

The Effect of the Pre-Strain Process on the Strain Engineering of Two-Dimensional Materials and Their van der Waals Heterostructures

Jinkun Han ¹, Xiaofei Yue ¹, Yabing Shan ¹, Jiajun Chen ¹, Borgea G. M. Ekoya ¹, Laigui Hu ¹, Ran Liu ¹, Zhijun Qiu ^{1,*} and Chunxiao Cong ^{1,2,*}

¹ State Key Laboratory of ASIC and System, School of Information Science and Technology, Fudan University, Shanghai 200433, China

² Yiwu Research Institute of Fudan University, Chengbei Road, Yiwu City 322000, China

* Correspondence: zjqiu@fudan.edu.cn (Z.Q.); cxcong@fudan.edu.cn (C.C.)

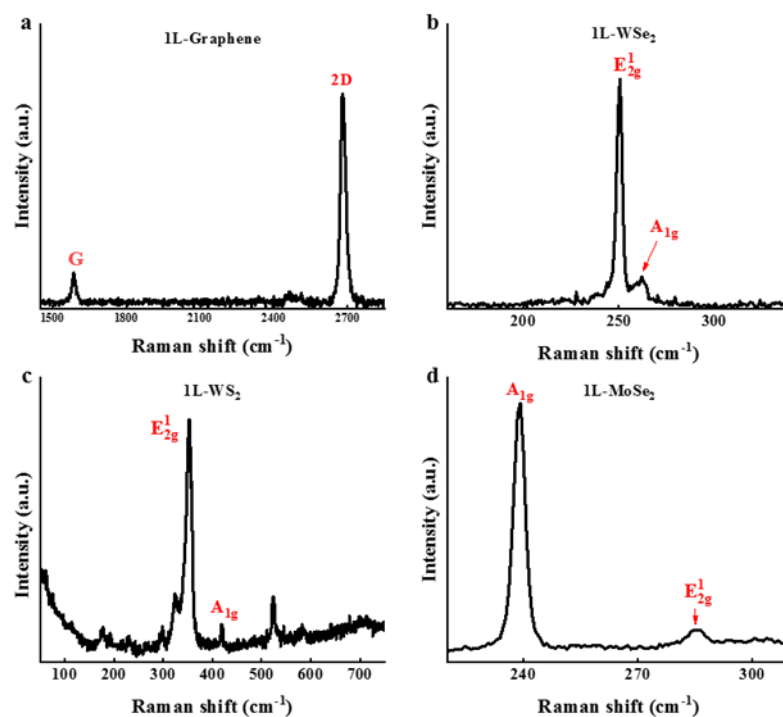


Figure S1. (a–d) Raman spectrum for 1L-graphene, 1L-WSe₂, 1L-Ws₂, 1L-MoSe₂.

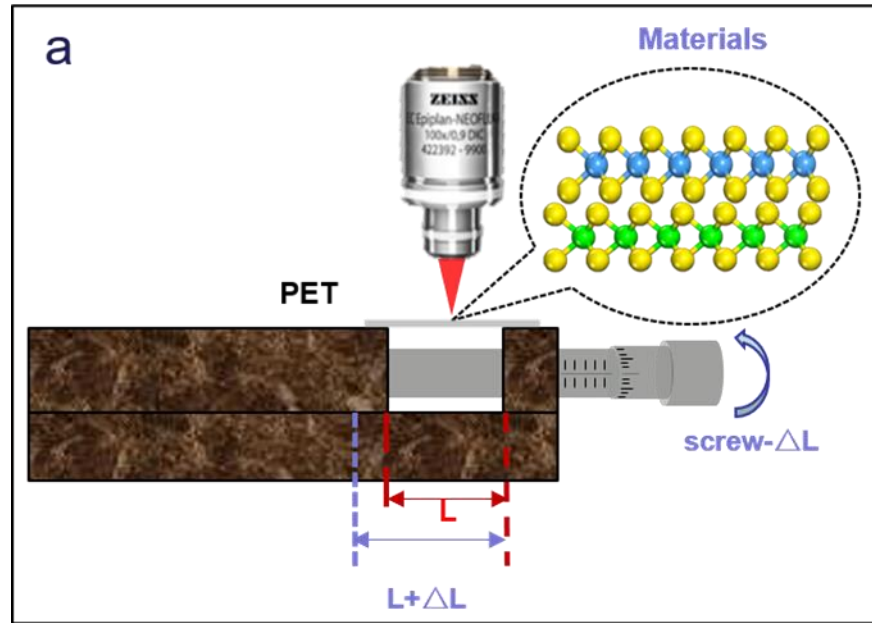


Figure S2. (a) Strain modulation schematic for WS_2/WS_2 and $\text{WS}_2/\text{MoSe}_2$ heterostructure.

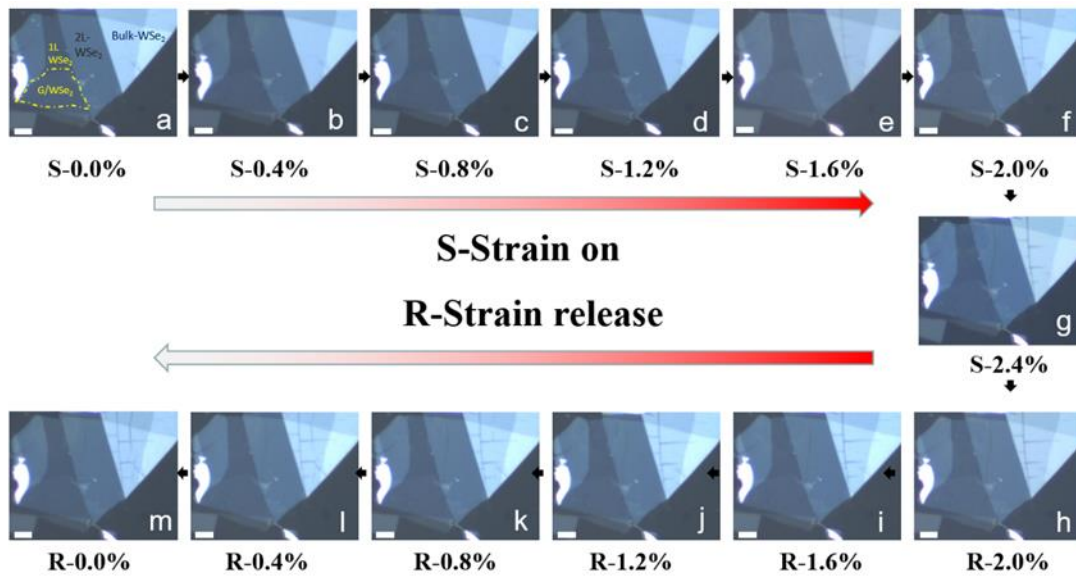


Figure S3. (a-m) Optical view of 1L- WSe_2 and graphene/ WSe_2 heterostructure during strain on and release process from 0-2.4%.