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ARTICLE TYPE

Supporting Information

A New Single/Few-layered Graphene Oxide with Giant Dielectric Constant of 10^6: *Contribution of defects and functional groups*

K. Santhosh Kumar[a], Suresh Pittala[b], Srinath. Sanyadanam[b] and Pradip Paik*[a]

Received (in XXX, XXX) Xth XXXXXXXXX 20XX, Accepted Xth XXXXXXXXX 20XX
DOI: 10.1039/b000000x

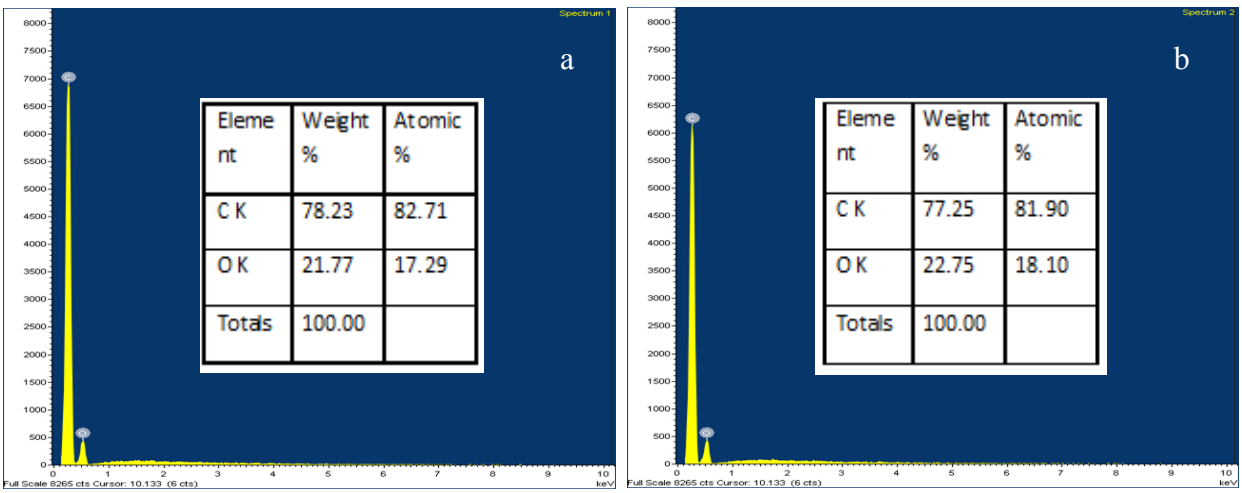
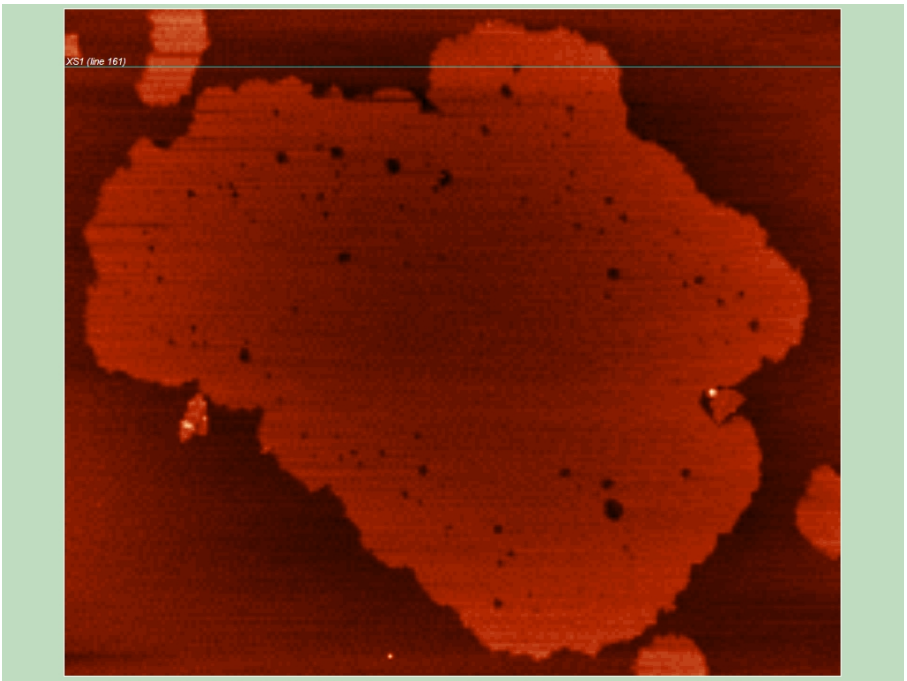


Figure S1. (a & b) EDX spectra of graphene oxide at various positions on the sample.



[Figure 1 (e) with representative line for height profile]

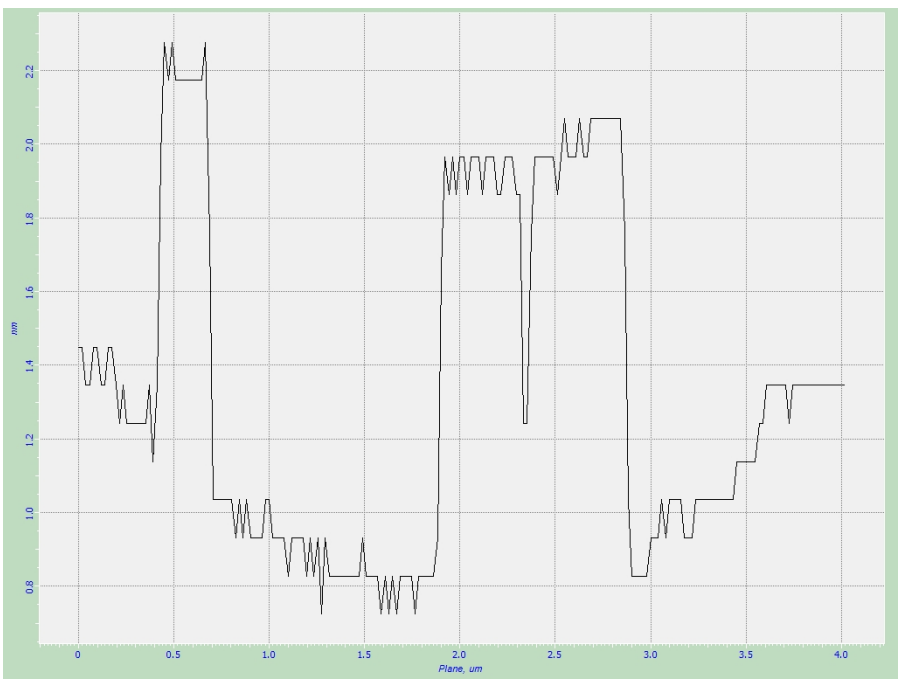


Figure S1 (c)

Figure S1 (c). Representative surface height profile showing the shallow for the defects at 2.3 μm. This profile has been acquired from the figure 1(e)

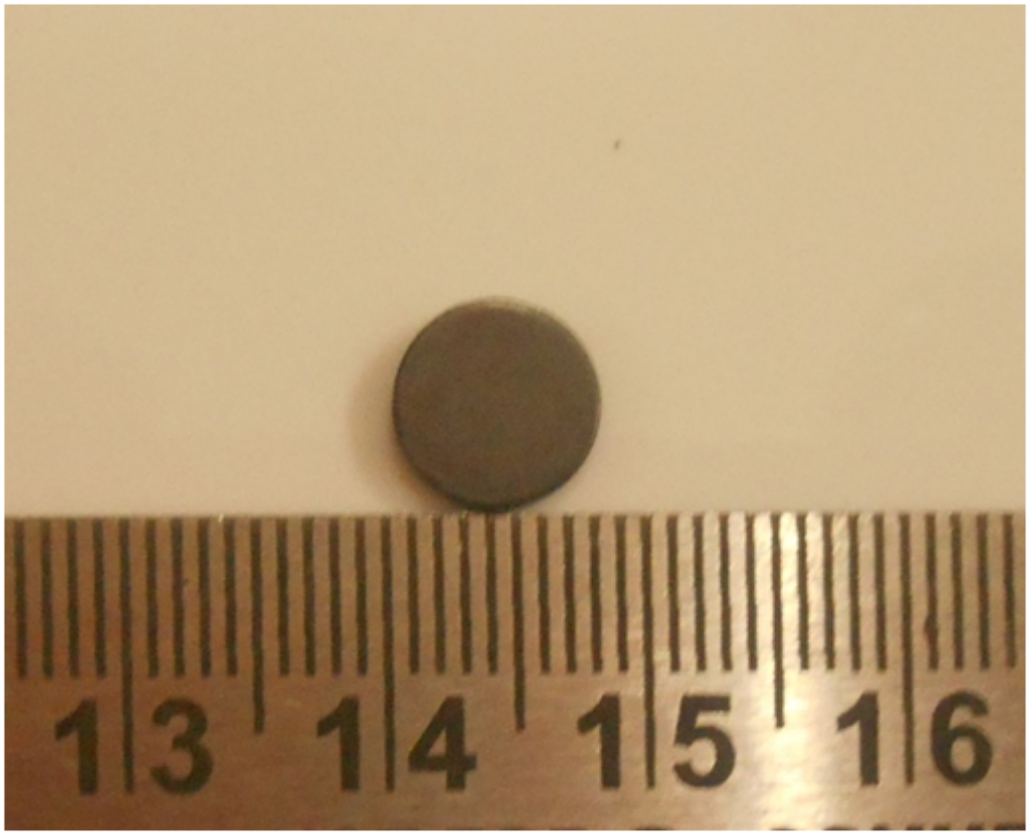


Figure S2. Image of the GO pellet used for measuring the dielectric behaviour

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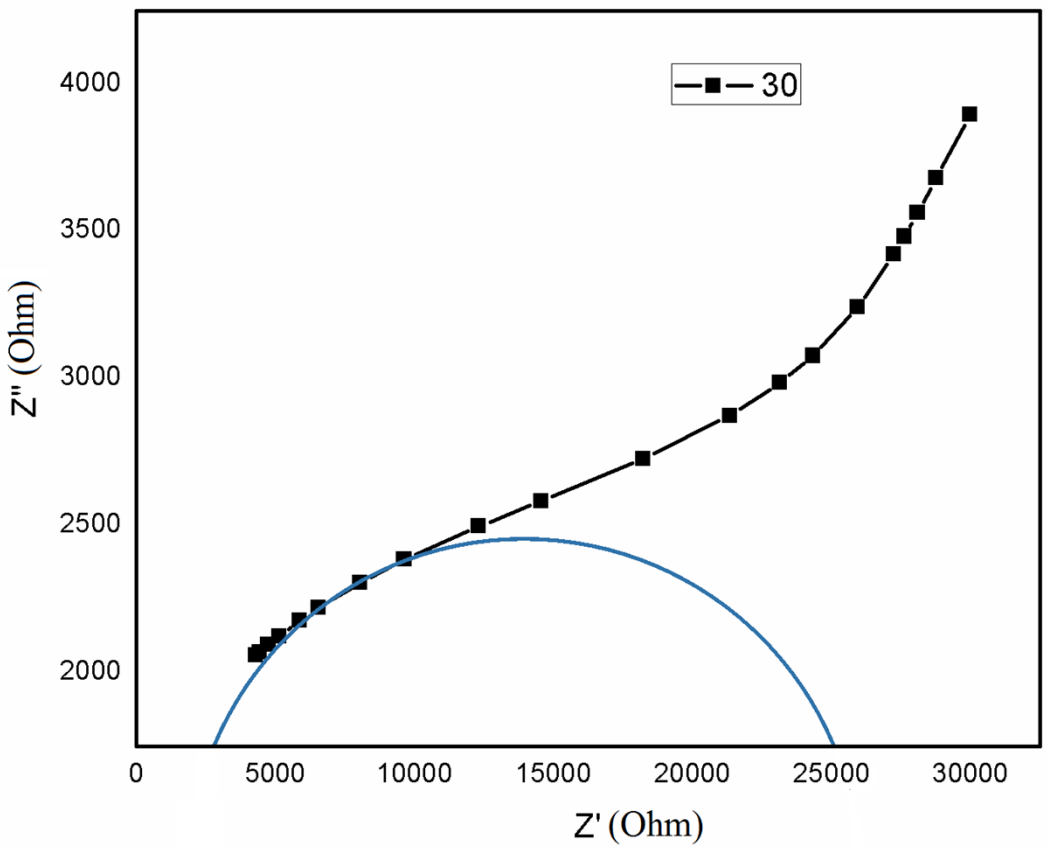

Figure S3. Cole-Cole fitting of GO at 30°C

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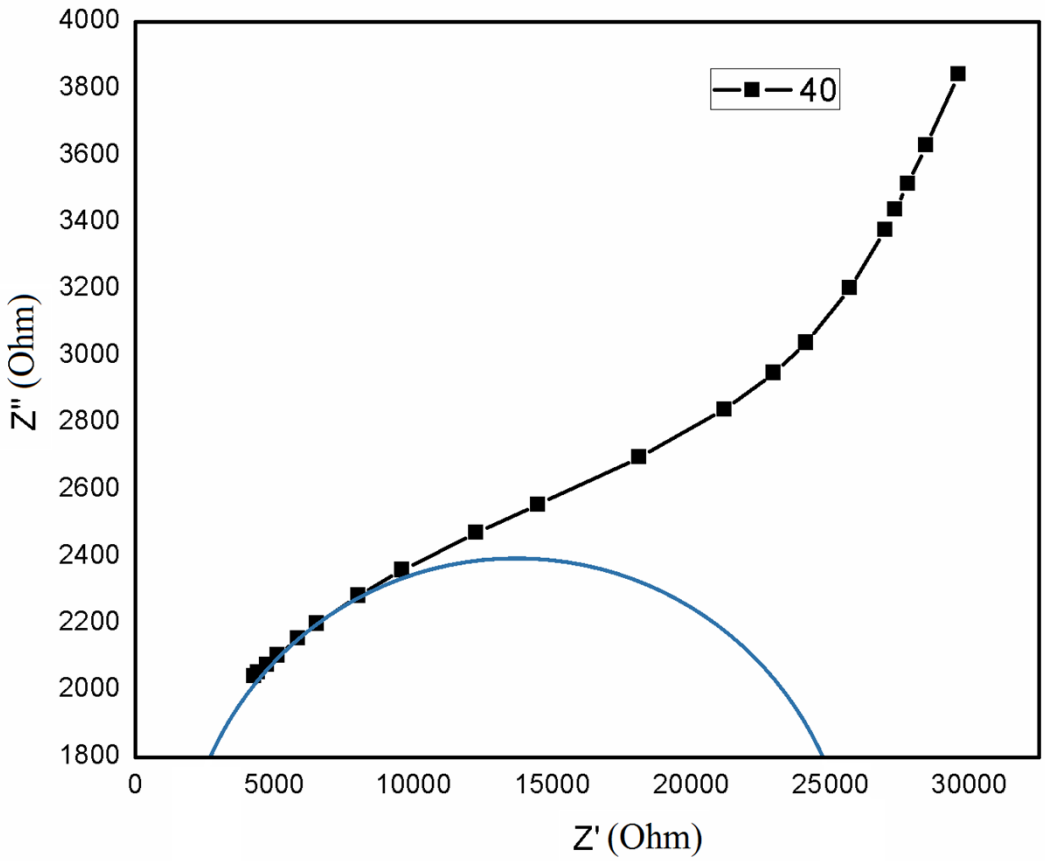

Figure S4. Cole-Cole fitting of GO at 40°C

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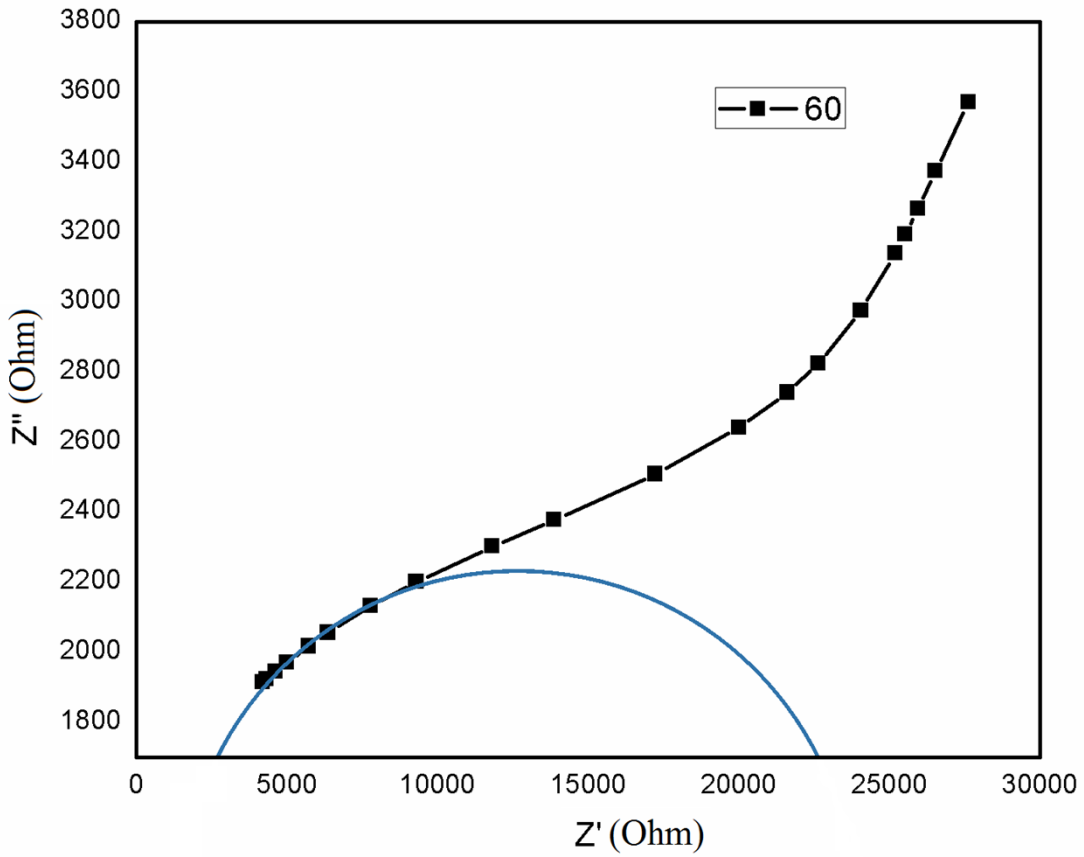

Figure S5. Cole-Cole fitting of GO at 60°C

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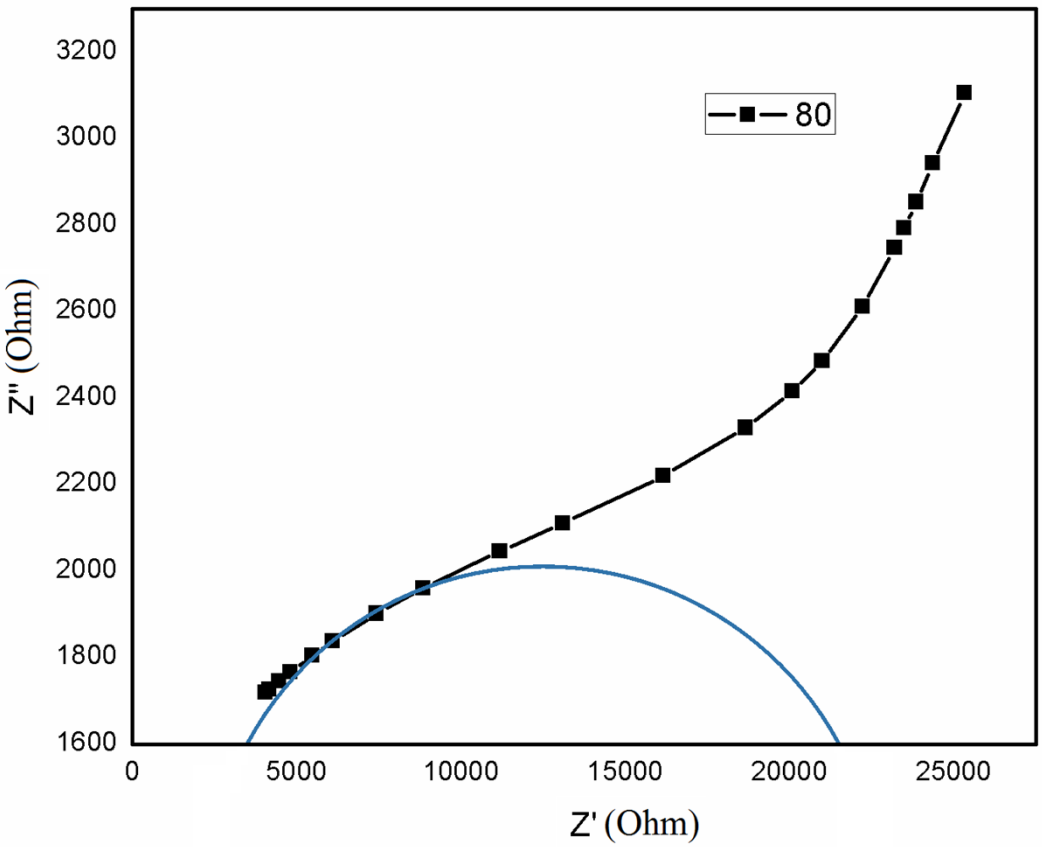

Figure S6. Cole-Cole fitting of GO at 80°C

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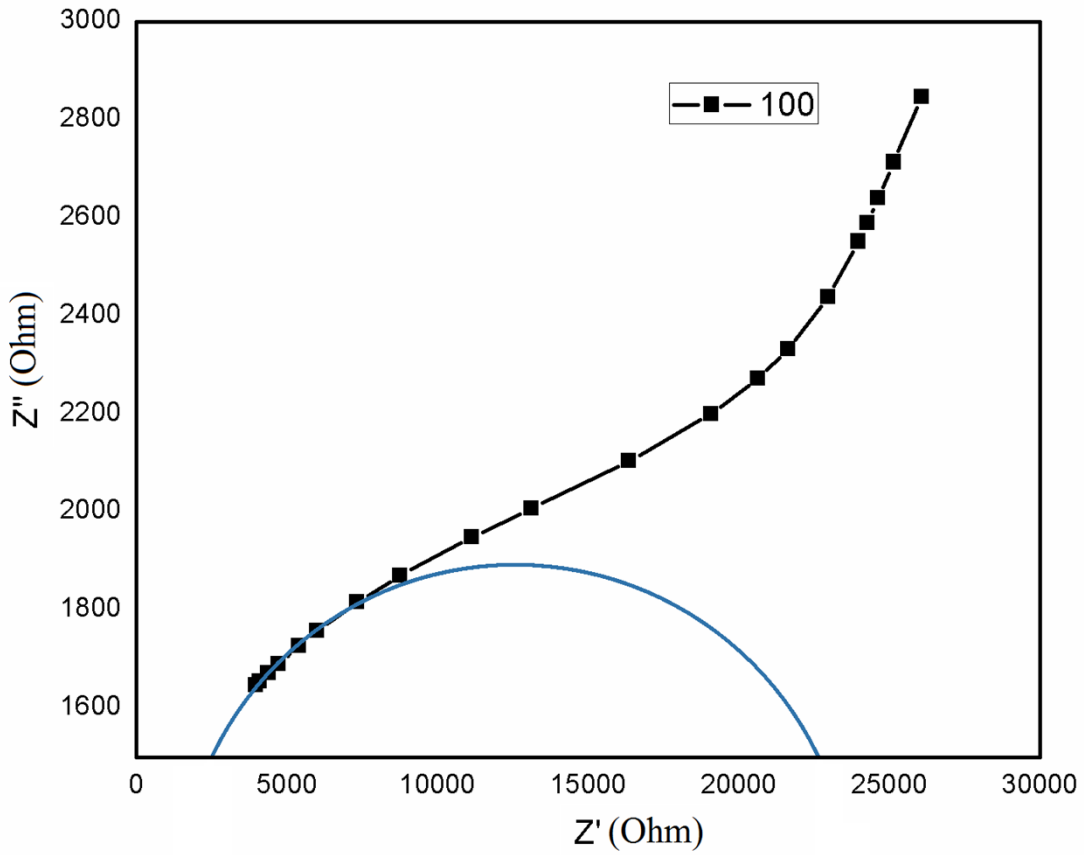

Figure S7. Cole-Cole fitting of GO at 100°C

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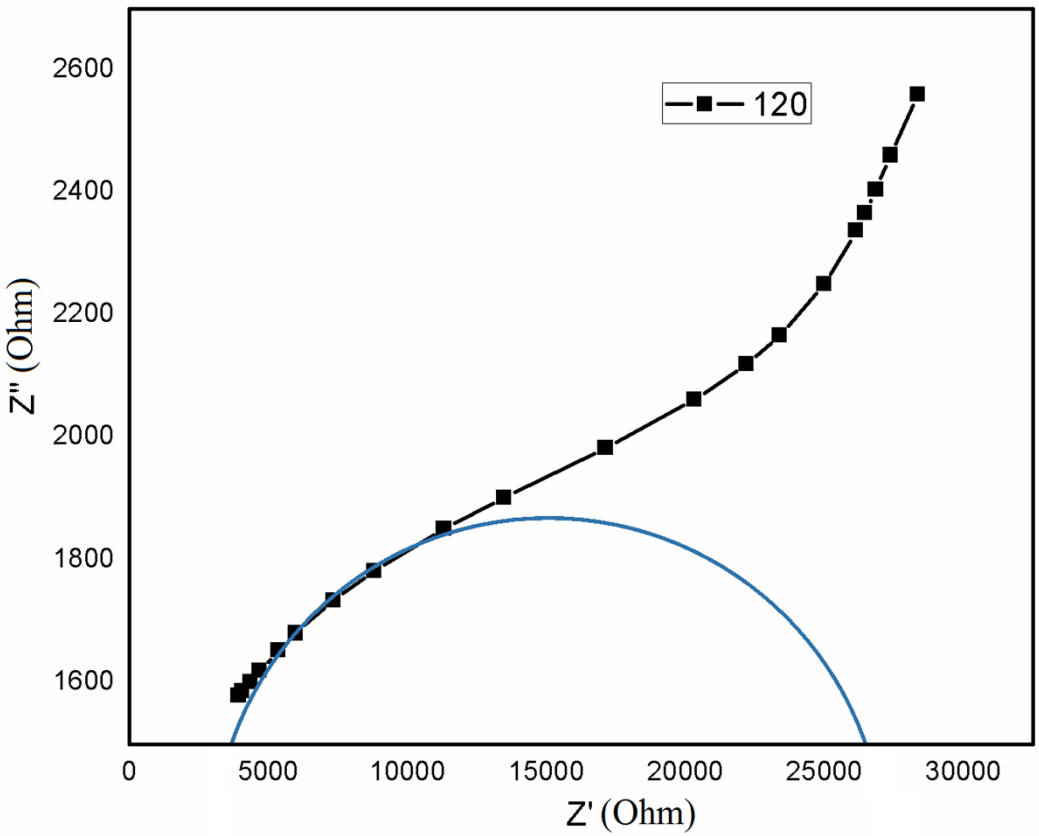

Figure S8. Cole-Cole fitting of GO at 120°C

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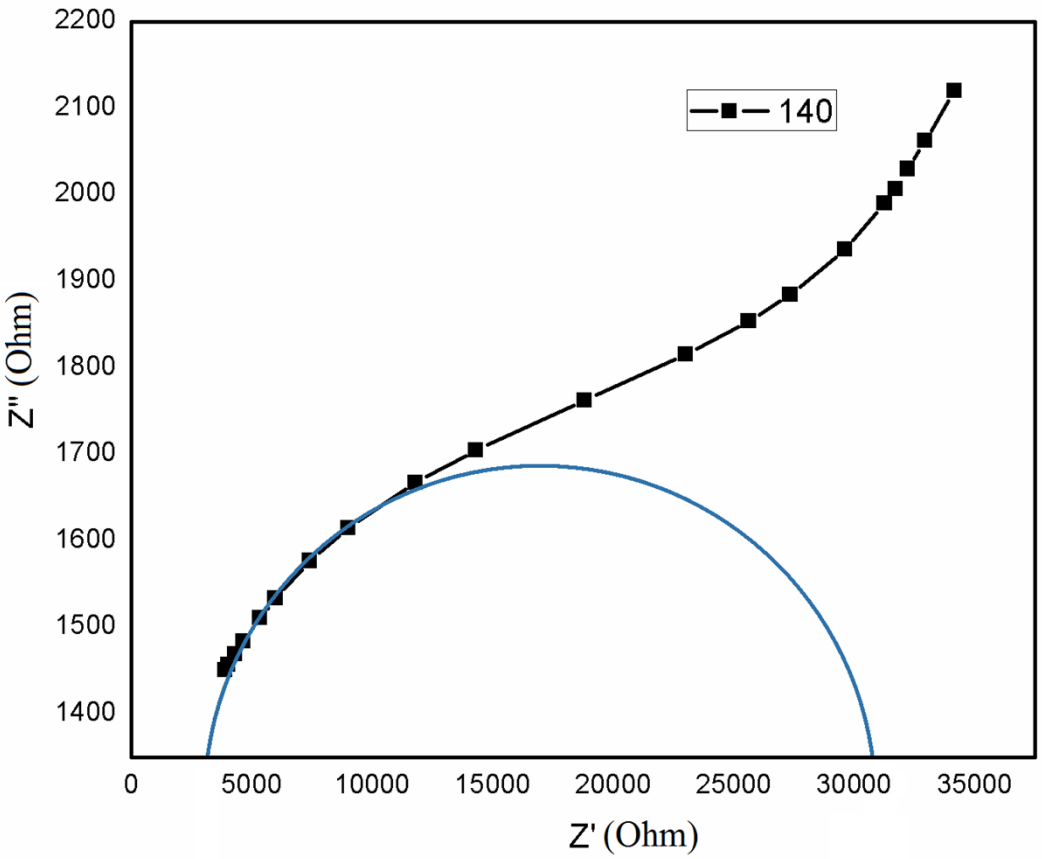

Figure S9. Cole-Cole fitting of GO at 140°C

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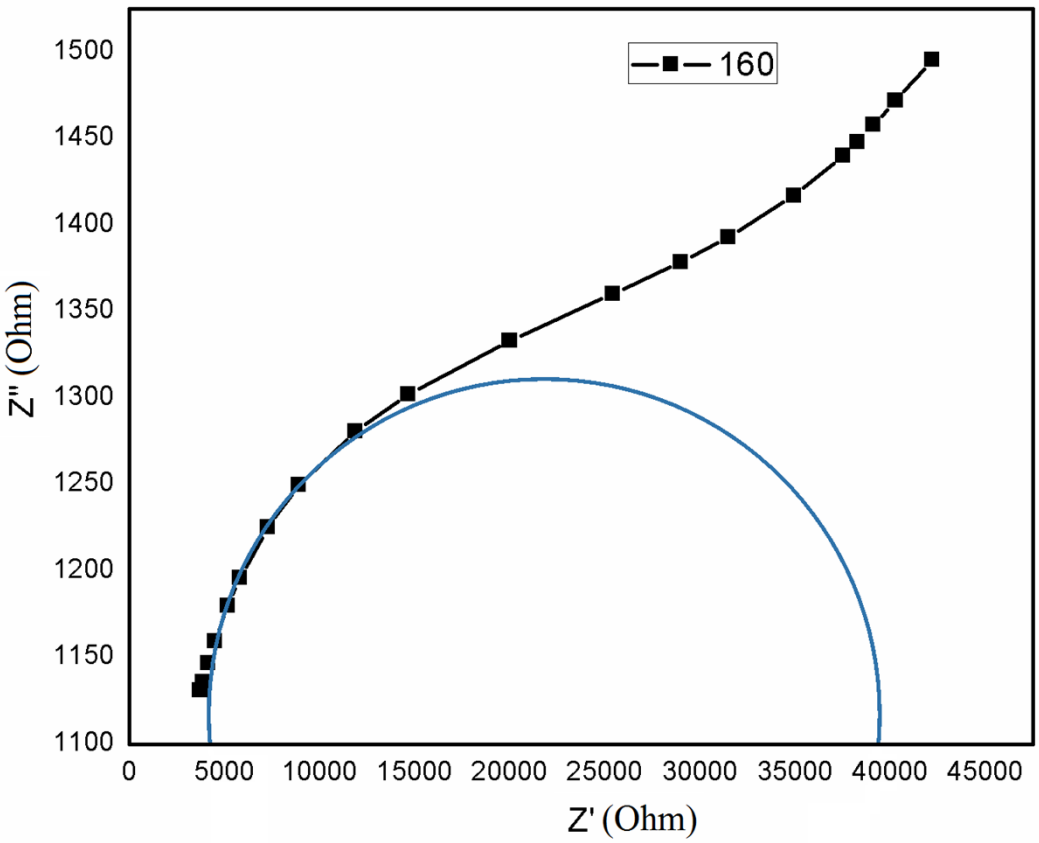

Figure S10. Cole-Cole fitting of GO at 160°C

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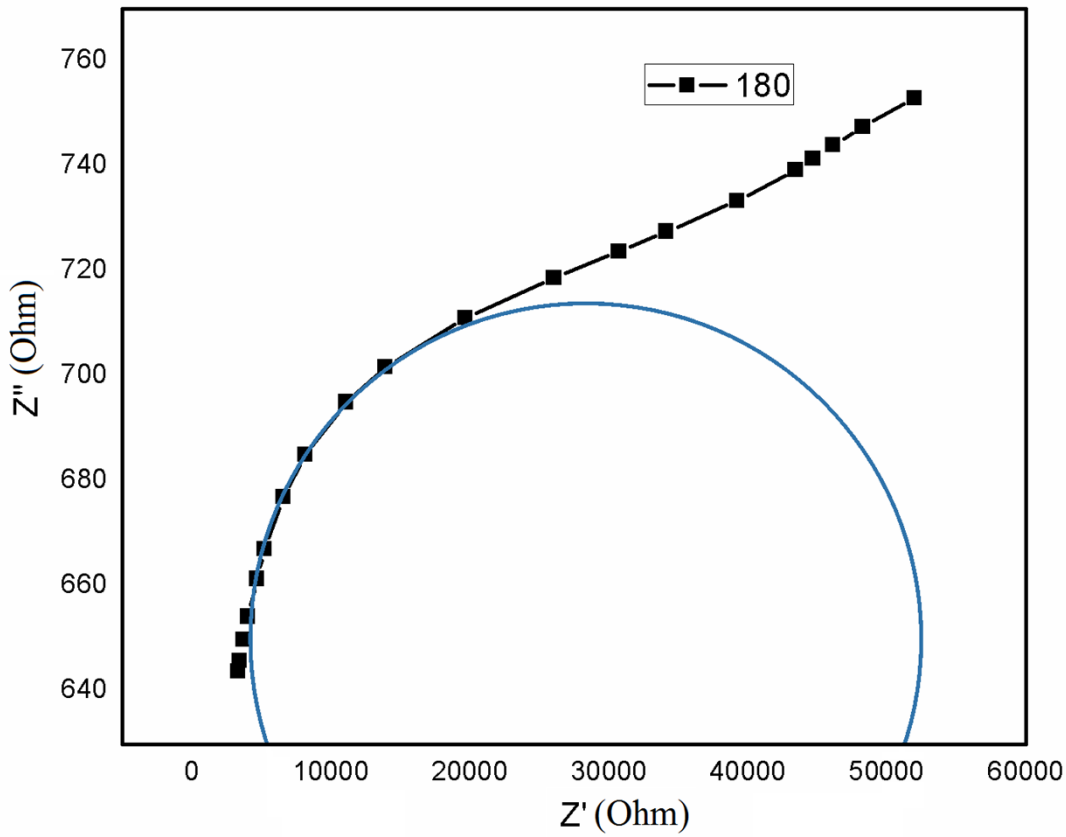

Figure S11. Cole-Cole fitting of GO at 180°C

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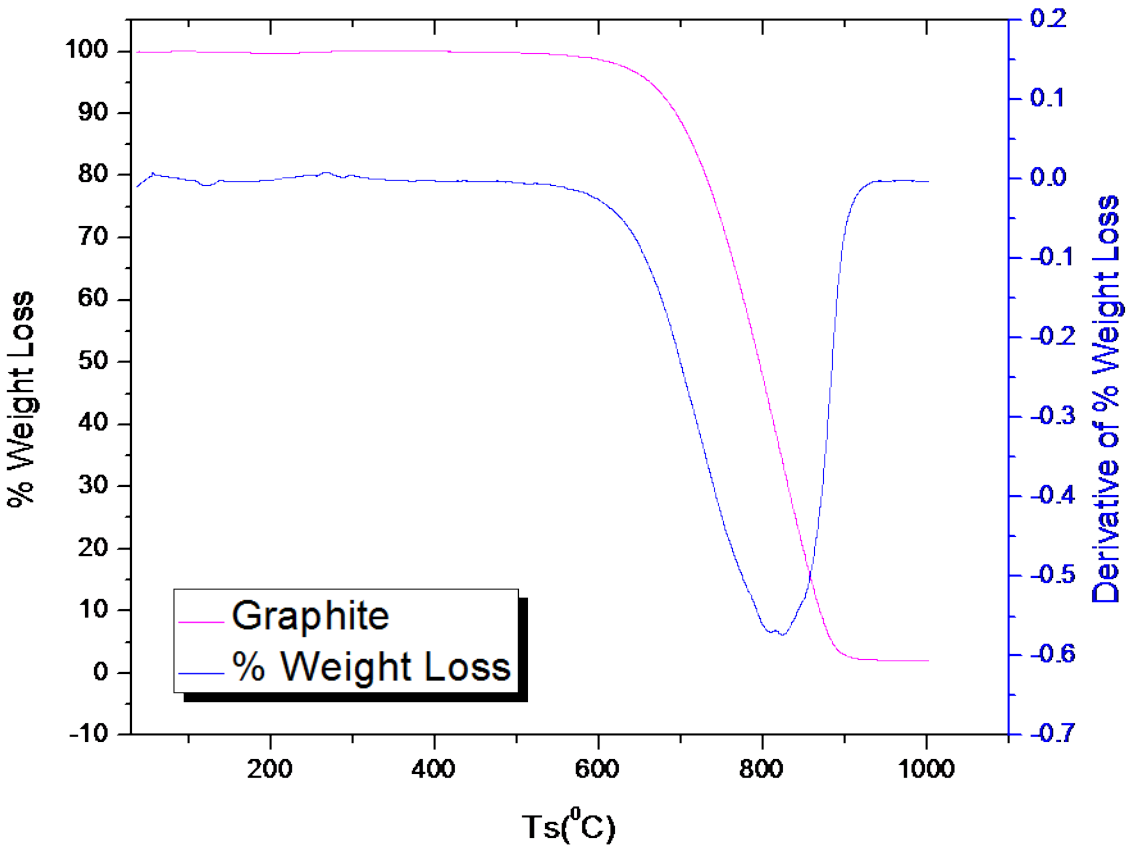

Figure S12. TGA Plot of Graphite and its derivative

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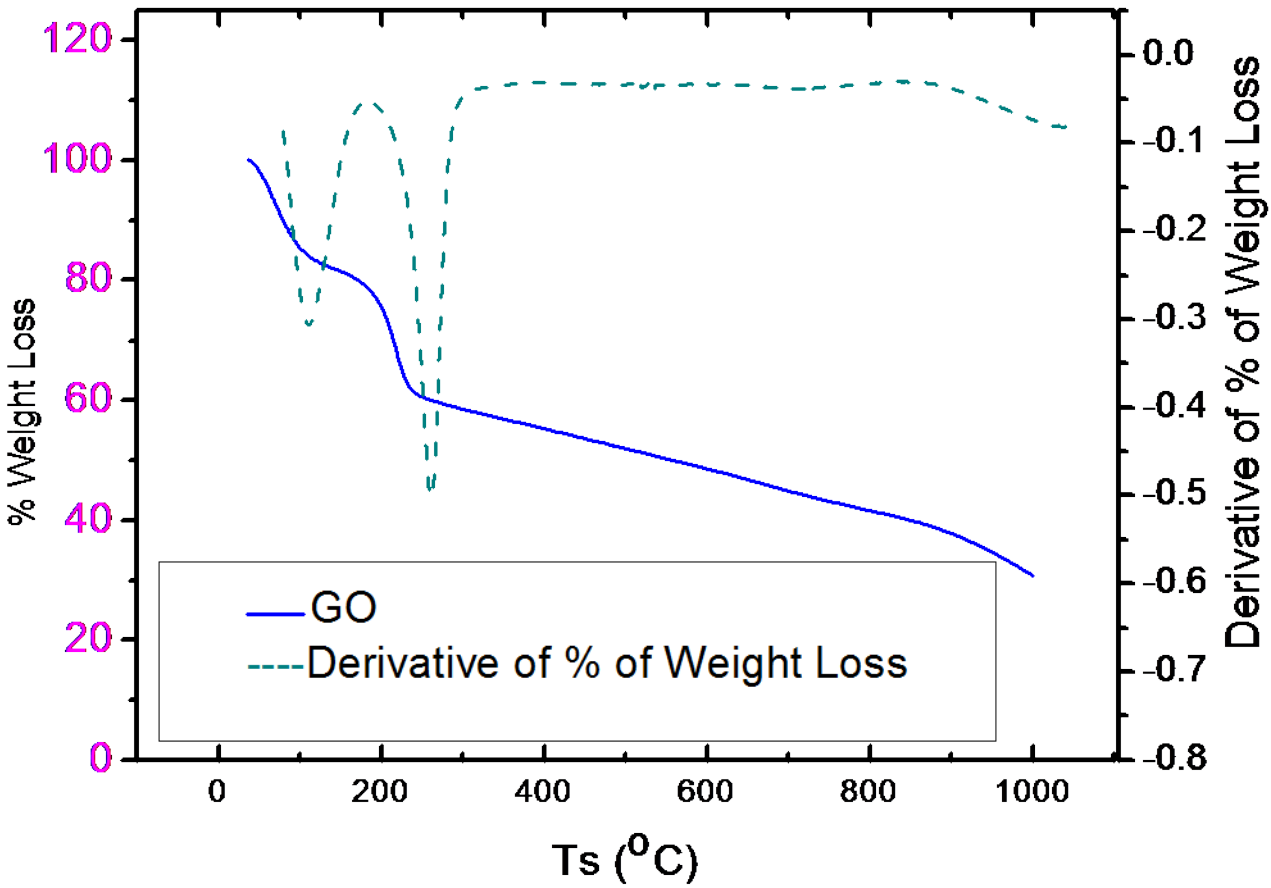

Figure S13. TGA Plot of GO and its derivative

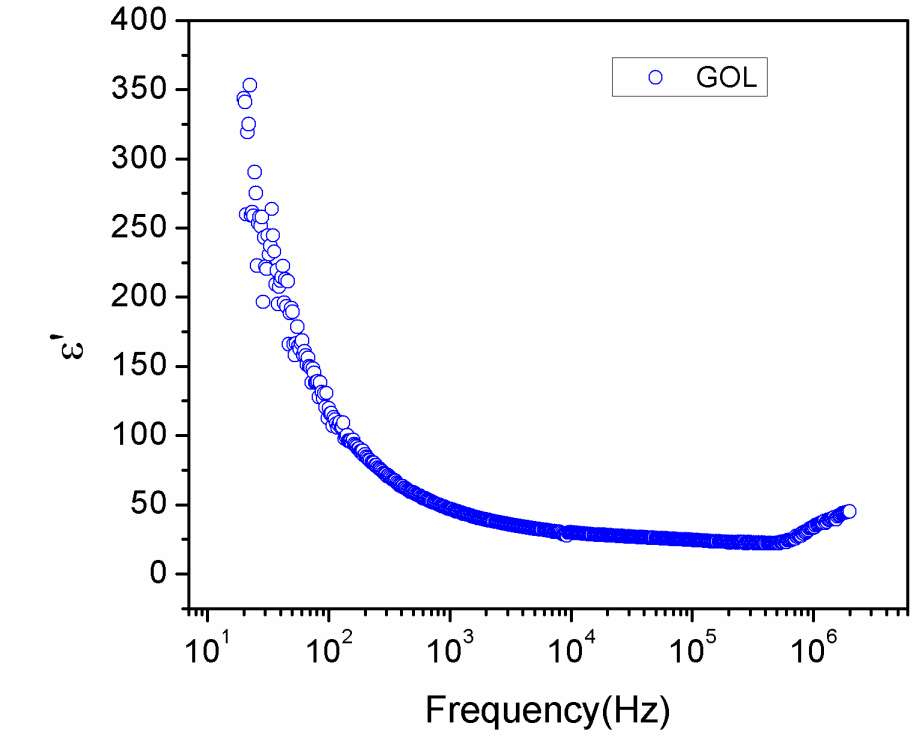

Figure S14. Dielectric Constant versus frequency graph for GOL which is not sonicated (less-functionalized/less-defective) during oxidation reaction.

Table S2: for elemental analysis from EDX for GOL.

Element	Weight%	Atomic%
C K	92.13	95.04
O K	6.27	4.86
Au M	1.60	0.10
Totals	100.00	

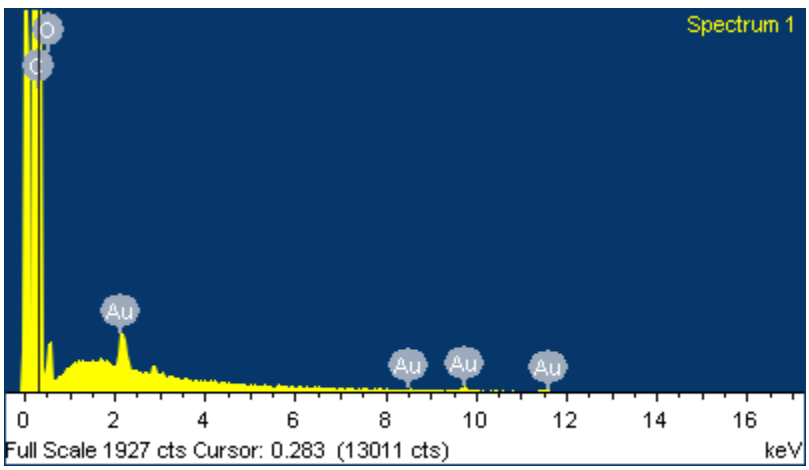

Figure S 15. EDX profile for elemental analysis for GOL