

**DIVERSITY OF INP MICRO- AND NANO- STRUCTURES GROWN ON
AEROGRAPHITE SUBSTRATE IN HVPE PROCESS**

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Our group recently has reported on fabrication and systematic characterization of three-dimensional architectures consisting of GaN and ZnO micro-nanocrystallites deposited on Aerographite scaffolds [1, 2] as well as on development of ultra-lightweight flexible pressure sensors based on carbon aerogels decorated by GaN or SnO₂ nanocrystalline thin films [3].

In this work is demonstrated the possibility to fabricate mechanically flexible hybrid Aerographite/InP architectures in HVPE process. Depending on the experimental conditions and surface parameters were obtained microcrystals on the inner and outer surfaces of Aerographite hollow tetrapodes, horizontally and vertically aligned microfibers of InP. Was performed the characterization of the samples by using transmission electron microscopy (TEM), and energy dispersive X-ray analysis (EDX) and Raman spectroscopy. The composition of microstructures was demonstrated to be indium phosphide and its Zincblende type lattice was revealed.

[1] I. Tiginyanu et al, Sci. Rep. 6, 32913 (2016);

[2] A. Schuchardt et al, Sci. Rep. 5, 8839 (2015);

[3] M. Dragoman et al Nanotechnology, Vol. 27, 475203 (2016).