

# IVANA VOBORNIK CURRICULUM VITAE



## PERSONAL INFORMATION

Name, Surname	<b>Ivana Vobornik</b>
E-mail	<a href="mailto:ivana.vobornik@elettra.eu">ivana.vobornik@elettra.eu</a> , <a href="mailto:vobornik@iom.cnr.it">vobornik@iom.cnr.it</a>
Civil status	██████████
Nationality	<b>Italian, Croatian, Bosnian</b>
Place and Date of birth	██████████

## WORK EXPERIENCE

Dates (from – to)	<b>March 2020 – present</b>
Name and address of employer	Consiglio Nazionale delle Ricerche (CNR) – Istituto Officina dei Materiali (IOM), TASC Laboratory, Trieste, Italy
Type of business or sector	Research
Occupation or position held	Senior research scientist
Dates (from – to)	<b>June 2005 – Feb. 2020</b>
Name and address of employer	Consiglio Nazionale delle Ricerche (CNR) – Istituto Officina dei Materiali (IOM)
Type of business or sector	Research
Occupation or position held	Research scientist
Dates (from – to)	<b>Dec. 2001 – June 2005</b>
Name and address of employer	Consiglio Nazionale delle Ricerche (CNR) – Istituto Nazionale per la Fisica della Materia (INFN), TASC Laboratory, Trieste, Italy
Type of business or sector	Research
Occupation or position held	Tenure track research scientist
Dates (from – to)	<b>Nov. 1999 – Nov. 2001</b>
Name and address of employer	TASC National Laboratory, Istituto Nazionale per la Fisica della Materia (INFN), Trieste, Italy
Type of business or sector	Research
Occupation or position held	Postdoctoral fellow
Dates (from – to)	<b>Oct. 1995 – Oct. 1999</b>
Name and address of employer	Department of Physics, Ecole Polytechnique Fédérale, Lausanne, Switzerland
Type of business or sector	Academy / research
Occupation or position held	Teaching and research assistant

## EDUCATION AND TRAINING

Dates (from – to)	<b>Oct. 1995 – Oct. 1999</b>
Name and type of organisation providing education and training	Ecole Polytechnique Fédérale de Lausanne, Switzerland
Principal subjects occupational skills covered	Condensed matter physics / teaching and research assistant
Title of qualification awarded	PhD (Thesis title: "Investigation of the Electronic Properties and Correlation Effects in the Cuprates and in Related Transition Metal Oxides"; Thesis advisor: Prof. ██████████ )
Dates (from – to)	<b>Oct. 1989 – March 1995</b>
Name and type of organisation providing education and training	University of Sarajevo, Bosnia and Herzegovina
Principal subjects occupational skills covered	Physics
Title of qualification awarded	BS / MSc (Thesis title: "Evolution of the Magnetic Susceptibility through the Thermal Annealing of the Amorphous Metallic State"; Thesis advisor: Prof. ██████████ )
Dates (from – to)	<b>Sept. 1985 – June 1989</b>
Name and type of organisation providing education and training	Second Gymnasium, Sarajevo, Bosnia and Herzegovina
Principal subjects occupational skills covered	High school, major in mathematics
Title of qualification awarded	High school diploma

## PERSONAL SKILLS AND COMPETENCES

### MOTHER TONGUE

### CROATIAN / BOSNIAN

### OTHER LANGUAGES

- Reading skills
- Writing skills
- Verbal skills

### ENGLISH

Excellent  
Excellent  
Excellent

### ITALIAN

Excellent  
Excellent  
Excellent

### FRENCH

Basic  
Basic  
Basic

### GERMAN

Basic  
Basic  
Basic

## RESEARCH ACTIVITIES

### Research sectors

Physics – condensed matter, nanotechnologies, material science

### Scientific Activities

Highly correlated electronic systems, low-dimensional electronic systems and emergent phenomena induced by spin-orbit coupling (topological insulators, Dirac/Weyl semimetals, transition metal dichalcogenides), graphene, transition metal oxides, superconductivity, magnetism, metal-insulator transitions; surfaces, molecular films on surfaces; intermolecular interactions and charge reorganisation on metal-molecule interfaces.  
Research performed in 6 international laboratories and 4 synchrotron radiation facility centers.

TECHNICAL SKILLS AND COMPETENCES	<p>Photoelectron spectroscopies with conventional and synchrotron radiation sources; ultra-high vacuum (UHV) techniques, UHV compatible surface preparation techniques and thin film deposition; Auger electron spectroscopy; low energy electron diffraction (LEED), Laue X-ray diffraction; resistivity and susceptibility measurements.</p> <p>Participation in the construction and commissioning of beamline APE at Elettra synchrotron.</p> <p>Computer knowledge: Windows and Mac-OS operating systems; computer applications for data acquisition and analysis, instrumentation control, image and word processing.</p>
ORGANISATIONAL SKILLS	<p>Member of the Institute Council at CNR-IOM (2010-2016).</p> <p>Responsible for the organization and coordination of the users and in-house research activities at beamline APE-LE - Elettra synchrotron.</p> <p>Responsible for the upgrade of APE-LE experimental station within NFFA-MIUR (Nanoscience Foundries and Fine Analysis; project coordinator: Giorgio Rossi) demonstrator phase.</p>
SELECTED PUBLICATIONS	<p>Author of <b>more than 150 refereed papers</b> in international scientific journals <b>H index (September 2021) = 31</b> (source: Web of Science, Scopus), <b>34</b> (source: Google scholar)</p> <p><b>Selected publications 2017-2021:</b></p> <p>J. Jiang et al., "Signature of type-II Weyl semimetal phase in MoTe<sub>2</sub>", Nature Communications Vol. 8, Article number 13973 (2017)</p> <p>V. Sunko et al., "Maximal Rashba-like spin splitting via kinetic-energy-coupled inversion-symmetry breaking", Nature 549 (7673), 492 (2017)</p> <p>M. S. Bahramy et al., "Ubiquitous formation of bulk Dirac cones and topological surface states from a single orbital manifold in transition-metal dichalcogenides" Nature Materials 17, 23-27 (2018)</p> <p>C. Rinaldi et al., "Ferroelectric control of the spin texture in GeTe", Nano letters 18 (5), 2751-2758 (2018)</p> <p>B. Gosh et al., "Observation of bulk states and spin-polarized topological surface states in transition metal dichalcogenide Dirac semimetal candidate NiTe<sub>2</sub>", Physical Review B, Vol. 100 - 19, 195134 (2019)</p> <p>I. Markovic et al., "Weyl-like points from band inversions of spin-polarised surface states in NbGeSb" Nature Communications 10 (1), 5485 (2019)</p> <p>S. Nappini et al., "Transition-Metal Dichalcogenide NiTe<sub>2</sub>: An Ambient-Stable Material for Catalysis and Nanoelectronics" Advanced Functional Materials, 30 (22), (2020)</p> <p>G. Gatti et al., "Radial spin texture of the Weyl fermions in chiral tellurium" Physical Review Letters 125 (21) 216402 (2020)</p> <p>L. Zhang et al., "High-frequency rectifiers based on type-II Dirac fermions" Nature communications 12 (1), 1-8 (2021)</p> <p>I. Vobornik et al., "Kitkaite NiTeSe, an ambient-stable layered Dirac semimetal with low-energy type-II fermions with application capabilities in spintronics and optoelectronics" Advance Functional Materials, accepted August 2021</p>

## TEACHING EXPERIENCE

- Co-rapporteur, PhD Thesis by ██████████ Università di Milano, Italy, 2019
- Co-rapporteur, Master Thesis by ██████████, Università di Milano, Italy, 2019
- SILS Lecturer 2019 (Italian School of Synchrotron Radiation)
- Co-rapporteur, Master Thesis by ██████████, Università di Milano, Italy, 2018
- Co-rapporteur, Master Thesis by ██████████, Università di Milano, Italy, 2016
- Co-rapporteur, Master Thesis by ██████████, Università degli Studi di Trieste, Italy, 2008
- Practicals Hercules 2005 and 2018 (Higher European Research Course for Users of Large Experimental Systems)
- Teaching and research assistant, Ecole Polytechnique Federale de Lausanne, Switzerland, 1995-1999

## EXPERT EVALUATOR ACTIVITIES (PANEL EXPERTISE)

- **Review Panel Member, Alba Synchrotron 2021** –
- **European expert evaluator (EX2002B040002)** – EIC Pathfinder Action within Horizon Europe, Vice chair 2021
- **Review Panel Member, Solaris Synchrotron 2020** –
- **FWO (The Research Foundation – Flanders) Physics Panel Member, 2020-**
- **European expert evaluator (EX2002B040002)** – FET-OPEN Actions within H2020, Vice chair 2020
- **European expert monitor (EX2002B040002)** – FET Open HiTIME, 2020 and 2019
- **European expert evaluator (EX2002B040002)** – Marie Curie Actions IXF within FP7; Marie Skłodowska-Curie Actions within H2020, 2013 -
- **European expert evaluator (EX2002B040002)** – FET-OPEN Actions within H2020
- **Expert evaluator** – JCMM Brno Ph.D. Talent 2017, 2018, 2019, 2020
- **Expert evaluator** for SoMoPro (South Moravian Programme for Distinguished Researchers within South Moravian Center for International Mobility), 2016

## REFEREEING

- **External assessor** for the master thesis by Mr. ██████████ (2012) and ██████████ (2013), Faculty of Science, University of Johannesburg
- **External rapporteur** for the PhD thesis by Mr. ██████████ (2014), Dto. de Física de la Materia Condensada, Universidad Autonoma de Madrid
- **Referee** for several international journals: Nature Physics and Communications, ACS Nano, Nano Letters, Physical Review B and Letters, Surface Science, Physica B, Journal of Physics: Condensed Matter, New Journal of Physics, Journal of Synchrotron Radiation.

## AWARDS

- **Young author poster award** for innovative contents at INFM Meeting, Genova, Italy, June 12 - 16, 2000.

## CONFERENCES

- **40** conference participations, **19** seminars / invited contributions at international conferences.

**ADDITIONAL INFORMATION**

ResearcherID: A-7461-2011

URL: <http://www.researcherid.com/rid/A-7461-2011>

ORCID: <http://orcid.org/0000-0001-9957-3535>