

Electronic Supplementary Information

Few layers MoS₂ lithography with AFM tip: description of the technique and nanospectroscopy investigations

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In Figures 1S and 2S, AFM images of few layers MoS₂ flakes have been reported. The analyzed flakes are thinner than the ones analyzed by spatially resolved photoelectron spectroscopy in the paper, showing that the lithography process can be controlled in order to pattern very thin MoS₂ flakes.

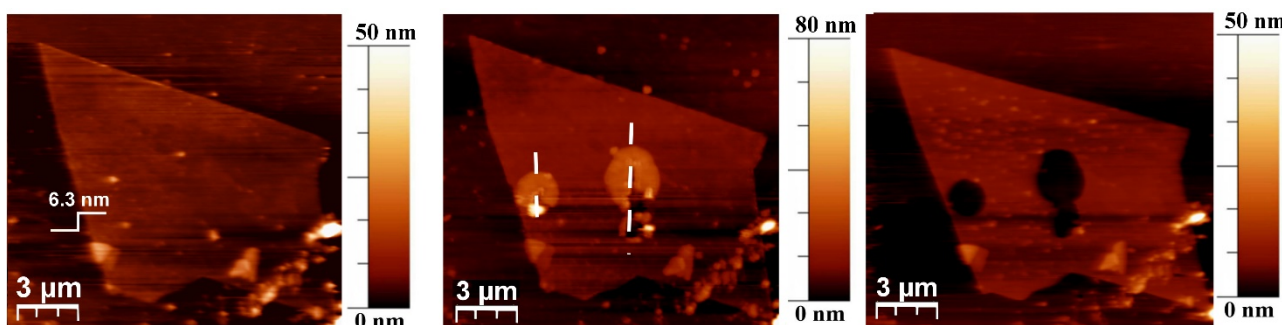


Figure 1S. From left to right: MoS₂ pristine flake; MoS₂ flake after lithography process (the white dashed lines represent the AFM tip paths); MoS₂ flake after HCl etching. Tip voltage = -8 V; tip speed = 0.1 μm/s. Etching parameters: 10 s in 0.05 M HCl. The height of the lithographed region (second panel) is about 16 nm for the left path and 18 nm for the right path. After chemical etching, a hole is created in the flake.

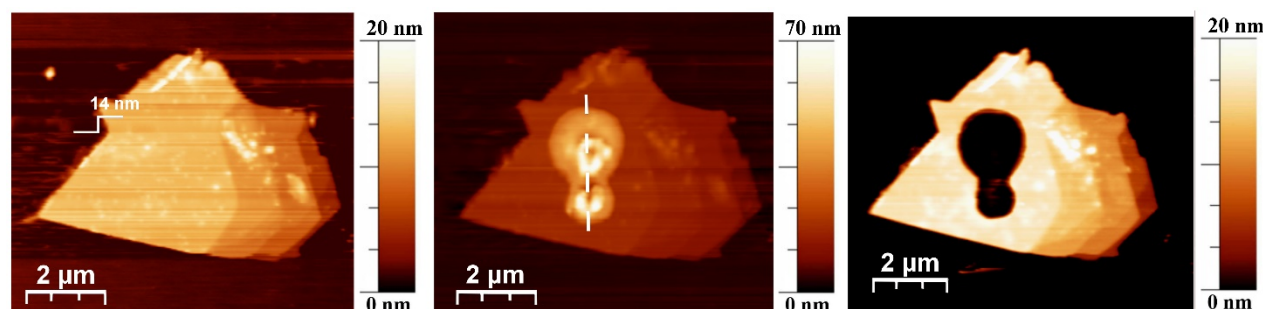


Figure 2S. From left to right: MoS₂ pristine flake; MoS₂ flake after lithography process (the white dashed line represents the AFM tip path); MoS₂ flake after HCl etching. Tip voltage = -6 V; tip speed = 0.8 μm/s. Etching parameters: 10 s in 0.05 M HCl. The height of the lithographed region (second panel) is about 26 nm. After chemical etching, a hole is created in the flake.