

S1-P.9

Structural and Photoluminescence Properties of Nanoparticles Formed by Laser Ablation of Porous Silicon in Ethanol and Liquid Nitrogen

A.V. Skobelkina¹, F.V. Kashaev¹, S.V. Zabotnov¹, A.V. Kolchin¹, T.P. Kaminskaya¹, D.E. Presnov^{1,2,3}, E.A. Sergeeva^{4,1}, M.Yu. Kirillin⁴, L.A. Golovan¹, and P.K. Kashkarov¹

¹ Lomonosov Moscow State University, Faculty of Physics, Moscow Russia

² Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University, Moscow, Russia

³ Quantum Technology Centre, Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia

⁴ Institute of Applied Physics RAS, Nizhny Novgorod, Russia

Sequential use of electrochemical etching and picosecond laser ablation in ethanol and liquid nitrogen allows fabrication of silicon particles with size smaller than 100 nm and high level of crystallinity. Fabricated ensembles of nanoparticles exhibit effective photoluminescence with emission peaks located within biotissue optical transparency window, thus being promising as contrasting agents for bioimaging.