

Supplementary Materials

Fabrication and Characterization of a Thermophone Based on Laser-Scribed Graphene Intercalated with Multiwalled Carbon Nanotubes

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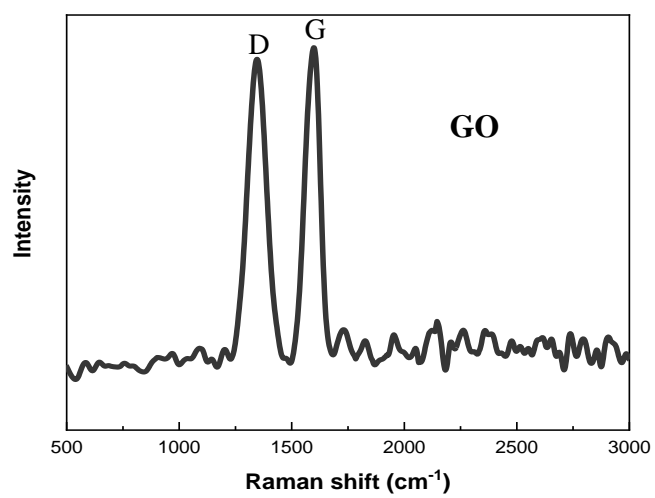


Figure S1. Raman spectra of graphene oxide

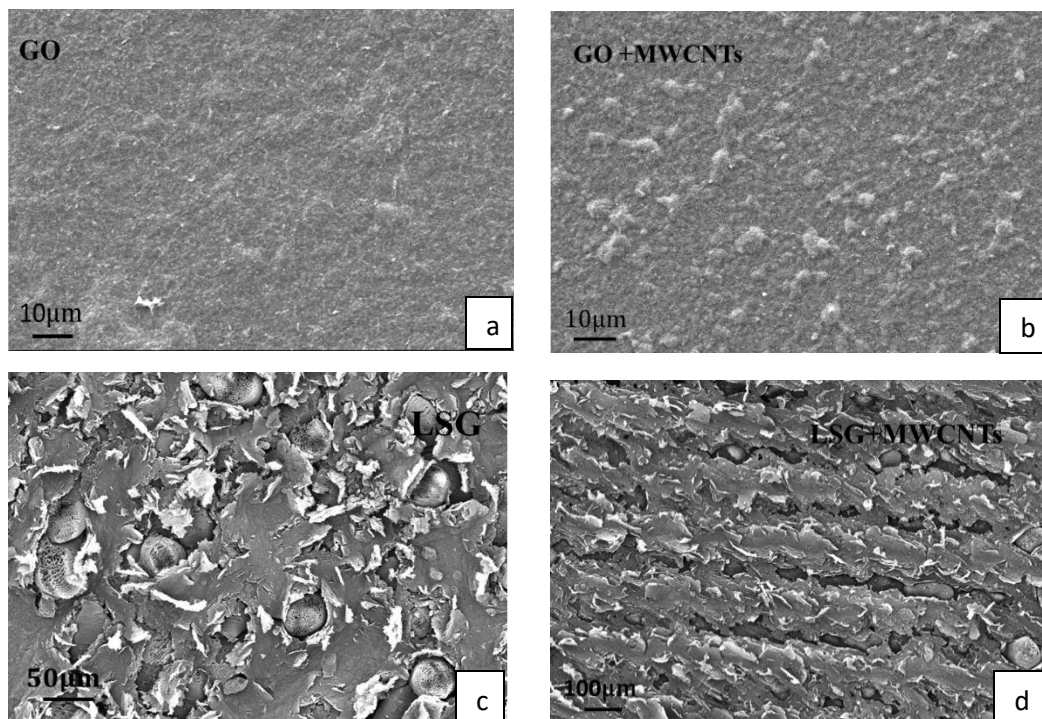


Figure S2. (a) SEM image of GO, (b) SEM image of GO+MWCNTs, (c) SEM image of LSG, (d) SEM image of LSG+MWCNTs

Optical Profilometry of GO

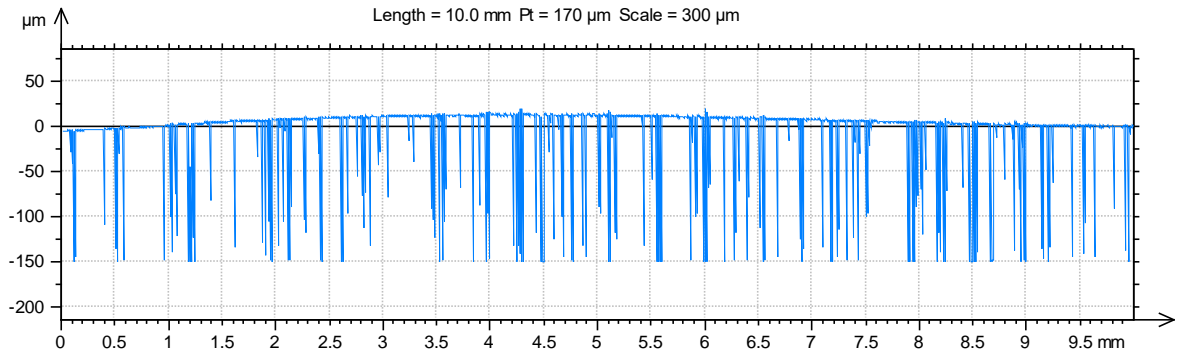


Figure S3. (a): Height profile of GO

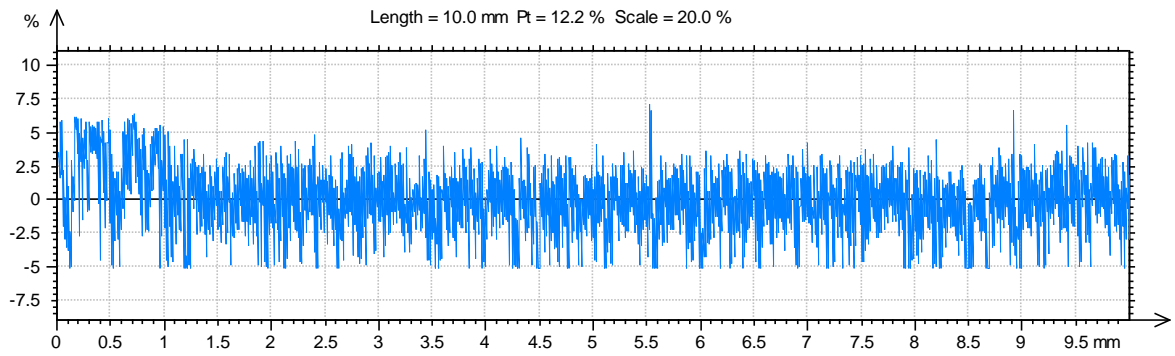


Figure S3. (b): Intensity profile of GO

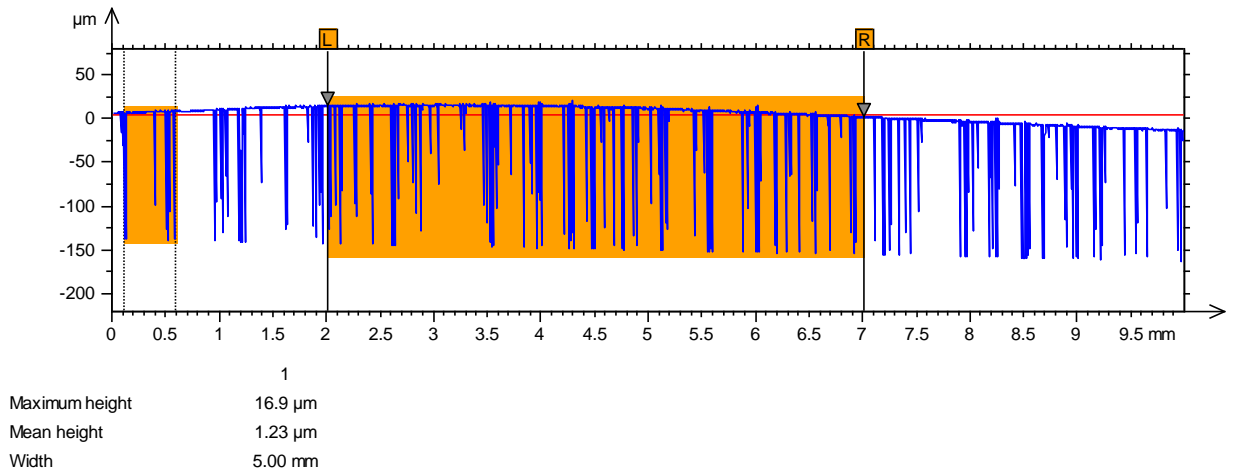


Figure S3. (c): Thickness profile of GO

Optical profilometry of GO+MWCNTs

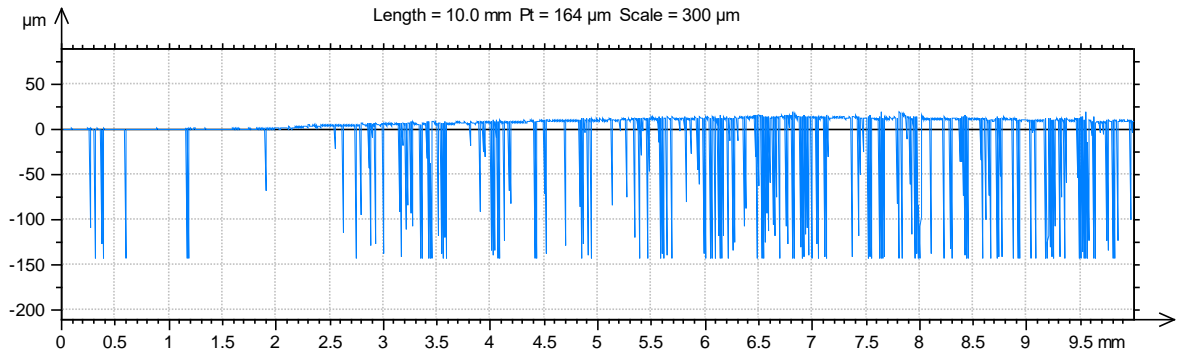


Figure S4. (a): Height profile of GO+MWCNTs

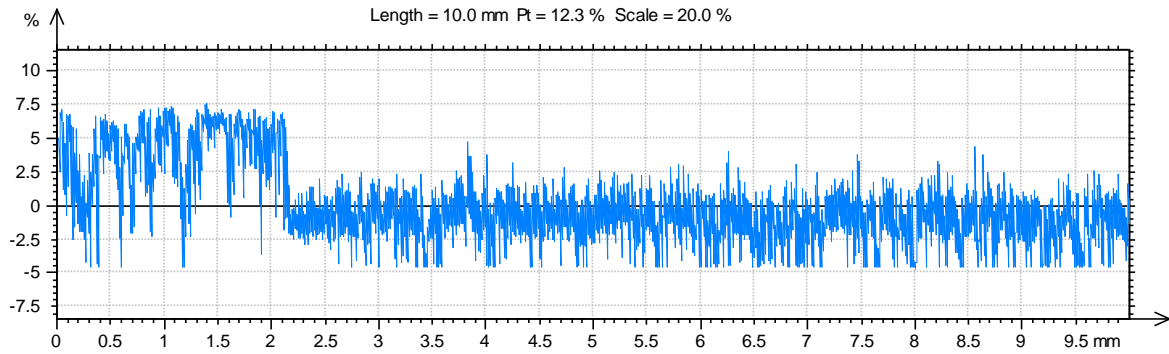


Figure S4. (b): Intensity profile of GO+MWCNTs

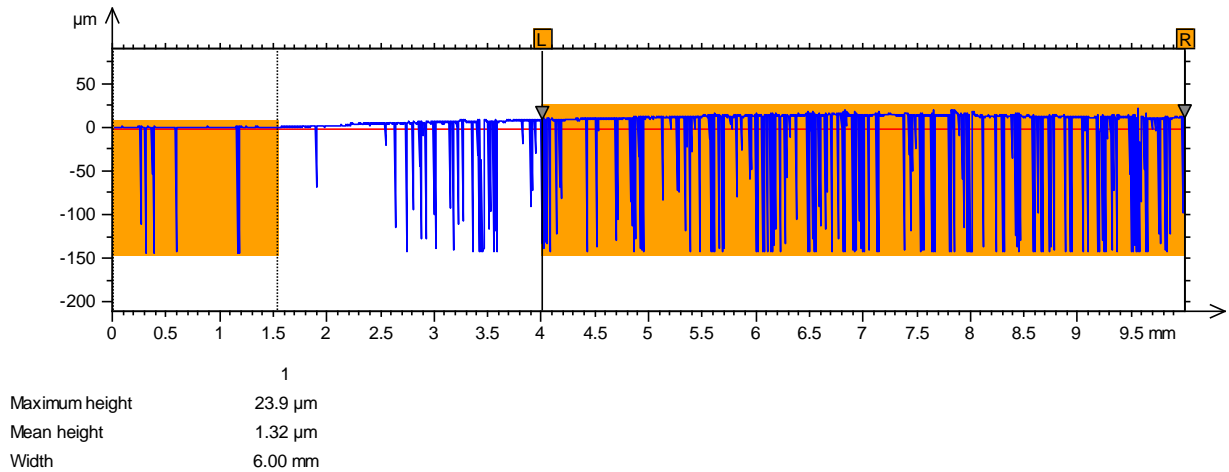


Figure S4. (c): Thickness profile of GO+MWCNTs

Optical profilometry of laser scribed graphene (LSG)

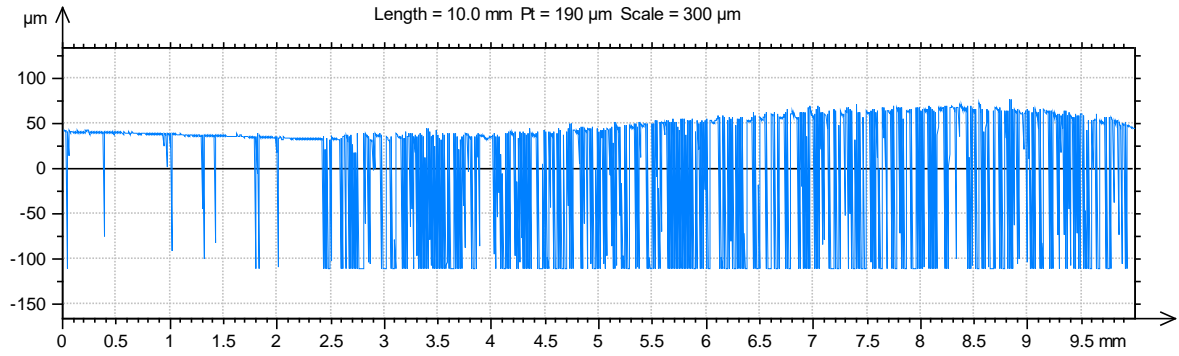


Figure S5. (a): Height profile of LSG

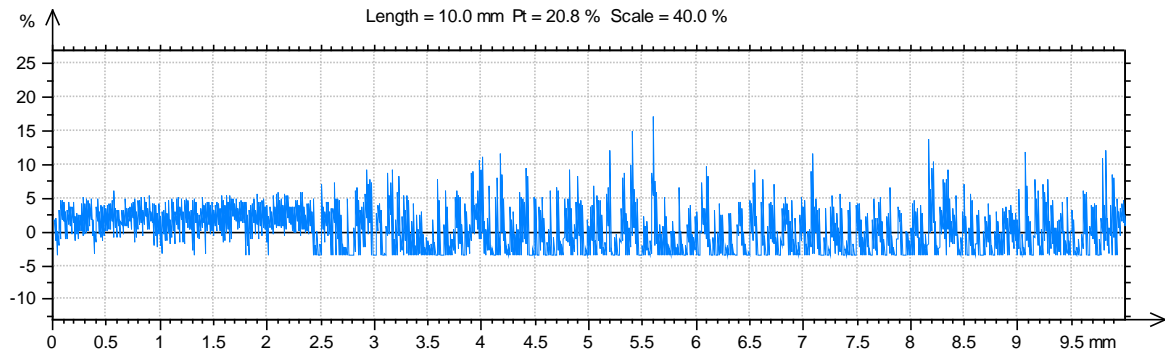


Figure S5. (b): Intensity profile of LSG

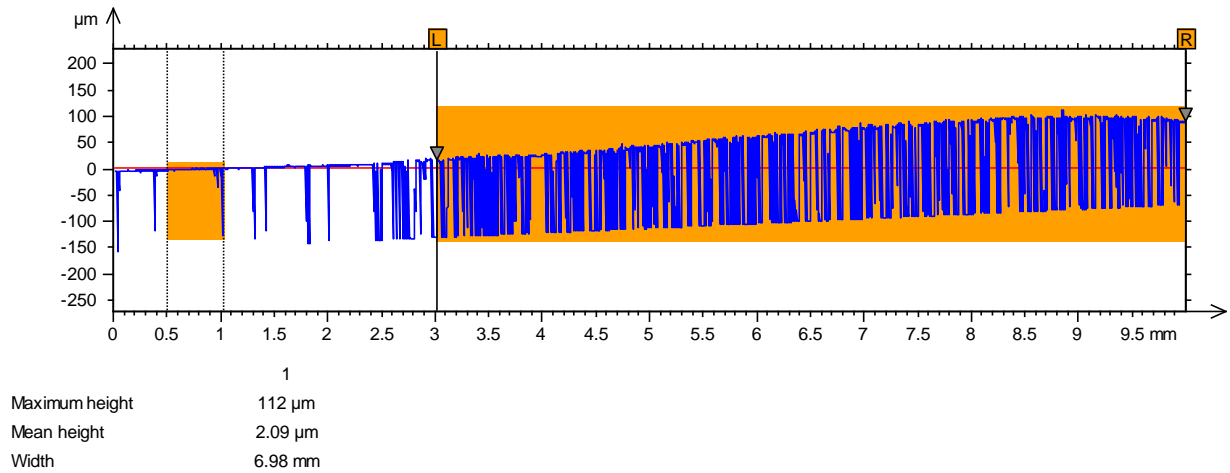


Figure S5. (c): Thickness profile of LSG

Optical profilometry of multiwalled carbon nanotubes intercalated laser scribed graphene (LSG+MWCNTs)

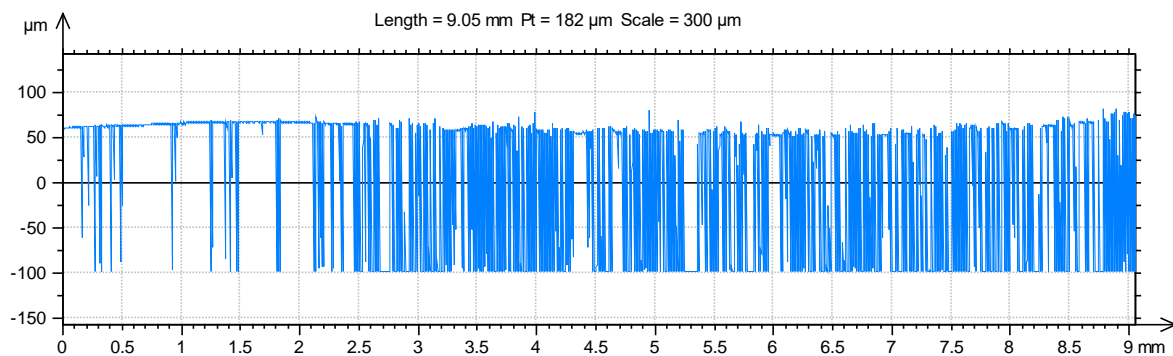


Figure S6. (a): Height profile of LSG+MWCNTs

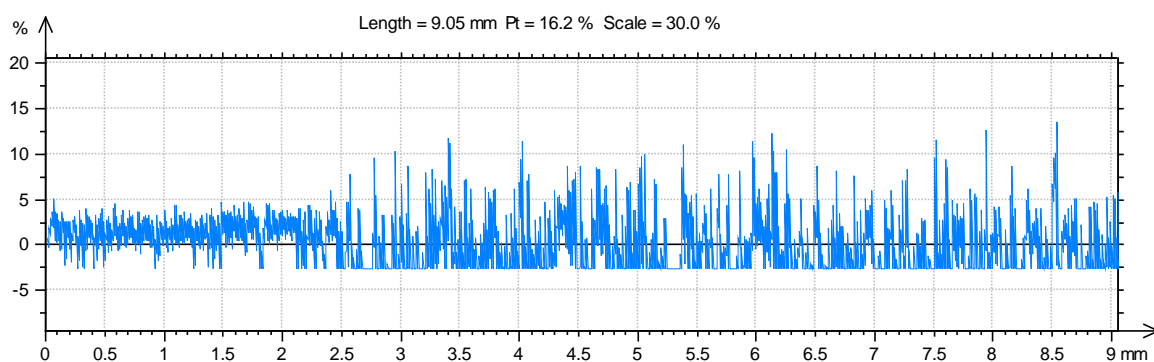


Figure S6. (b): Intensity profile of LSG+MWCNTs

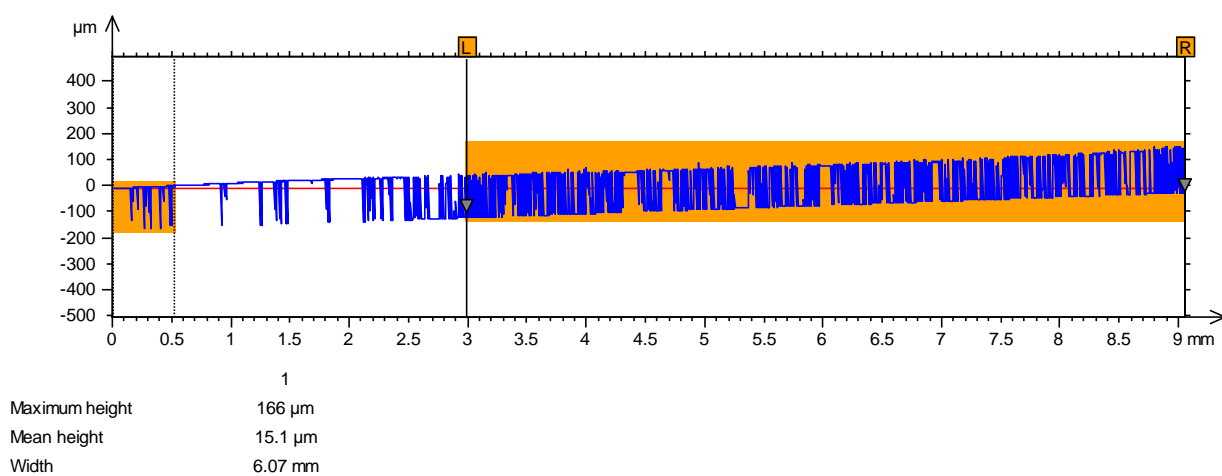


Figure S6. (c): Thickness profile of LSG+MWCNTs

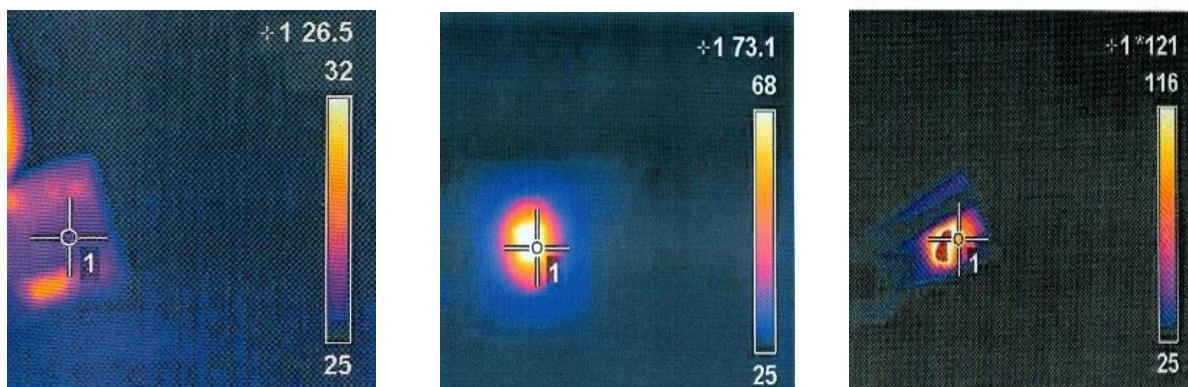


Figure S7. Thermal images of thermophones by applying (a) 0V to LSG based thermophone, (b) 9V DC to LSG based thermophone, (c) 9V DC to LSG+MWCNTs based thermophone