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## **Supplemental Information:**

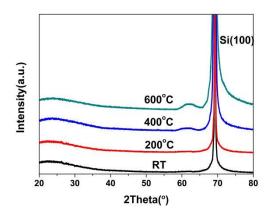


Fig.S1. Theta-2theta XRD patterns of a-C films deposited at various temperatures between RT and 600°C with a thickness of 75nm.

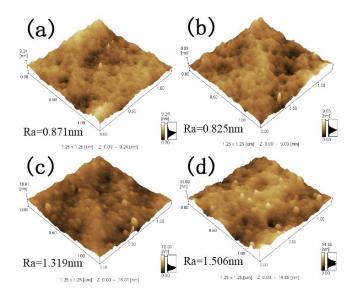


Fig.S2. AFM images of the 1.25×1.25μm a-C films deposited at different temperatures with a thickness of 75nm: (a) RT; (b) 200°C; (c) 400°C; (d) 600°C.

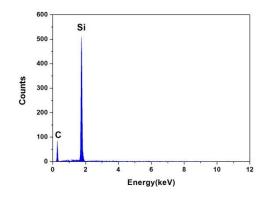


Fig.S3. EDS spectrum of white particles on the surface of a-C films.