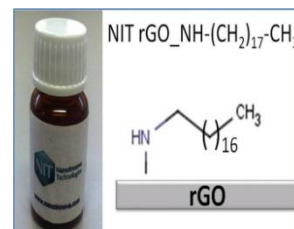
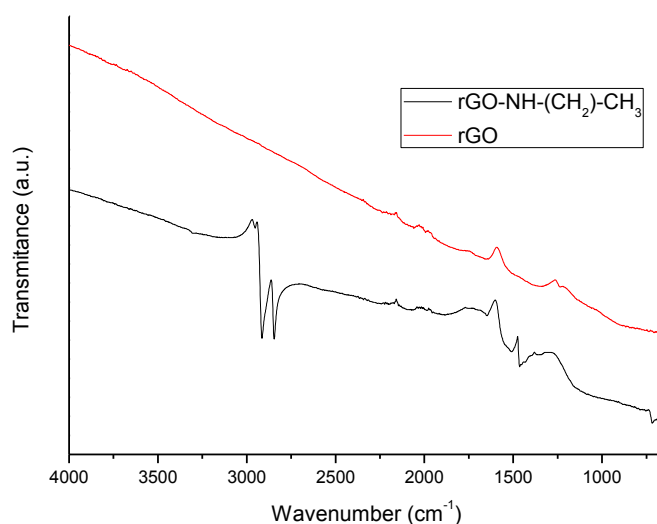


Reduced Graphene Oxide-NH-(CH₂)₁₇-CH₃ Characterization sheet

Reported data: FTIR Spectroscopy, Scanning Electron Microscopy, X-ray diffraction (XRD), X-ray Photoelectron Spectroscopy (XPS), elemental analysis, solid state ¹³C Nuclear Magnetic Resonance (NMR), distribution in water/dichloromethane, amount of functionalization and conductivity.

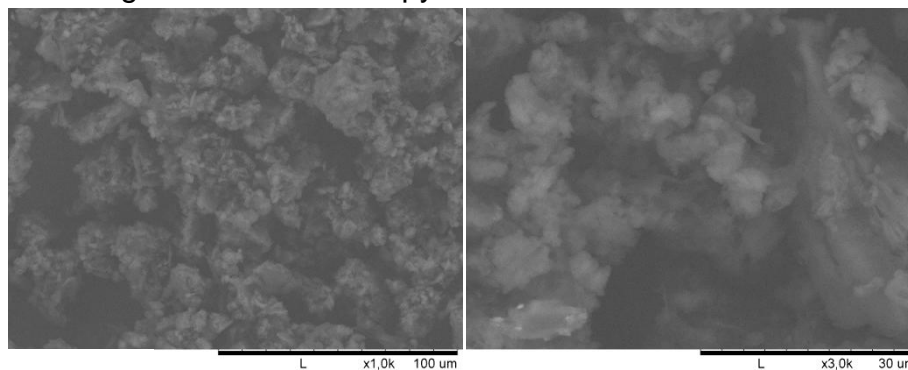


- FTIR Spectroscopy: Attenuated Total Reflectance (ATR)

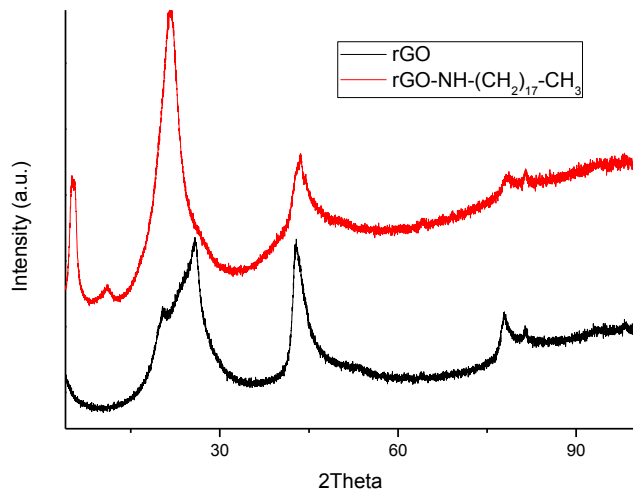


Assignment (cm⁻¹): 2915, 2846, 1538 and 1465.

- Scanning Electron Microscopy



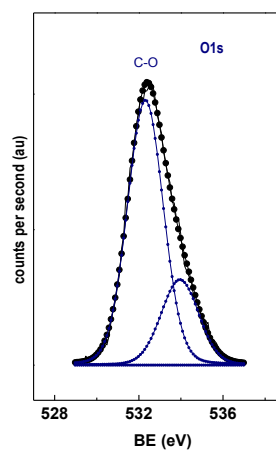
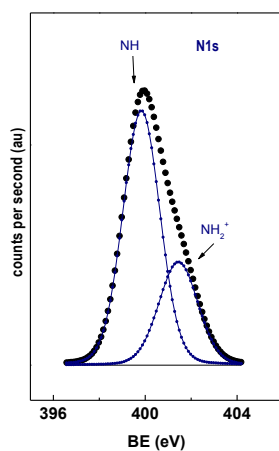
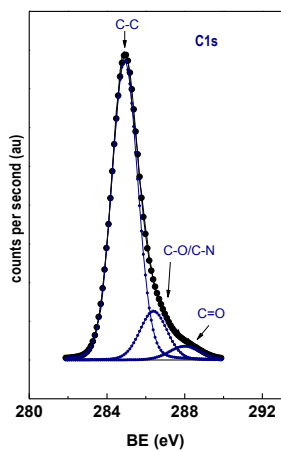
- XRD



XRD pattern of rGO and rGO-NH-(CH₂)₁₇-CH₃. The peak at 2θ = 5.1 ° is related to the longer interplanar distance of graphene due to octadecylamine chains.

- XPS

	C1s	O1s	N1s	O/C at.	N/C at.
rGO-NH-(CH ₂) ₁₇ -CH ₃	284.8 (82) 286.4 (14) 288.0 (4)	532.3 (75) 534.0 (25)	399.8 (70) 401.4 (30)	0.067	0.031
GO	284.8 (38) 286.6 (54) 288.4 (8)	531.5 (21) 532.7 (79)	--	0.655	--

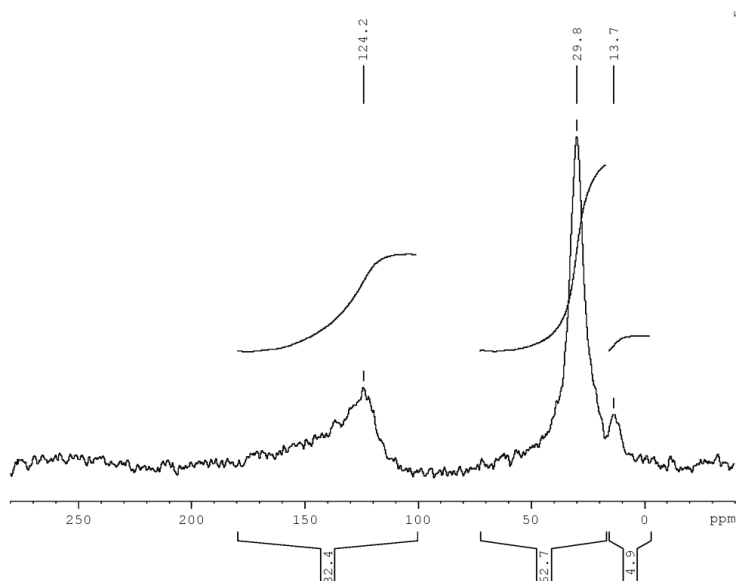


Binding energies (eV) and deconvoluted peaks (%) for C1s, O1s and N core levels.

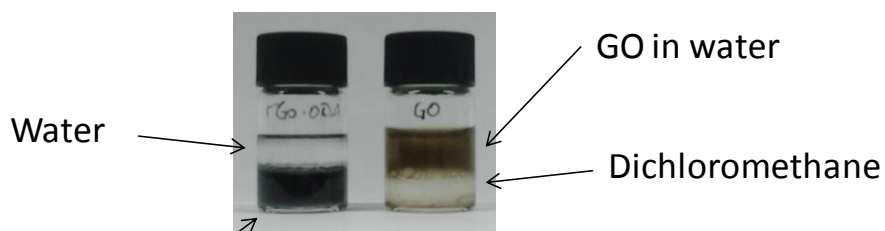
- Elemental analysis

	%C	%H	%N	%S
rGO-NH-(CH ₂) ₁₇ -CH ₃	80.91	8.22	3.11	0.02
GO	53.24	2.51	0.04	0.91

- Solid-state ¹³C NMR



- Distribution of rGO-NH-(CH₂)₁₇-CH₃ (left) and graphene oxide (right) in a mixture of water (up) and dichloromethane (down) showing hydrophobicity of rGO-NH-(CH₂)₁₇-CH₃.



rGO-NH-(CH₂)₁₇-CH₃ in dichloromethane

- Amount of ODA

In order to estimate the amount of octadecylamine chains in rGO-NH-(CH₂)₁₇-CH₃ a reaction with 4-bromobenzyl chloride was performed and the Br amount was quantified by the Schöniger flask test. The value obtained corresponds to 0.1 mmol of octadecylamine/g.

- Conductivity

Conductivity of pressed pellets of rGO-NH-(CH₂)₁₇-CH₃ is 6.36 S/m.