

Effects of the laser irradiation on graphene oxide foils in vacuum and air *

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A Nd:YAG laser operating at 1064 nm was used to irradiate, at different intensities, graphene oxide foils placed in vacuum and in air. The laser irradiated GO foils were analysed successively by using different techniques such as 2.0 MeV alpha particle Rutherford backscattering spectrometry, X-ray photoemission spectroscopy and SEM-EDX. In particular, in vacuum irradiated graphene oxide samples the oxygen reduction has been observed with increment of the carbon content. In air irradiated GO samples an increase in oxygen has instead been highlighted. Furthermore thermal and chemical effects are induced by the photon irradiation. Results will be presented and discussed.

Keywords: Graphene oxide; Laser irradiation; Oxygen reduction; Oxidation; Surface analysis.

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