

Vapour-liquid-solid-like growth of high-quality and uniform 3C-SiC heteroepitaxial films on a-Al₂O₃(0001) substrates

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Supporting information

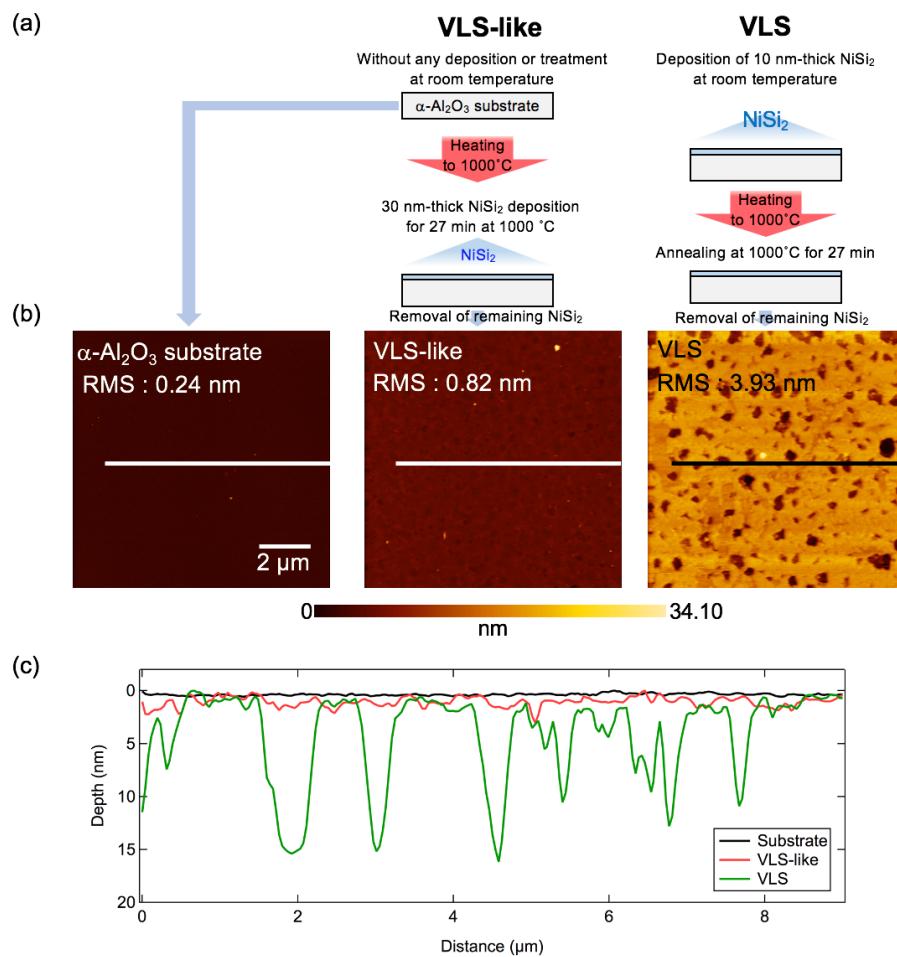


Fig. S1 (a) Schematic illustrations of the fabrication procedure for surface-etched $\alpha\text{-Al}_2\text{O}_3$ substrate. The procedure on the left and right assumes substrate etching with VLS-like growth and VLS growth, respectively. (b) A set of AFM images for each sample. (c) Cross-sectional profiles along the black lines that are inserted in (b).

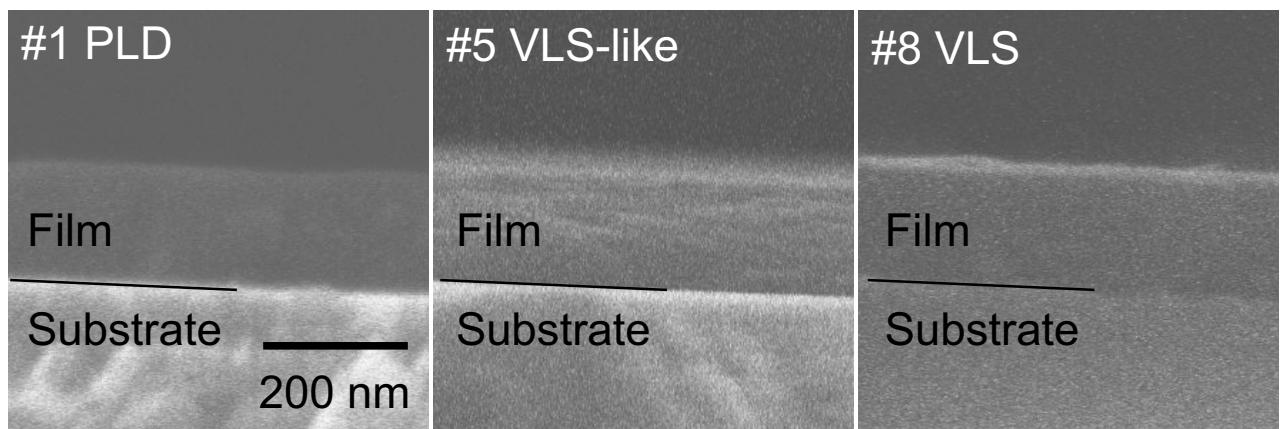


Fig. S2 Cross-sectional SEM images for the sample #1, #5 and #8.

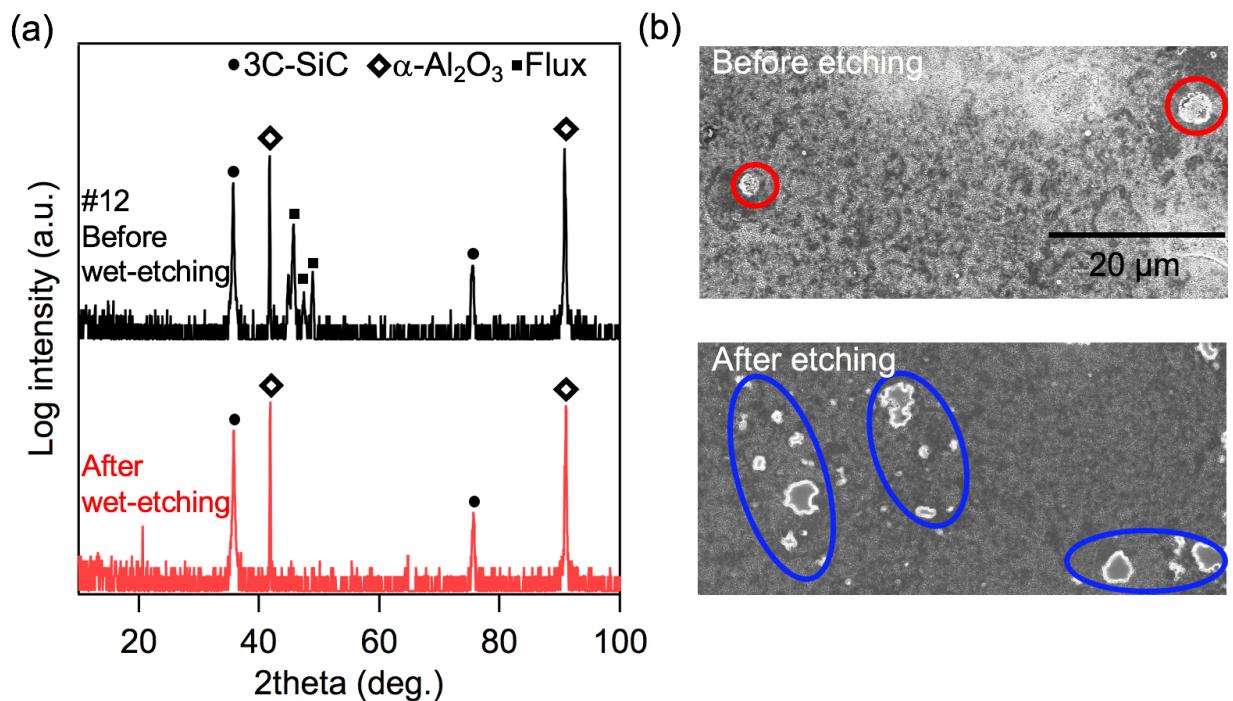


Fig. S3 Set of XRD 2θ patterns (a) and SEM images (b) for the sample #12 taken before and after wet-etching. In the SEM images, there are some precipitates, enclosed with the red lines, on the surface before the wet-etching, while the traces of precipitates, enclosed with the blue lines, are found after the wet etching.

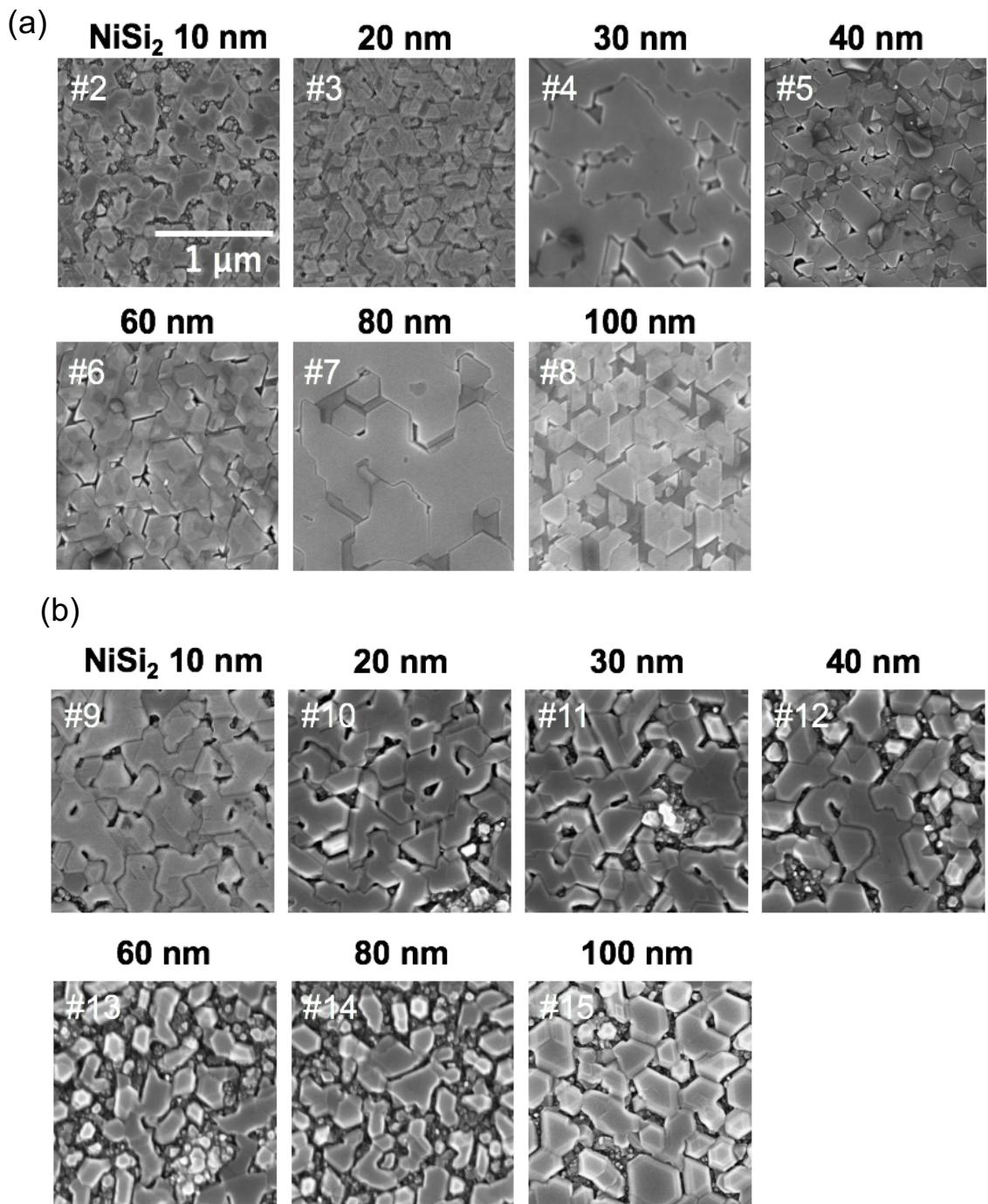


Fig. S4 Set of SEM images of the SiC film samples #2~#15.

(a) the VLS-like grown SiC films (#2~#8) and (b) the VLS grown SiC films (#9~#15).

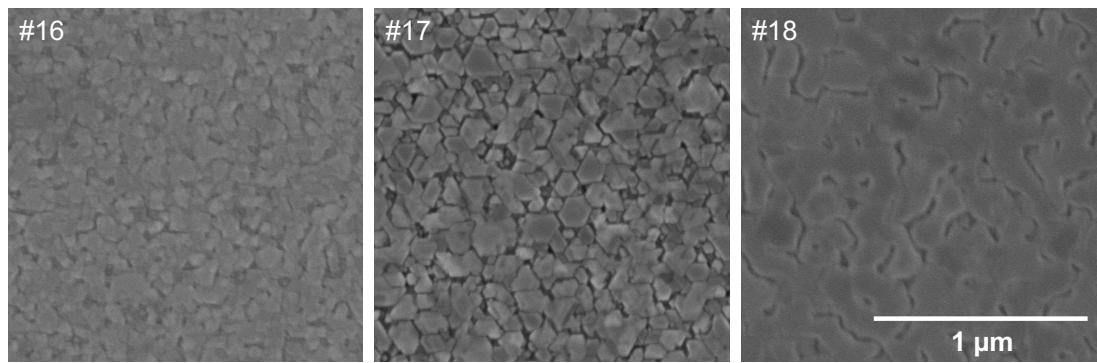


Fig. S5 SEM images for the VLS-like grown SiC films #16, #17 and #18.