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Influence of nanostructure synthesis parameters on the crystal structure

Nowadays, one-dimensional nanostructures, such as nanowires and nanotubes, have attracted wide attention from scientists. The template synthesis used in this work shows unique advantages in nanotubes production for which the tubes diameter and the maximum length are conditioned by template parameters. The crystallographic and magnetic characteristics are controlled by the deposition conditions.
X-ray diffraction analysis method was used to study the influence of deposition conditions on structural properties and phase composition. The increase in crystal lattice parameter and the average size of crystallites can be explained by a change in the concentration of defects and microdistortions in the structure that are formed during the synthesis.

Primary author: Mr SHLIMAS, Dmitriy (The L.N.Gumilyov Eurasian National University, Satpaev str., 5, 010008 Astana, Kazakhstan)

Co-authors: Dr KOZLOVSKIY, Artem (Institute of Nuclear Physics of Kazakhstan); Prof. KADYRZHANOV, Kayrat (Gumilyov Eurasian National University)

Presenter: Mr SHLIMAS, Dmitriy (The L.N.Gumilyov Eurasian National University, Satpaev str., 5, 010008 Astana, Kazakhstan)

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