

Abstract Submitted
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Nanoparticle formation and thin film deposition in aniline containing plasmas CEDRIC PATTYN, GREMI UMR 7344 CNRSUniversite d'Orleans, France, ANA DIAS, Instituto Superior Tecnico, Technical University of Lisbon, Portugal , SHAHZAD HUSSAIN, GREMI UMR 7344 CNRSUniversite d'Orleans, France, THOMAS STRUNSKUS, University of Kiel, Kiel, Germany , ILIJA STEFANOVIC, CHANTAL BOULMER-LEBORGNE, THOMAS LECAS, EVA KOVACEVIC, JOHANNES BERNDT, GREMI UMR 7344 CNRSUniversite d'Orleans, France — This contribution deals with plasma based polymerization processes in mixtures of argon and aniline. The investigations are performed in a capacitively coupled RF discharge (in pulsed and continuous mode) and concern both the observed formation of nanoparticles in the plasma volume and the deposition of films. The latter process was used for the deposition of ultra-thin layers on different kind of nanocarbon materials (nanotubes and free standing graphene). The analysis of the plasma and the plasma chemistry (by means of mass spectroscopy and in-situ FTIR spectroscopy) is accompanied by several ex-situ diagnostics of the obtained materials which include NEXAFS and XPS measurements as well as Raman spectroscopy and electron microscopy. The decisive point of the investigations concern the preservation of the original monomer structure during the plasma polymerization processes and the stability of the thin films on the different substrates.

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