

Abstract Submitted
for the GEC07 Meeting of
The American Physical Society

Deterministic Plasma-aided Nanofabrication research within the International Plasma Nanoscience Network IGOR LEVCHENKO, KOSTYA (KEN) OSTRIKOV, SHUYAN XU, Plasma Nanoscience Network — Plasma Nanoscience is a subfield at the cross-roads of cutting-edge nanoscience, plasma and gas discharge physics, materials and surface science, engineering, astrophysics and bionanotechnology. Understanding how plasma-based nanoassembly works in natural environments and translating this knowledge to laboratory and industrial nanofabrication, eventually finding better, cheaper and industrially-viable ways of fabricating nanoscale objects and nanodevices is the main aim of the International Plasma Nanoscience Network. The concept of (plasma-controlled) determinism is central to our research endeavors. Here, we present the latest advances in experimental and computational research on deterministic plasma-aided nanofabrication and processing of various nanoscale objects of different dimensionality, sizes, shapes, crystalline structure, elemental composition, arrangement and ordering in nanoarrays, etc. [1]. The benefits and advantages of using low-temperature (non-equilibrium and thermal) plasma environments are revealed and the relevant processes optimized to meet the continuously rising demands of nanotechnology [1]. [1] K. Ostrikov, IEEE Tran. Plasma Sci. 35, 127 (2007); K. Ostrikov, A. B. Murphy, J. Phys D.: Appl. Phys. 40, 2223 (2007)

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Date submitted: 15 Jun 2007

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