

Abstract Submitted  
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**Optical properties of ZnO nanotubes grown by combining electrospinning and atomic layer deposition** VALENTYN SMYNTYNA, Odesa I.I.Mechnikov University, ADIB ABOU CHAAYA, European institute of membranes, University of Montpellier 2, ROMAN VITER, Odesa I.I. Mechnikov University, MIKHAEL BECHELANY, European institute of membranes, University of Montpellier 2, DONATS ERTS, Institute of Chemical physics, University of Latvia, PHILIPPE MIELE, European institute of membranes, University of Montpellier 2, ODESSA I.I.MECHNIKOV UNIVERSITY TEAM, EUROPEAN INSTITUTE OF MEMBRANES TEAM, INSTITUTE OF CHEMICAL PHYSICS, UNIVERSITY OF LATVIA TEAM — 1D Nanostructures (NSs) have been a focus of intense research due to their novel physical properties in comparison to their bulk counterparts. The control of individual NSs properties (tunable size, shape, crystallinity and porosity) and their relative arrangements (surface density) are crucial. In this presentation, we will focus on the synthesis of ZnO nanotubes (NTs) using electrospinning combined with atomic layer deposition (ALD). The characterization of these 1D NSs will be discussed together with their optical properties. A study of absorbance and photoluminescence spectra at growth of ZnO nanotubes is reported. A structural transition from amorphous to polycrystalline state is being observed with increasing the ZnO NTs wall thickness. The study of these NSs will enable a wide range of applications in different fields such as photovoltaic, photocatalytic, gas sensing as well as molecular sensing applications.

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