

Abstract Submitted
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Functionalization of plasma synthesized advanced carbons¹ EVA KOVACEVIC, GREMI UMR 7344 CNRS and Universite d'Orleans, THIBAUT LABBAYE, JOHANNES BERNDT, GREMI UMR 7344 CNRS et Universite d'Orleans, THOMAS STRUNSKUS, Chair for Multicomponent Materials, Institute for Materials Science, Christian-Albrechts-University at Kiel, ELENA TATAROVA, JULIO HENRIQUES, Instituto de Plasmas e Fusao Nuclear, Instituto Superior Tecnico, Universidade de Lisboa, CHANTAL BOULMER-LEBORGNE, GREMI UMR 7344 CNRS et Universite d'Orleans — We report here about experiments concerning the plasma based functionalization of plasma produced carbon nanotubes and free-standing graphenes. The influence of nitrogen and ammonia plasma on the surface properties is investigated, involving the role of the surface temperature on the functionalization procedure. The effect of the plasma treatment on the different carbon materials is analyzed by means of contact angle measurements, near edge x-ray absorption fine spectroscopy (NEXAFS) and XPS. We will discuss the importance of the plasma characteristics for the formation of amino groups and nitrogen incorporation in the material. The important issues concern: the formation of dangling bonds, destructive effects of plasma-surface interactions and recovery of the surfaces.

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