Supplementary Information

Reduction of Device Operating Temperatures With Graphene-filled Thermal Interface Materials

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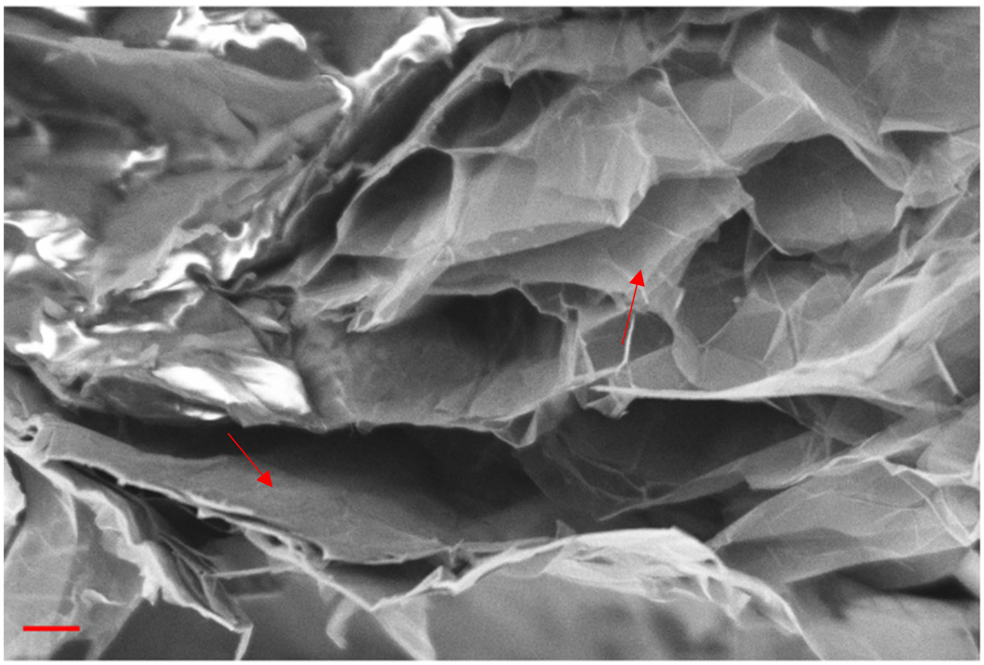

Figure S1. SEM of a 5.4 vol.% graphene filler TIM sample's fractured surface. Regions of the composite that is primarily epoxy are seen as white charging spots. The scale bar corresponds to a distance of 2 microns. Arrows point to some of the FLG in view. Reproduced from [1]. CC BY 3.0.

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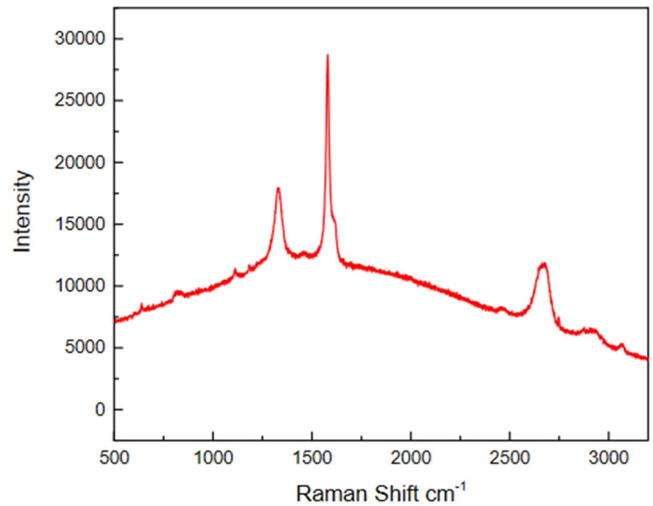

Figure S2. Raman spectrum of a 5.4 vol.% graphene filler loading TIM. Characteristic D, G, and 2D peaks of graphene are present. Reproduced from [1]. CC BY 3.0.

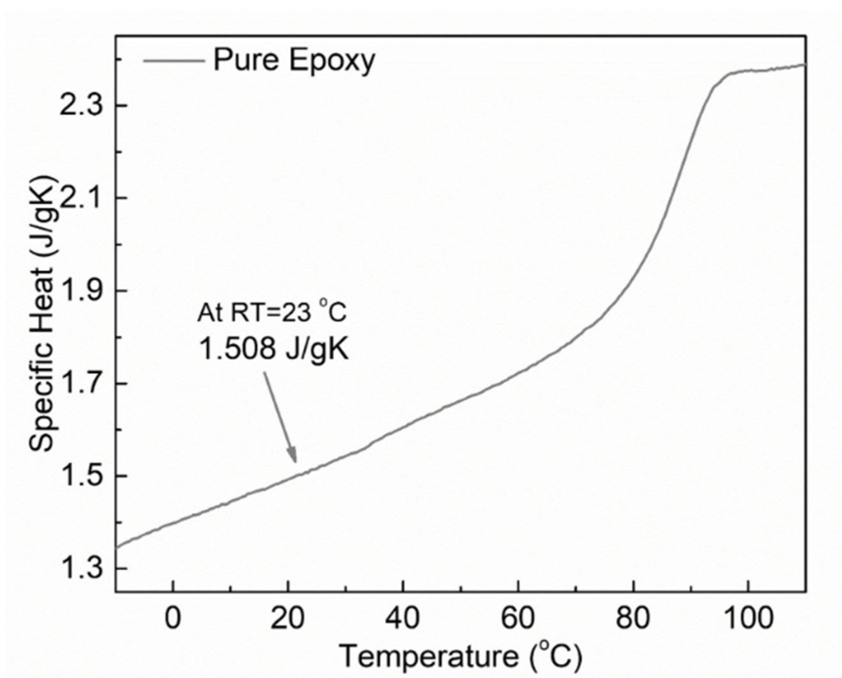

Figure S3. Differential Scanning Calorimetry results of the Diglycidyl ether of Bisphenol A hardened with Triethylenetetramine (at a quantity of 12% of the weight of the resin). Reproduced from [1]. CC BY 3.0.

References

J. S. Lewis, T. Perrier, A. Mohammadzadeh, F. Kargar, and A. A. Balandin, “Power cycling and reliability testing of epoxy-based graphene thermal interface materials,” C — J. Carbon Res., 6, p. 26, 2020.