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**ADVANCED CERAMICS AND APPLICATION IV**  
**New Frontiers in Multifunctional Material Science and Processing**

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**Institute of Chemistry Technology and Metallurgy**  
**Institute for Technology of Nuclear and Other Raw Mineral Materials**  
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## **Influence of Synthesis Parameters on Structure of 1-D TiO<sub>2</sub> nanostructures**

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The influence of electrochemical conditions and the heat treatment on the crystal structure and the microstructure evolution of TiO<sub>2</sub> based nanotubes synthesized by the self-ordering anodization process is investigated in this work. The electrochemical anodization was performed at room temperature, for 30 minutes under 15, 20 and 25 V, with stirring. The as-anodized Ti foils were annealed in air at 450, 600, 650 and 700 °C for 30 minutes. The structure and the lattice dynamics of the samples has been studied by using XRD and Raman spectroscopy methods. The microstructure development of the 1-D TiO<sub>2</sub> nanostructures has been analyzed by FESEM.