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Plasma requirements for vertically aligned carbon nanowalls synthesis LUCIA BONOVA, JANA BOHOVICOVA, JURAJ HALANDA, MARTIN MUSKA, MARCEL MESKO, Slovak University of Technology, PLASMA TECHNOLOGIES AND PLASMA SURFACE INTERACTIONS TEAM — Graphene related nanostructures have large potential in energy storage applications because of their unique physical and chemical properties. Carbon nanowalls (CNWs) are practical realization of graphene containing nanostructures. CNWs are two-dimensional carbon structures that consist of stacked graphene sheets standing vertically on substrates. Vertically aligned carbon nanowalls were synthetized by atmospheric direct current plasma enhanced chemical vapor deposition. The CNWs nucleation and aligned mechanism on catalytically active surfaces were revealed. Importance of plasma conditions for vertically aligned CNWs synthesis is evidenced by analyzing both outside and inside growth area.

Lucia Bonova
Slovak University of Technology

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