

PHOTONICA 2019

7TH INTERNATIONAL SCHOOL AND CONFERENCE ON PHOTONICS

*with Symposium Machine Learning with Photonics,
The European synchrotron and FEL user organization (ESUO) Regional
Workshop and COST action CA16221 ATOM-QT*



Book of abstracts



Editors

Milica Matijević,
Marko Krstić,
Petra Beličev

Belgrade, Serbia,
26th - 30th August 2019.

Inner-shell spectroscopy of titanium (IV) iso-propoxide

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The quality and properties of synthesized nano structure strongly depend on several factors, like the choice of substrate and the appropriate precursors as well as the optimal conditions for substrate-precursor reaction. For deposits such as TiO₂ these factors become particularly important because directly affect properties such as magnetism and conductivity [1].

In the view of the intense activity related to synthesis of nanomaterials based on TiO₂, we investigated inner-shell ionization and excitation in the titanium (IV) iso-propoxide Ti[OCH(CH₃)₂]₄ molecule, which, due to its structure and chemical characteristics is considered as an efficient precursor for deposition of TiO₂ thin films. Complementary experimental techniques (XPS, NEXAFS, mass spectrometry) as well as extensive molecular dynamics (MD) simulations have been used to investigate the photo induced fragmentation of Ti[OCH(CH₃)₂]₄. The experiments have been performed at the Gas Phase photoemission beamline of the Elettra synchrotron radiation source (Trieste, Italy) [2, 3].

ACKNOWLEDGMENT: Work partially supported by the MAECI Serbia–Italy Joint Research Project “A nanoview of radiation-biomatter interaction” and the MESTDRS (OI 171020, OI 172065).

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- [1] A. Botman et al., *Nanotechnology* 20, 372001 (2009).
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- [3] P. Bolognesi et al., *Frontiers in Chemistry* 7, 151 (2019).

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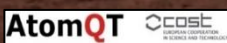
7TH INTERNATIONAL SCHOOL AND CONFERENCE ON PHOTONICS, 26TH - 30TH August 2019, Belgrade, Serbia

Topics: Quantum optics and ultracold systems, Nonlinear Optics, Optical materials, Biophotonics, Devices and components, Optical communications, Laser spectroscopy and metrology, Ultrafast optical phenomena, Laser-material interaction, Optical metamaterials and plasmonics, Machine learning in photonics (for the first time at PHOTONICA)



Joint events:

- **Machine Learning with Photonics Symposium** (co-organized with Prof. Darko Zibar)
- **The European synchrotron and FEL user organization (ESUO) Regional Workshop**
- **COST action CA16221 ATOM-QT**



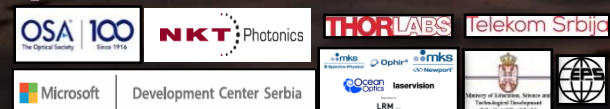
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Tutorial speakers:

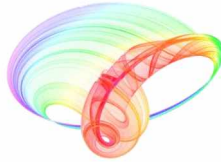
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Keynote speakers:

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Book of abstracts



PHOTONICA2019

The Seventh International School and Conference on
Photonics, 26 August – 30 August 2019, Belgrade, Serbia

& Machine Learning with Photonics Symposium
(ML-Photonica 2019)



& ESUO Regional Workshop



& COST action CA16221



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Belgrade, 2019

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PROGRESS REPORTS AND CONTRIBUTED PAPERS

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