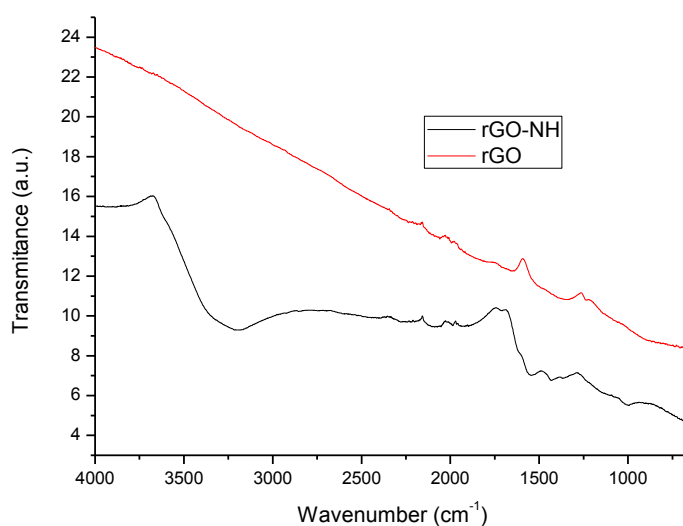


## Reduced Graphene Oxide-NH Characterization sheet

Reported data: FTIR Spectroscopy, Scanning Electron Microscopy, X-ray diffraction (XRD), X-ray Photoelectron Spectroscopy (XPS), elemental analysis, Zeta-potential, amount of NH groups and conductivity.

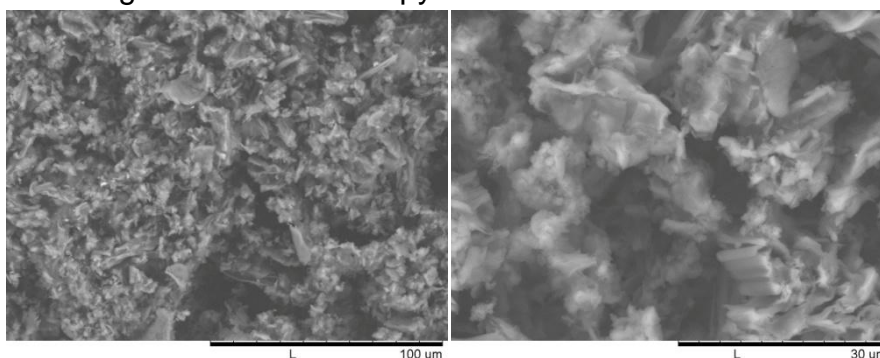


- FTIR Spectroscopy: Attenuated Total Reflectance (ATR)

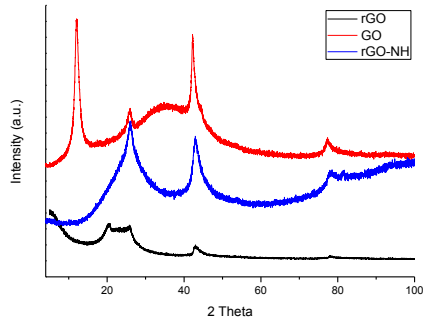


Assignment (cm<sup>-1</sup>): For rGO-NH 1550 (N-H bending), 1433 (C-N stretching).

- Scanning Electron Microscopy



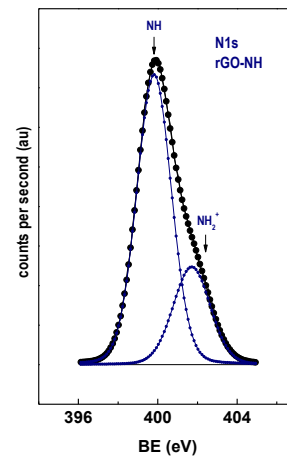
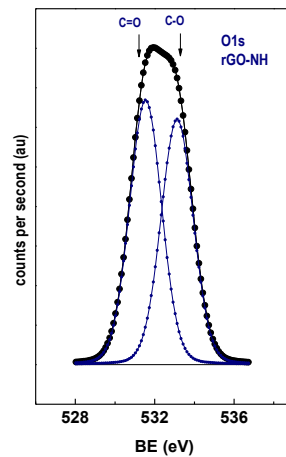
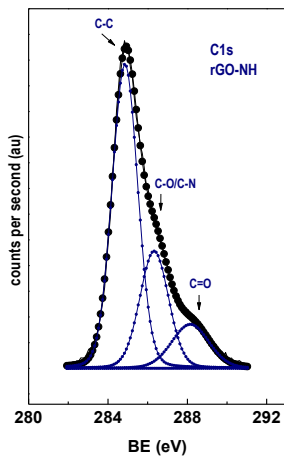
- XRD



XRD pattern of GO, rGO and rGO-NH.

- XPS

	<b>C1s</b>	<b>O1s</b>	<b>N1s</b>	<b>O/C atomic ratio</b>	<b>N/C atomic ratio</b>
GONH	284.8 (57) 286.3 (31) 288.0 (12)	531.5 (45) 532.9 (55)	399.7 (73) 401.7 (27)	0.202	0.091
rGONH	284.8 (61) 286.3 (26) 288.1 (13)	531.5 (52) 532.9 (48)	399.8 (73) 401.7 (27)	0.157	0.083
GO	284.8 (38) 286.6 (54) 288.4 (8)	531.5 (21) 532.7 (79)	--	0.655	--

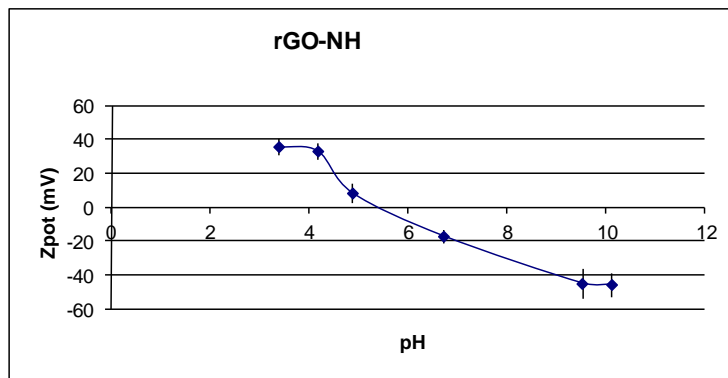


Binding energies (eV) and deconvoluted peaks (%) for C1s, O1s and N1s core levels.

- Elemental analysis

	%C	%H	%N	%S
GO-NH	59.58	3.79	5.33	0.11
rGO-NH	66.58	2.83	5.27	0.05
GO	53.24	2.51	0.04	0.91

- Zeta-potential



Zeta-potential versus pH curve for rGO-NH.

- Amount of NH groups

In order to estimate the amount of NH groups in rGO-NH a reaction with 4-bromobenzyl chloride was performed and the Br amount was quantified by X-ray fluorescence spectroscopy. The value obtained corresponds to 0.13 mmol/g.

- Conductivity

Conductivity of pressed pellets of rGO-NH is 70.75 S/m.