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RF CCP synthesis of vertically aligned graphene: temperatures and walls[1] EVA KOVACEVIC, ANDREA JAGODAR, ERIK VON WAHL, DARIO SCIACQUA, THOMAS LECAS, GREMI UMR 7344 Universite et CNRS d Orleans, N.M. SANTHOSH, UROS CVELBAR, Joef Stefan Institute, Ljubljana, Slovenia, JOHANNES BERNDT, GREMI UMR 7344 Universite et CNRS d Orleans, GREMI CNRSUNIVERSITY OF TEAM, JOEF STEFAN INSTITUTE, LJUBLJANA TEAM — The interest in novel, often carbonaceous materials with large effective surfaces, high conductivity, stability, is growing due to the downsizing of electrical devices and the demand for low-cost new materials. These materials show great potential applications for electrochemical devices, transistors and biosensors, or as even as analogue materials in laboratory astrophysics. On the other hand there is a need for green, solvent free, industry near procedures, where mass production or 3D coatings of such materials can be obtained. New developments in plasma technology, as well as old but gold processes, are enabling such productions rather easy. In this work, specifically, the plasma synthesis of carbon based nanomaterials will be presented. The examples concern vertically aligned (2D) graphene (VAG) nanowalls synthesized in low temperature, low pressure capacitively coupled RF plasmas. The most interesting result is a rather low substrate temperature (for this type of material) starting from 450C. The 2D materials are grown on different kind of metallic substrates, as well as on SI-wafers. As a specific case we will present N doped and functionalized VAGs, with emphasis on the wall conditioning as an important factor for the production process.

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