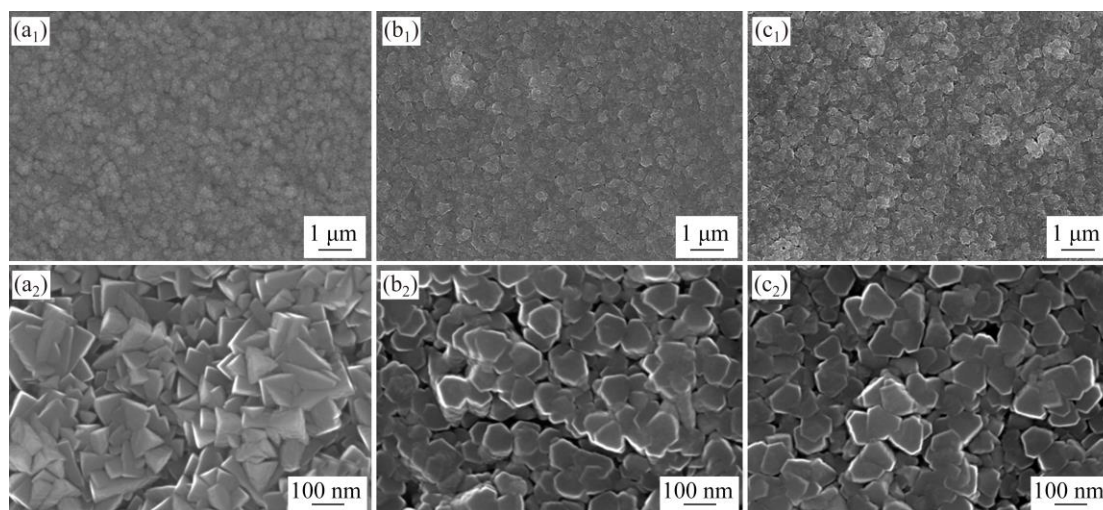
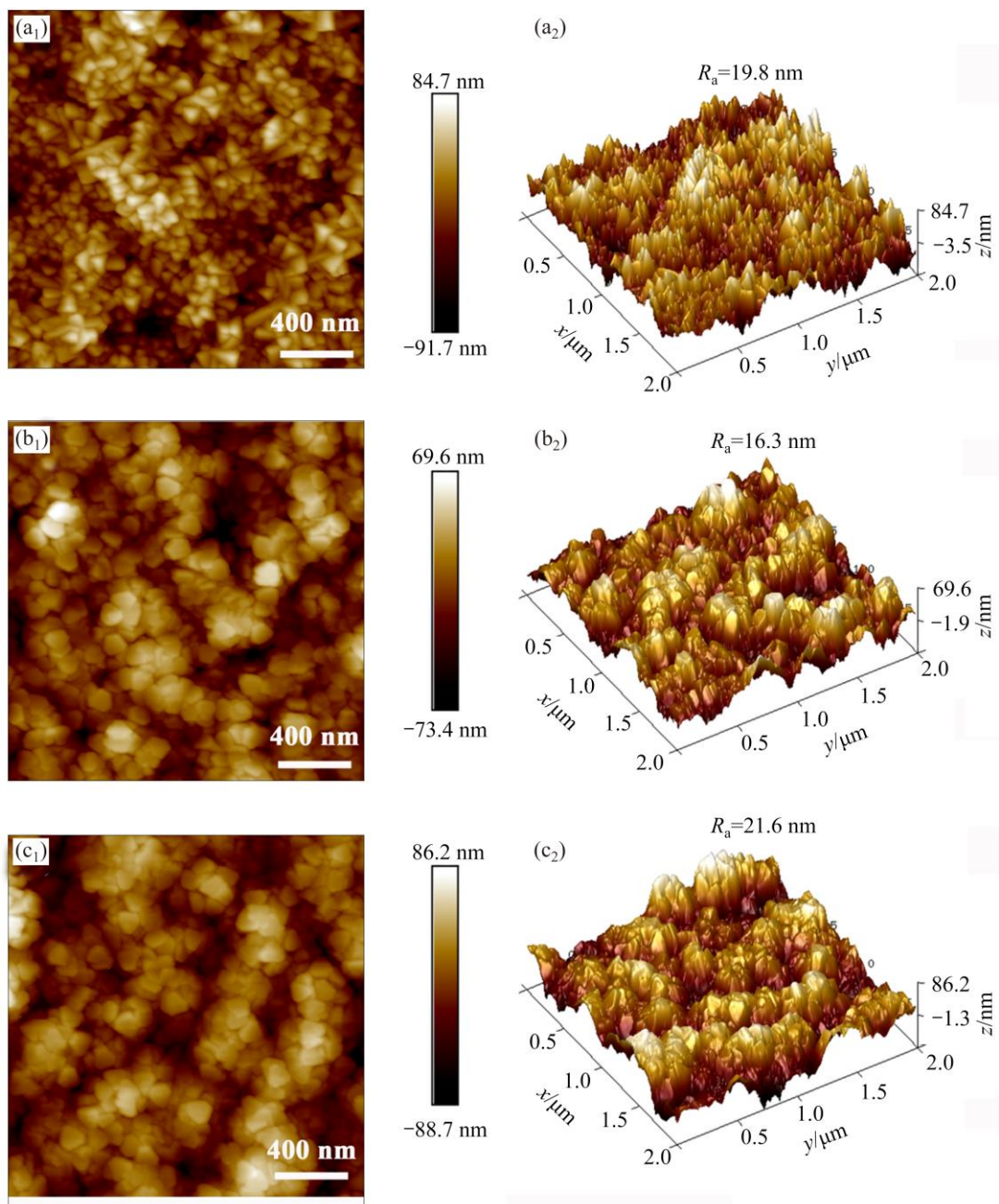


## Supplementary materials



**Figure S1** SEM image of annealed coating prepared at (a<sub>1</sub>, a<sub>2</sub>) 800 °C, (b<sub>1</sub>, b<sub>2</sub>) 750 °C, and (c<sub>1</sub>, c<sub>2</sub>) 700 °C



**Figure S2** AFM images of a  $\text{Ti}_3\text{AlC}_2$  coating with annealing temperatures of (a<sub>1</sub>, a<sub>2</sub>) 800 °C, (b<sub>1</sub>, b<sub>2</sub>) 750 °C, and (c<sub>1</sub>, c<sub>2</sub>) 700 °C