CURRICULUM VITAE

Name: Dr. Oleksandr (Alex) Bondarchuk

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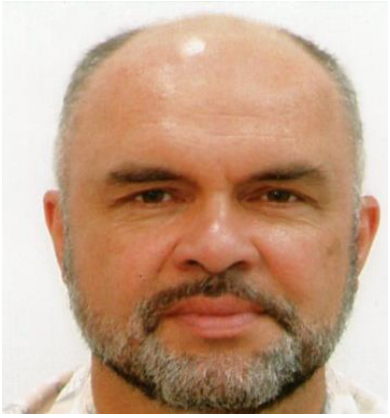
Nationality: Ukraine
Date of birth: 09.11.1961
Place of birth: Kiev/Ukraine



EMPLOYMENT

02.2018 – present **International Iberian Nanotechnology Laboratory (INL)**. XPS facility manager.

09.2011 – 12.2017 research centre **CIC energiGUNE,** Miñano, Spain. As a Head of Surface Science Laboratory carried out characterization service for internal & external users by means of: XPS, UPS, AES, SAM/SEM, STM/AFM, FTIR, Raman spectroscopy, also in combination with electrochemical testing. Kept the state-of-the–art of equipment, provided training for PhD students and users.

06.2009 - 06.2011 **Specs GmbH,** Berlin, Germany. Sales manager for electron spectroscopy instruments: XPS, UPS, SEM/SAM, AES and LEEM/PEEM in India, Poland, Russia, Ukraine.

05.2006 - 06.2009 **Fritz Haber Institute of the Max Planck Society, Berlin, Germany.** Post Doctoral position with the Department of Chemical Physics. Supervisor Prof. Hajo Freund. Studied structure and reactivity of ceria-based systems (silica/ceria, vanadia/ceria) model catalysts by means of combination of the surface sensitive techniques: STM, XPS, reflection FTIR, TPD. In particular, he addressed the role of ceria dimension (nanoparticles vs extended films) on the structure and adsorption properties of gold supported on ceria. In addition, he studied vanadia/ceria systems focusing on the relationship between nuclearity and vibrational properties of the supported vanadia clusters.

03.2004 - 06.2006 **Department of Chemistry and Biochemistry, University of Texas at Austin, USA** with location in the **Environmental Molecular Science Laboratory of Pacific Northwest National Laboratory, Richland, Washington.** Research Fellow, Supervisor: **Prof. J.M. White**. Alex did atomically resolved studies of mass selected tungsten trioxide clusters on a model TiO_2(110) surface. These state of the art measurements represented the first STM studies of monodispersed oxide clusters on oxide surfaces. Alex also carried out atomically resolved experiments while imaging the adsorption and reaction of alcohols on TiO_2(110).

09.2001 - 02.2004 **University of Maryland, Colledge Park**, **MD**. Post Doctoral position. Supervisor: Prof. **Ellen D. Williams**. Experimental assessment of the „wind force“ in the current stressed (current density up to 10^7 A/cm^2!) thin films by means of STM/SEM.

02.1999 - 08.2001	**Institute of Metal Physics, National Academy of Science of Ukraine, Kiev.** Senior Scientist. LEED/Auger spectroscopy studies of transition metal alloys. Supervision of a PhD student.
08.1983-02.1999	**Kiev T. Shevchenko University, Department of RadioPhysics**, **Ukraine.** Assistant Professor, Senior Scientist, Research Staff Member, PhD student.

EDUCATION

1995	**Ph.D. in Physics**, University of Kiev, Ukraine.
1983	**M.S. Physics and Electronics (major in microelectronics)**, Kiev T. Shevchenko University, Kiev, Ukraine.

HONOURS

09.2017 – 12.2017	**Salvador de Madariaga Grant**, Spanish Ministry of Education, Culture and Sports

SKILLS

Languages	Ukranian (mother tongue), English (fluent, working language for > 10 years), Russian (fluent), German (B1) and Spanish (basic knowledge);
Computer Skills	Microsoft software applications, Data processing: Origin, CasaXPS, Photoshop
Technical Skills	**Electron spectroscopy**: >15 years work experience, including X-Ray Photoelectron Spectroscopy **(XPS)** and Auger Electron Spectroscopy (**AES**) **(**Thermo Scientific, SPECS, Scienta, PHI). **SPM techniques**: Scanning Tunneling Microscopy (STM) (Omicron, SPECS, JEOL), Atomic Force Microscopy (AFM) (Omicron, JEOL, DI, Agilent, Nanonics machines), Scanning Electron Microscopy (SEM) (FEI, JEOL) **Optical spectroscopy:** Infra Red spectroscopy (FTIR, ATR-FTIR, FTIR) (IFS-66, Vertex 70 spectrometers from Bruker), Raman spectroscopy (Ranishaw), Raman-AFM, TERS, NSOM (Nanonics). **Electrochemical characterization:** potentiostat SP200 (BioLogic) **Sample Preparation Techniques:** vacuum annealing, ion sputtering, *in-situ* UHV cleavage, STM tip preparation by electrochemical etching/polishing, chemical wet treatment, high pressure nitridation and oxidation, electrochemical cycling, Physical Vapor Deposition (thermal evaporation, e-beam evaporation, RF- and DC-magnetron sputtering), Water Assisted Deposition at low temperature, sample cooling using LN_2 and LHe. **Teaching and Mentoring**: taught courses of physical electronics and microelectronics; digital electronics, supervised undergraduate and graduate students in their research activities.

SELECTED PUBLICATIONS

Y. Grosu, **O. Bondarchuk**, A. Faik, The effect of humidity, impurities and initial state on the corrosion of carbon and stainlesssteels in molten HitecXL salt for CSP application, Solar Energy Materials and Solar Cells 2018, 174: p.34-41. https://doi.org/10.1016/j.solmat.2017.08.026

G.G. Eshetu, X. Judez, C. Li, **O. Bondarchuk**, L. M. Rodrigez-Martinez, H. Zhang, M. Armand, Lithium Azide as an Electrolyte Additive for All-Solid-State Lithium–Sulfur Batteries, Angewandte Chemie International Edition 2017, 129: p.15570-15574. https://doi.org/10.1002/ange.201709305

M.J. Piernas-Muñoz, E. Castillo-Martinez, **O. Bondarchuk**, M. Armand, T. Rojo, Higher voltage plateau cubicPrussian White for Na-ion batteries, Journal of Power Sources 2016, 324: p.766-773. https://doi.org/10.1016/j.jpowsour.2016.05.050

O. Bondarchuk, E. Goikolea, A. Morel, D. Belanger, T. Brousse, R. Mysyk, Thin films of pure vanadium nitride: Evidence for anomalous non-faradaic capacitance, Journal of Power Sources, 2016, 324: p.439-446. https://doi.org/10.1016/j.jpowsour.2016.05.093