

ARTICLE

## Use of deuterium labelling – evidence of graphene hydrogenation by reduction of graphite oxide using aluminium in sodium hydroxide

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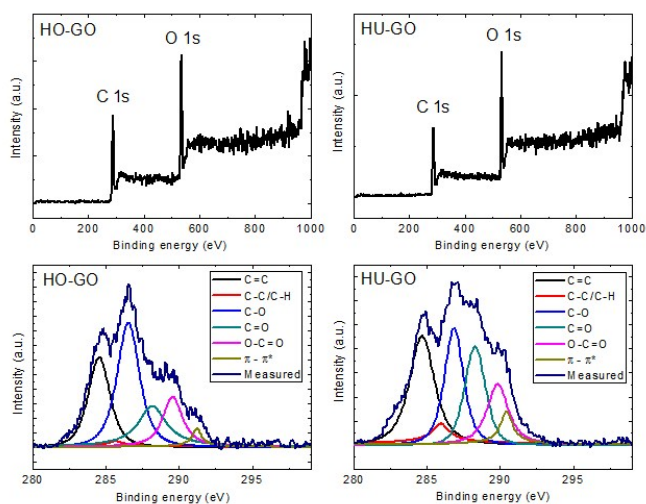
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Ondřej Jankovský<sup>a</sup>, Petr Šimek<sup>a</sup>, Michal Nováček<sup>a</sup>, Jan Luxa<sup>a</sup>, David Sedmidubský<sup>a</sup>,  
Martin Pumera<sup>b</sup>, Anna Macková<sup>c,d</sup>, Romana Mikšová<sup>c,d</sup> and Zdeněk Sofer<sup>\*a</sup>

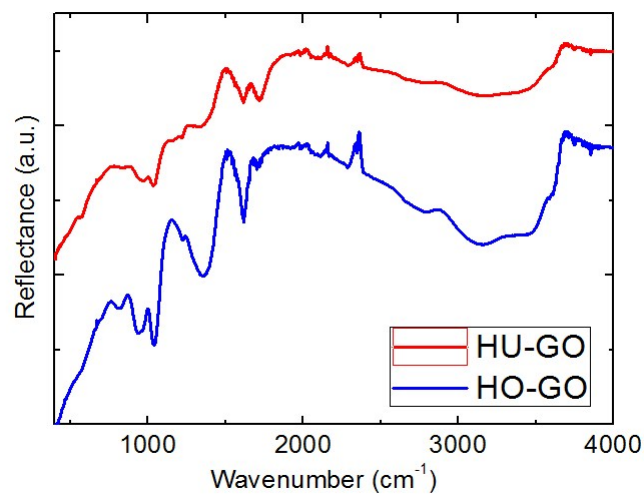
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## SUPPORTING INFORMATION



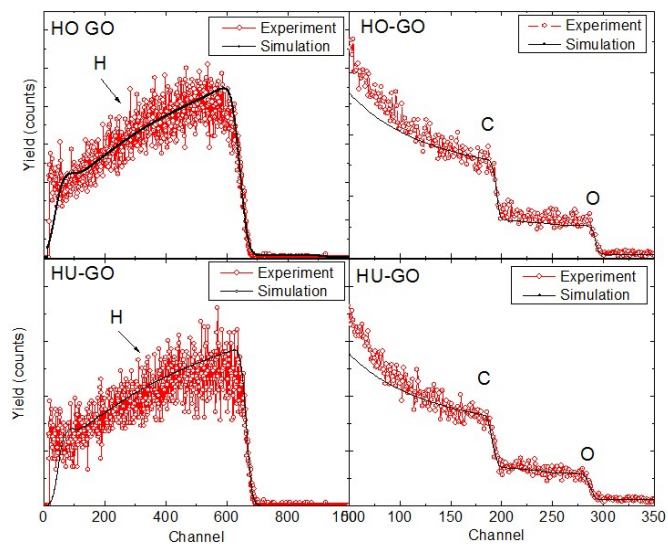
**Fig. S11** The Survey spectra of starting graphite oxide (upper images) and the corresponding high resolution XPS spectra of C 1s peak (lower images).



**Fig. S12** FT-IR spectra of the starting graphite oxide.

**Table SI A** The results of C 1s peak deconvolution with a quantification of different carbon bonding states for the starting graphite oxide material.

Sample	HO-GO	HU-GO
C=C	24.6	28.3
C-C/C-H	2.5	8.4
C-O	36.3	22.5
C=O	18.4	19.5
O-C=O	14.6	14.5
$\pi - \pi^*$	3.6	6.8



**Fig. S13** ERDA (left) and RBS (right) spectra of the starting graphite oxide. The composition of HO-GO is 71.4 at.% C, 19.9 at.% O and 8.7 at.% H. The composition of HU-GO is 72.9 at.% C, 17.8 at.% O and 9.3 at.% H.