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YOUNG SCIENTISTS in CERAMICS**

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**ToF-ERDA/RBS ANALYSIS OF ANNEALED TiO₂ NANOTUBES
GROWN ONTO FTO GLASS**

Jelena Vujančević¹, Anđelika Bjelajac², Georgios Provatas³, Zdravko Siketić³,
Milko Jakšić³, Vladimir Pavlović¹, Đorđe Janacković⁴

¹*Institute of Technical Sciences of SASA, Knez Mihailova 35/IV, 11000 Belgrade, Serbia*

²*LPICM, CNRS, École polytechnique, IP Paris, Route de Saclay, 91128,
Palaiseau, France*

³*Ruder Bošković Institute, Bijenička cesta 54, Zagreb 10000, Croatia*

⁴*University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11000
Belgrade, Serbia*

e-mail: jelena.vujancevic@itn.sanu.ac.rs

Different semiconductors have been studied as photoanode material for solar cells. Among them, TiO₂ has been shown to be the best material due to its chemical stability and good charge transport capability. It is usually deposited onto FTO glass (F-SnO₂), and then heated at high temperature in order to obtain inter-crystalline electric contact for improving electron conductivity. The focus of this research was chemical analysis of the TiO₂ nanotubes (NTs) obtained by anodization of titanium film on FTO glass using NH₄F in ethylene glycol electrolyte. There are only few studies suggesting that the electrolyte is a source of N dopant in TiO₂, but also Sn diffusion from FTO support was reported. This study aims to show the chemical distribution of elements of interest along the nanotubes depth. For that purpose the time-of-flight elastic recoil detection analysis (ToF-ERDA) and Rutherford backscattering (RBS) methods were used as complementary techniques for chemical analysis of both light, such is N, and heavy elements, such is Sn. The TiO₂ NTs films were annealed at different temperatures (450–630 °C) and the impact of the heating temperature on the chemical distribution was followed.