Electronic Supplementary Material (ESI) for Nanoscale.

Self-propagated combustion synthesis of a few layer graphene: An optical properties perspective

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Supporting Information

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Table 1: Milestones in exfoliating graphite and graphene synthesis

Year	Precursor	Method of Exfoliation	Treatment	Applications	Ref
1958	Graphite	Chemical	Intercalation	-	[1]
1987	HOPG	Chemical	Intercalation	-	[2]
1993	Natural graphite	Laser assisted	Intercalation	-	[3]
2004	HOPG	Mechanical	Scotch-Tape	Logic circuits, p-n junctions and non-transistor	[4]
2004	SiC	Epitaxial growth	Sublimation	Electronics and Optoelectronics	[5]
2006	Camphor	CVD	Thermal pyrolysis	Large area electronic applications	[6]
2007	Graphite	Wet-chemical approach	Oxidation-Reduction	Hydrogen storage and electrically conducting filler in nanocomposites	[7]
2008	Ferrocene, Thiopene and ethanol	Aerosol pyrolysis	Ultra-sonication followed by thermal treatment	gas storage devices, electronic wires, sensors, catalytic substrates, field emission sources, batteries	[8]
2008	Graphite	Electro-chemical Exfoliation	Ionic-liquid assisted process	Biological labelling and imaging	[9]
2009	Graphite	Electrolytic Exfoliation	Electrolysis	Electronics, composite materials, molecular gas sensor, energy storage	[10]
2009	SWCNT/ MWCNT	Unzipping of CNTs	Annealing	Electronics, Energy storage devices and batteries	[11]
2009	Graphite electrode	Arc-discharge method	Arc evaporation in the presence of H_2	Electronics applications	[12]
2009	GO	Self-assembly	Electrostatic Interaction	Molecular sensor, transparent electronics	[13]
2010	Graphite	Sono-chemical Exfoliation	Ultra-sonication in highly reactive solvent	Preparation of graphene based nanocomposite materials	[14]
2012	Graphite	Combustion	Self-propagating flame method	Schottky solar cells and energy storage devices	[15]

Supporting Information S1:

Table 2. Comparison of measured parameters of RGO synthesized through different approaches

Precursor/Reduction method	C/O	I_D/I_G	Ref
GO/Hydrazine hydrate	10.3	>1	[7]
GO/Sulfonic acid groups	C/S=35	-	[16]
GO/$NaBH_4$	5.3	>1	[17]
GO/Hydrothermal	5.6	0.90	[18]
GO/Solvothermal	6.4	1.16	[19]
GO/pre-reduction by $NaBH_4$ and heating in H_2SO_4 at 200 °C	8.57	1.0	[20]
GO/Electrolytic exfoliation	-	>1	[10]
GO/Thermal Exfoliation (1000 °C- >2000 °C)	10.3	-	[21-23]
GO/Microwave	5.46	0.96	[24]
GO/Thermal treatment (DMF)	-	1.06	[25]
GO/photoreduction in H_2	4.1	1.02	[26]
GO/ Photoreduction (sunlight)	3.54	1.06	[27]
GO/Fe	7.9	0.32	[28]
GO/Al powder	-	1.81	[29]
GO/Photocatalytic (ZnO)	33.5	>1	[30]
GO/organic solvents-DMF DMSO NMP	2.8 4.0 4.4	-	[31]
Self-propagating solid state reduction of GO	5.9	-	[32]

Supporting Information S2:

Propagative exfoliation of graphite	-	1.98	[33]
Self-propagating combustion based exfoliation of graphite	8.74	1.2	This Work

Supporting Information S3:

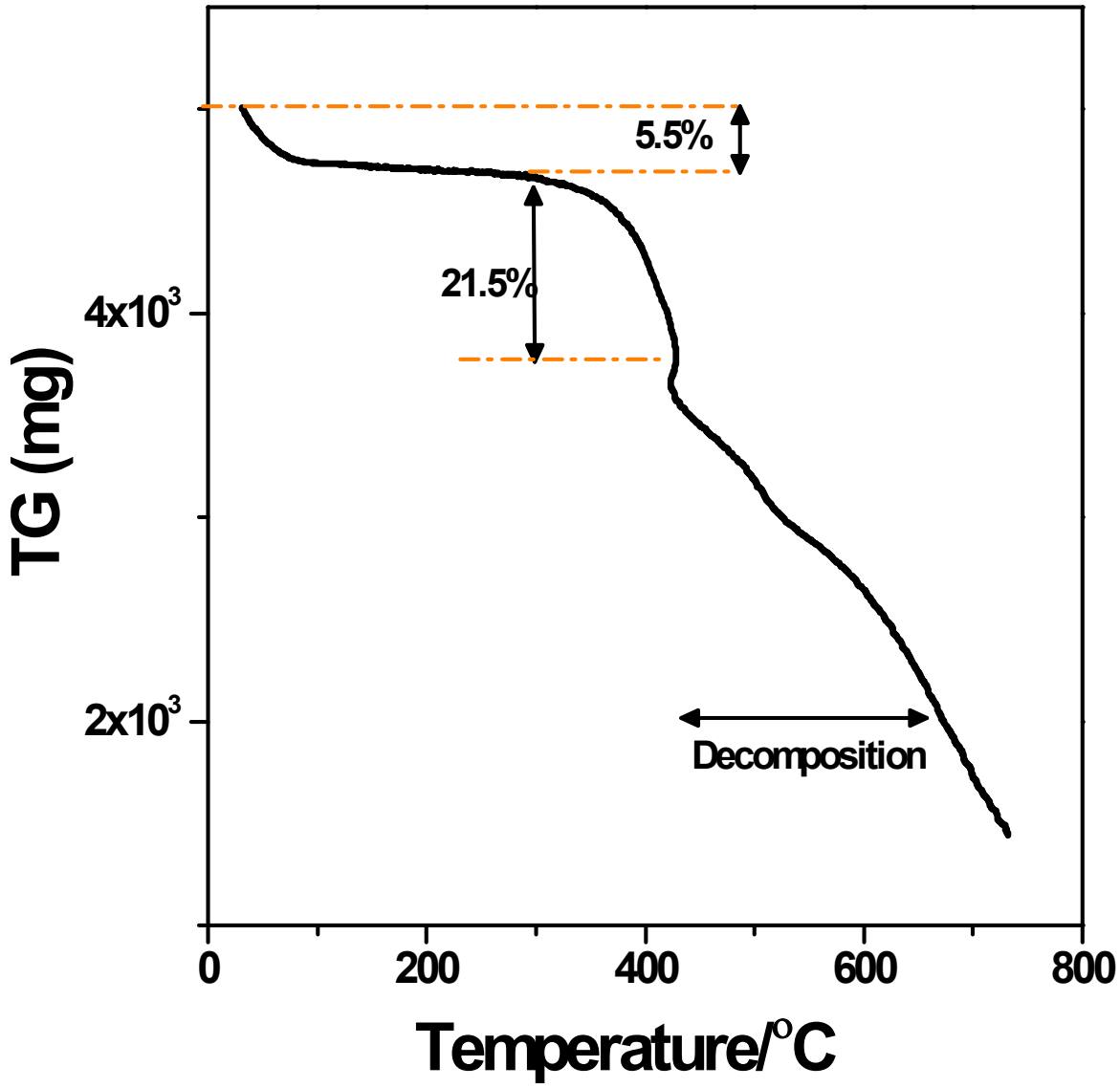

Figure S1: TG Plot of RGOL sample

Supporting Information S4:

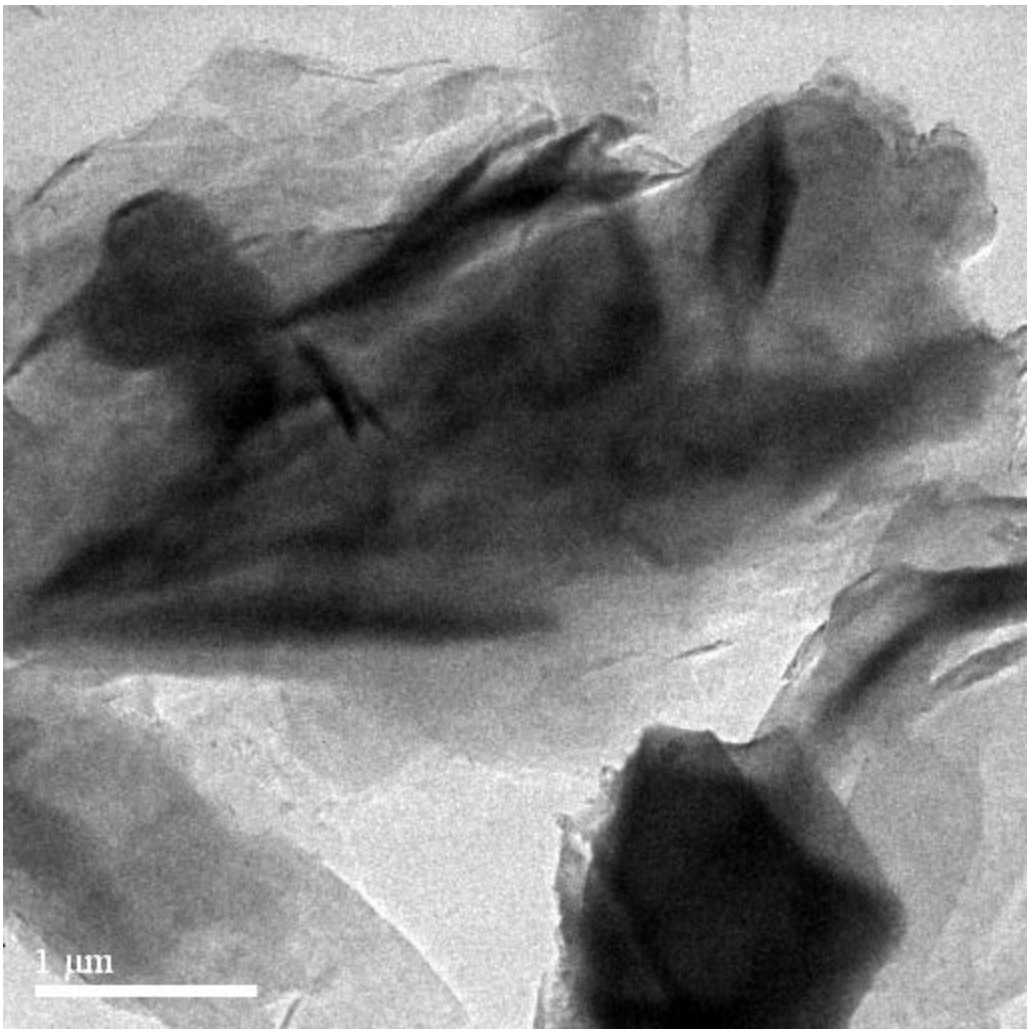

Figure S2: TEM image of micron sized RGOL sheet

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