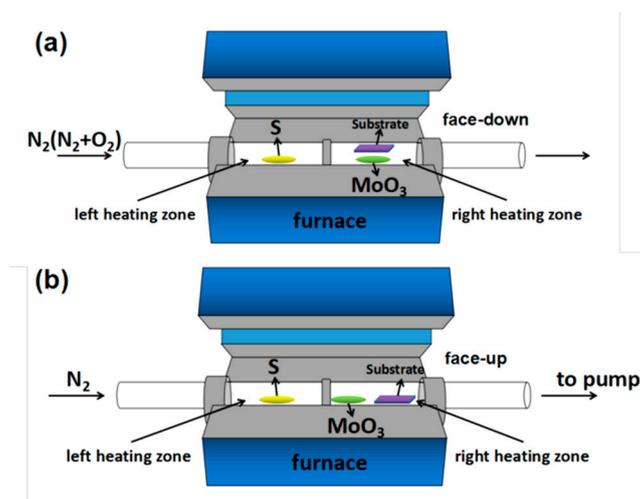
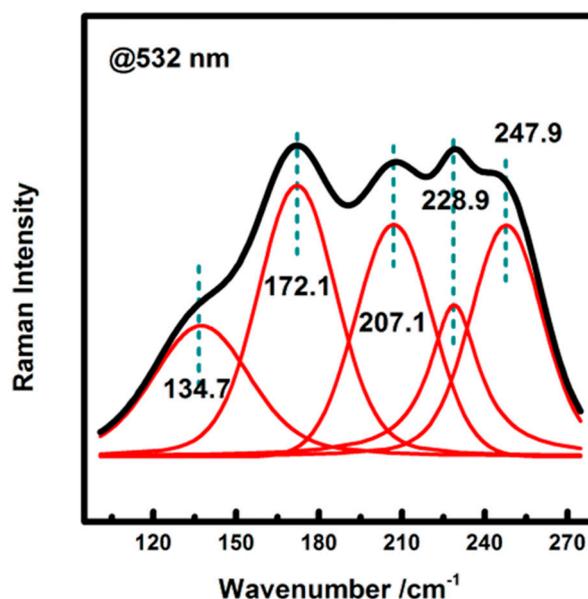


## Supplementary Materials: E'' Raman Mode in Thermal Strain-Fractured CVD-MoS<sub>2</sub>

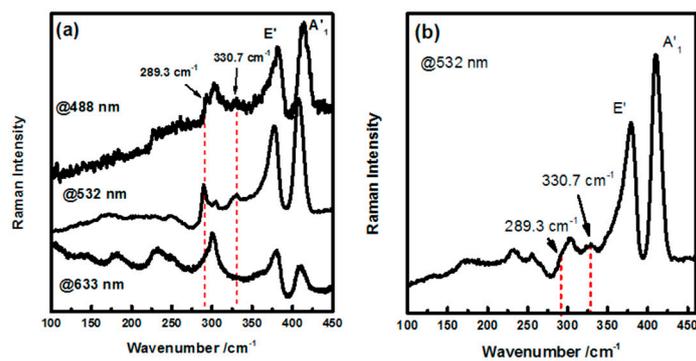
Di Wu, Han Huang, Xupeng Zhu, Yanwei He, Qiliang Xie, Xiaoliu Chen, Xiaoming Zheng, Huigao Duan and Yongli Gao



**Figure S1.** Typical setup of CVD system: (a) SiO<sub>2</sub> (300 nm)/p++Si substrate is face-down during the growth process of normal and OF-MoS<sub>2</sub>; and (b) SiO<sub>2</sub> (300 nm)/p++Si substrate is face-up during the growth process of SF-MoS<sub>2</sub>.



**Figure S2.** Close-up of the low-wavenumber region (100–270 cm<sup>-1</sup>) where the first-order modes are located of SF-MoS<sub>2</sub>. The red lines are the fitted Voigt peaks, and the black line is the experimental spectrum.



**Figure S3.** (a) Raman spectra excited by 488, 532 and 633 nm laser of SF-MoS<sub>2</sub> sample; and (b) Raman spectrum of SF-MoS<sub>2</sub> three months later.



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