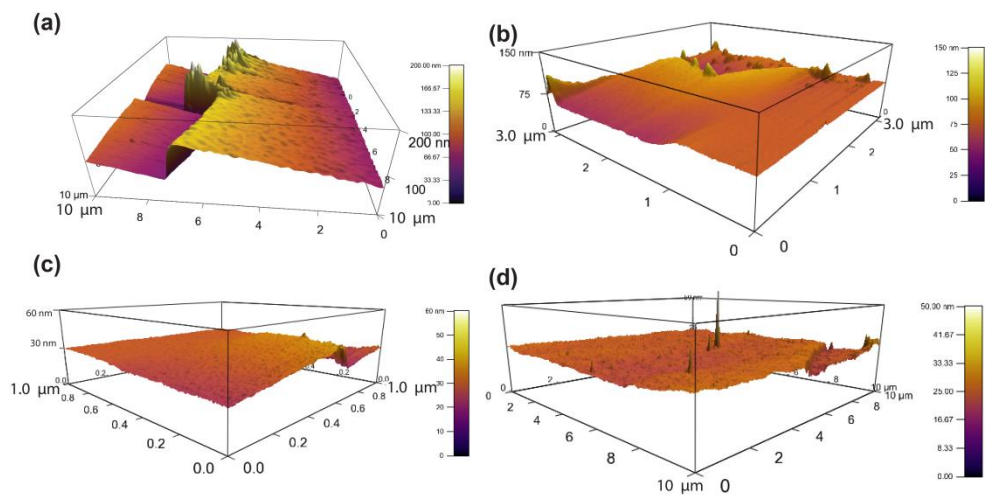


Figure S3. Perspective view of AFM images collected from MoS<sub>2</sub> films produced from Mo precursor concentration of 200 mM (a), 150 mM (b), 50 mM (c) and 13 mM (d), respectively.