Supporting Information

for

Intercalation of Si between MoS_2 layers

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Additional experimental data

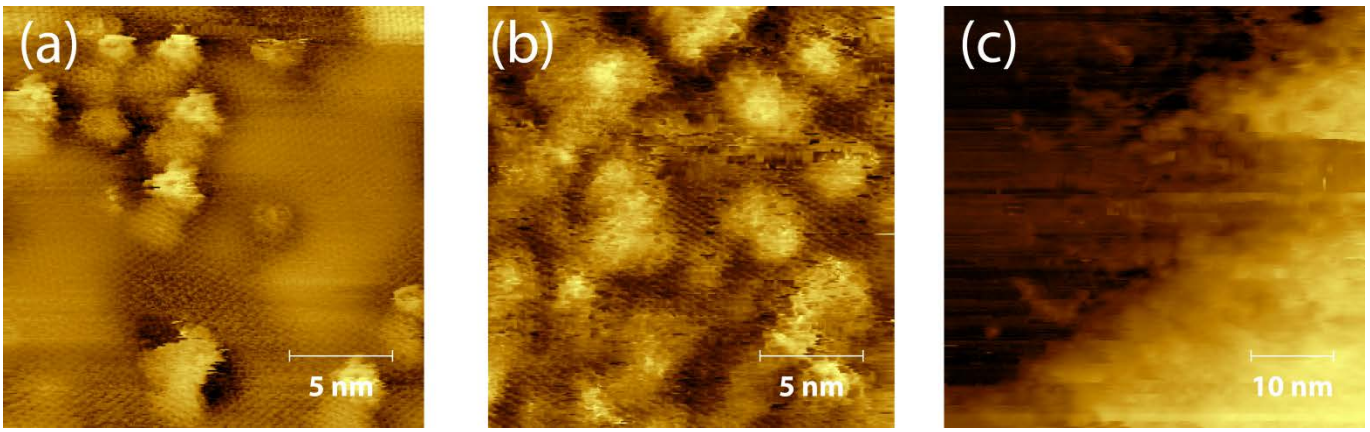

Figure S1: Topography of the MoS_2 surface as a function of the amount of deposited silicon. (a) 0.2 monolayers. Here transitions between hills and valleys are visible. The recurring feature is a tip image. (b) 0.8 monolayers. The sample becomes rougher and more difficult to image. (c) 1.4 monolayers. Silicon clusters are visible on top of the MoS_2.

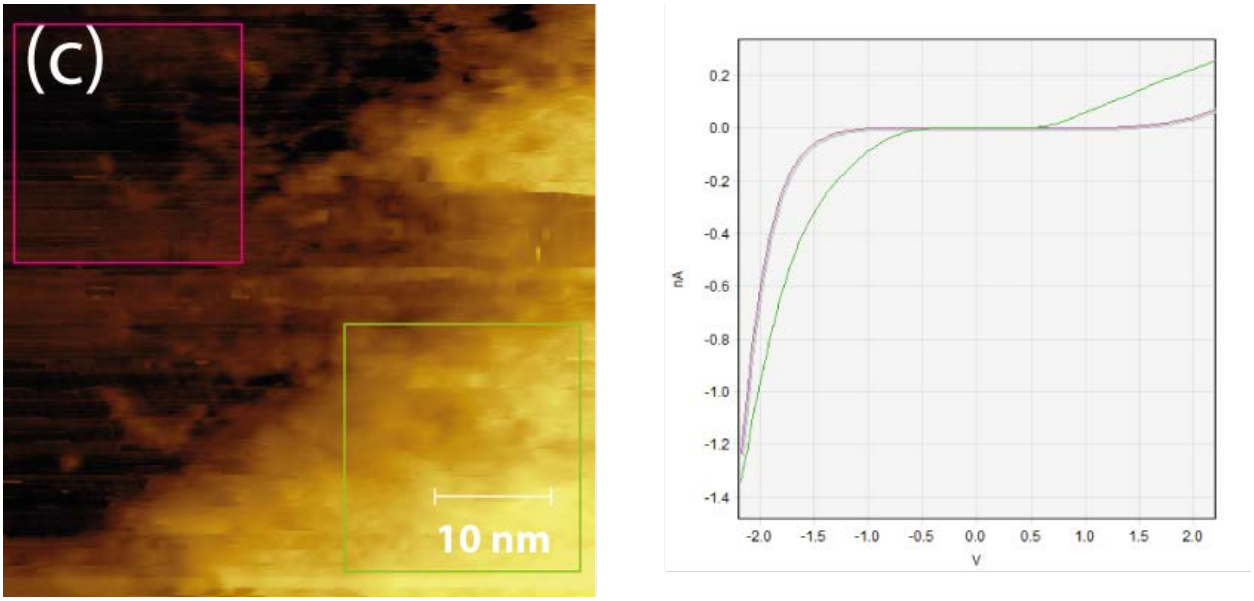

Figure S2: (a) silicon clusters on top of MoS_2 after deposition of 1.4 monolayers of silicon. The purple and green boxes indicate the locations where a grid scan is performed. Each grid did consist of 100 curves. (b) The average of the recorded $I(V)$ curves on top of the cluster (green) is significantly different from the average of the curves recorded on MoS_2 (purple).

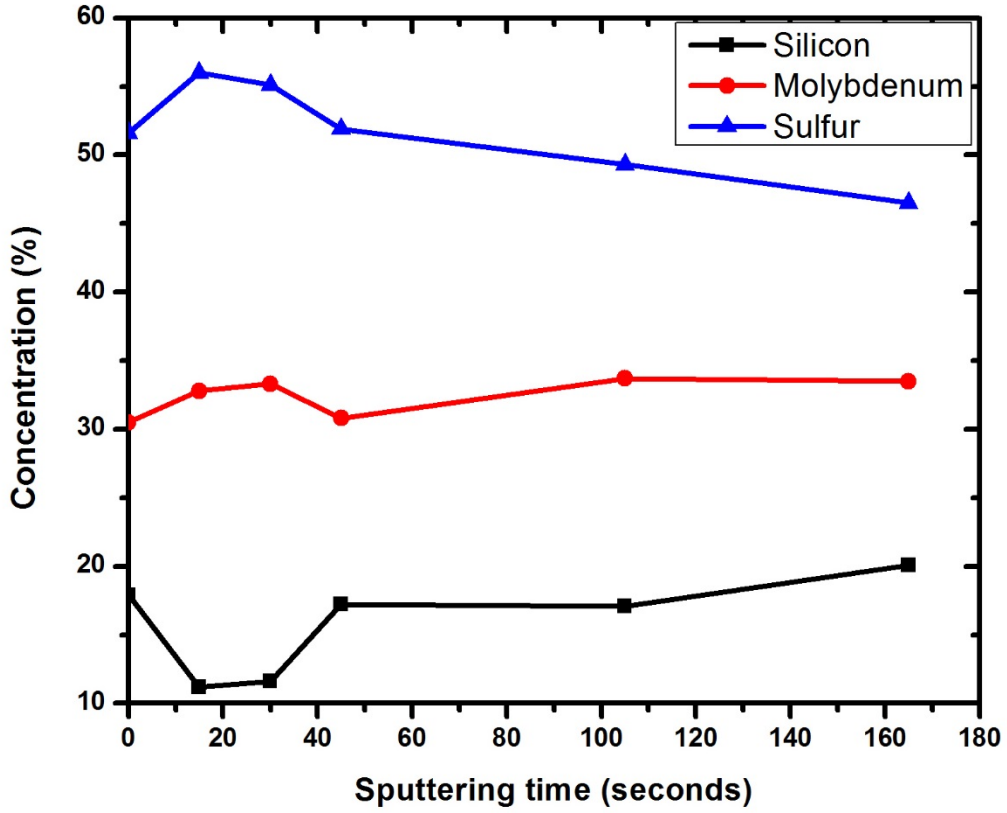

Figure S3: Atomic concentration of Si, Mo and S as a function of the sputtering time. The sputter current used is 0.33 μA with an estimated spot diameter of 2 mm.