Supporting Information

Silicon Oxycarbide Accelerated Chemical Vapor Deposition of Graphitic Networks on Ceramic Substrates for Thermal Management Enhancement

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Number of pages: 4 Number of figures: 4 Number of tables: 1

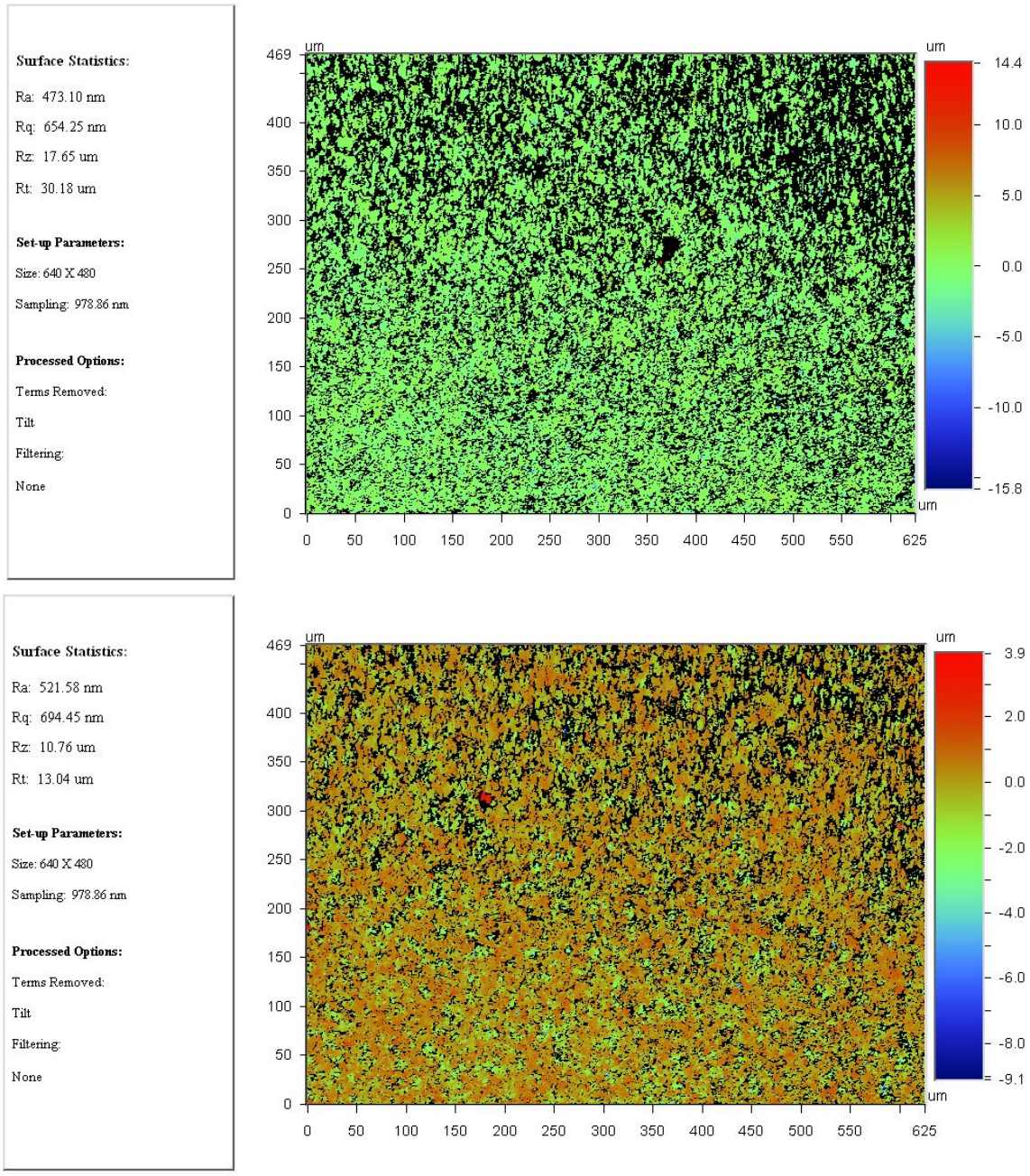

Figure S1. Optical profilometry of ceramic substrates. Surface profile of Al_2O_3 (top) and AlN (bottom) ceramic substrates

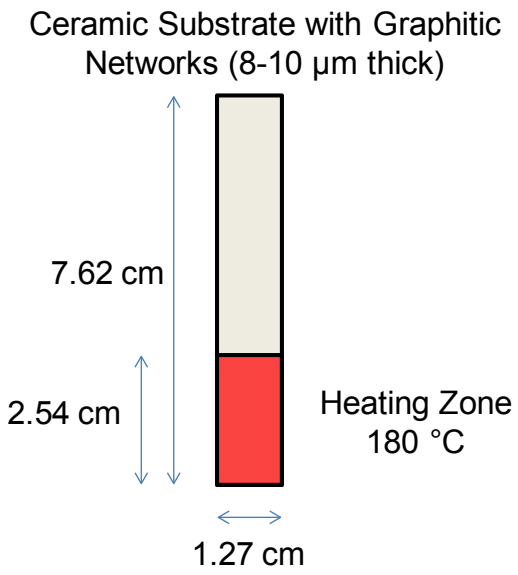

Figure S2. Heat transfer set-up for comparison of Al_2O_3/AlN coated with graphitic networks

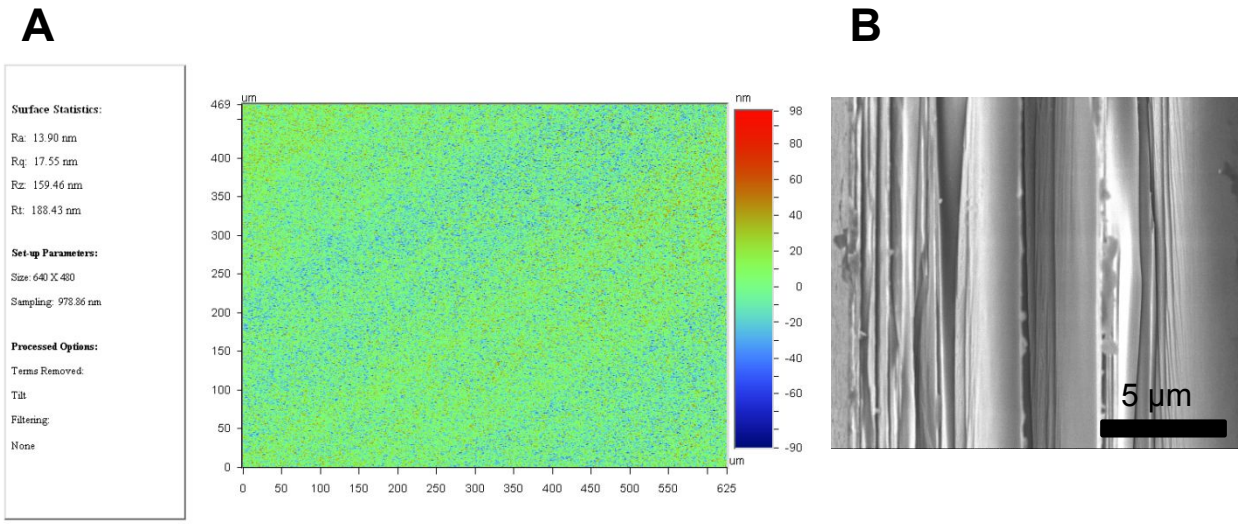

Figure S3. Graphitic networks on quartz. (**A**) Surface profile of quartz substrate. (**B**) SEM cross-section of graphitic networks on quartz

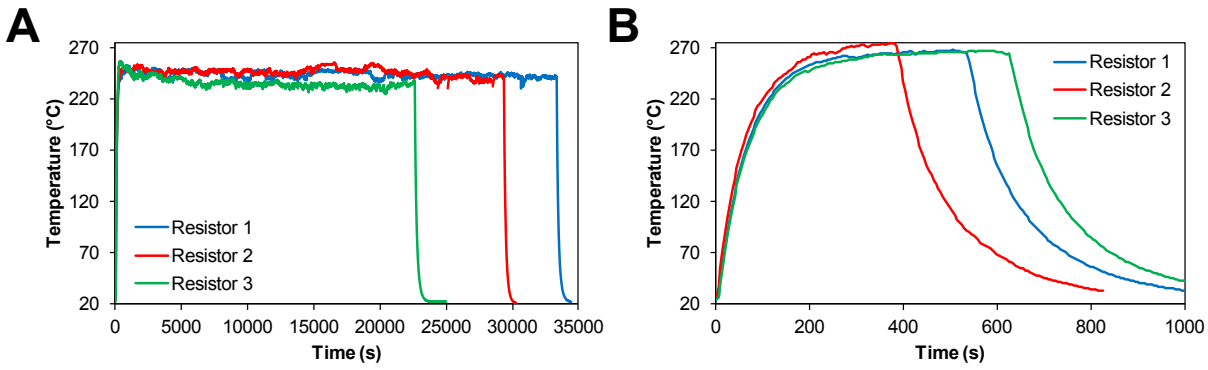

Figure S4. Resistor failure experiment front edge temperature profiles. Front edge temperature profiles of (**A**) coated Al_2O_3 and (**B**) bare AlN DBC substrates

Table S1. EELS analysis of sp^2 content of graphitic networks on Al_2O_3

Scan Number	$I_{\pi}/I_{\pi+\sigma}$	sp^2 Content (%)
HOPG	0.1557	100.0
1	0.1471	94.3
2	0.1513	97.0
3	0.1560	100.0
4	0.1560	100.0
5	0.1261	80.8
6	0.1472	94.4

Movie S1. SAED analysis of layer orientation boundary in SiOC-accelerated graphitic networks on DBC Al_2O_3. SAED was carried out over a 100 nm^2 area, with 100 nanodiffraction patterns generated. The patterns are played in succession.