Study of polymerization process in a capacitively coupled discharge operating in aniline argon mixture

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Plasma enhanced chemical vapour deposition (PECVD) is a technique that originates from the conventional chemical vapour deposition (CVD). PECVD is a technique that allows in particular the deposition of ultra-thin and pinhole free polymer films on a great class of substrates. The main role of cold plasmas in this kind of processes is to dissociate the monomer at lower temperatures compared to classical CVD, without completely destroying it. The species formed in this way are subsequently used for the deposition of thin films or under some circumstance for the production of nanoparticles [1].

This contribution will deal with the study of polymerization process in capacitively coupled discharge operating in aniline argon mixture. In this context, the contribution will mainly focus on the role of positive ions and different kind of radicals on the properties of plasma polymerized thin films. For this purpose, different kinds of electrode designs will be used to separate the influence of different species.

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