

IVANA VOBORNIK
CURRICULUM VITAE



PERSONAL INFORMATION

Name, Surname	Ivana Vobornik
Address	
House number, street name, postcode, city, country	
Telephone	
E-mail	
Civil status	
Nationality	
Place and Date of birth	

WORK EXPERIENCE

Dates (from – to)	March 2020 – present
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 (Primo ricercatore)
Dates (from – to)	June 2005 – Feb. 2020
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)	Dec. 2001 – June 2005
Name and address of employer	Consiglio Nazionale delle Ricerche (CNR) – Istituto Nazionale per la Fisica della Materia (INFM), TASC Laboratory, Trieste, Italy
Type of business or sector	Research
Occupation or position held	Tenure track research scientist
Dates (from – to)	Nov. 1999 – Nov. 2001
Name and address of employer	TASC National Laboratory, Istituto Nazionale per la Fisica della Materia (INFM), Trieste, Italy
Type of business or sector	Research
Occupation or position held	Postdoctoral fellow
Dates (from – to)	Oct. 1995 – Oct. 1999
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)	Oct. 1995 – Oct. 1999
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. Giorgio Margaritondo)
Dates (from – to)	Oct. 1989 – March 1995
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. Egvin Girt)
Dates (from – to)	Sept. 1985 – June 1989
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

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>Computer knowledge: Windows and Mac-OS operating systems; computer applications for data acquisition and analysis, instrumentation control, image and word processing.</p> <p>Participation in the construction and commissioning of beamline APE at Elettra synchrotron.</p> <p>Responsible for the upgrade of APE-LE experimental station within NFFA-MUR (Nanoscience Foundries and Fine Analysis; project coordinator: Giorgio Rossi).</p> <p>Member of the Judging committee for the community tender for purchase of the electron energy analyzer for beamline APE (Prov. Direttore IOM, A. Morgante, N. protocollo CNR-IOM 0002418, 21/6/2013)</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 within Elettra synchrotron and NFFA-Trieste and NFFA-EU facilities.</p>
SELECTED PUBLICATIONS	<p>Author of more than 180 refereed papers in international scientific journals H index (April 2022) = 39 (source: Web of Science, Scopus), 41 (source: Google scholar)</p> <p>Selected publications 2018-2023:</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" <i>Nature Materials</i> 17, 23-27 (2018)</p> <p>C. Rinaldi et al., "Ferroelectric control of the spin texture in GeTe", <i>Nano letters</i> 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 NiTe₂", <i>Physical Review B</i>, Vol. 100 - 19, 195134 (2019)</p> <p>I. Markovic et al., "Weyl-like points from band inversions of spin-polarised surface states in NbGeSb" <i>Nature Communications</i> 10 (1), 5485 (2019)</p> <p>S. Nappini et al., "Transition-Metal Dichalcogenide NiTe₂: An Ambient-Stable Material for Catalysis and Nanoelectronics" <i>Advanced Functional Materials</i>, 30 (22), (2020)</p> <p>G. Gatti et al., "Radial spin texture of the Weyl fermions in chiral tellurium" <i>Physical Review Letters</i> 125 (21) 216402 (2020)</p> <p>L. Zhang et al., "High-frequency rectifiers based on type-II Dirac fermions" <i>Nature communications</i> 12 (1), 1-8 (2021)</p> <p>I. Vobornik et al., "Kitaite NiTeSe, an ambient-stable layered Dirac semimetal with low-energy type-II fermions with application capabilities in spintronics and optoelectronics" <i>Advanced Functional Materials</i> 31, 2106101 (2021)</p> <p>G.M. Pierantozzi et al., "Evidence of magnetism-induced topological protection in the axion insulator candidate EuSn₂P₂", <i>Proc Natl Acad Sci USA (PNAS)</i>, 119 - 4, e2116575119 (2022)</p> <p>Z. He et al., "Terahertz Nonlinear Hall Rectifiers Based on Spin-Polarized Topological Electronic States in 1T-CoTe₂", <i>Advanced Materials</i> (2023), doi: 10.1002/adma.202209557</p>

TEACHING EXPERIENCE

Co-rapporteur, BSc Thesis by Maximilian Kögler, Technische Universität Ilmenau, Germany, 2021

Co-rapporteur, BSc Thesis by Alice Finardi, Università di Milano, Italy, 2020

Co-rapporteur, PhD Thesis by Chiara Bigi, Università di Milano, Italy, 2019

Co-rapporteur, Master Thesis by Alessandro Torglia, Università di Milano, Italy, 2019

SILS Lecturer 2019 (Italian School of Synchrotron Radiation)

Co-rapporteur, Master Thesis by Andrea Nardi, Università di Milano, Italy, 2018

Co-rapporteur, Master Thesis by Chiara Bigi, Università di Milano, Italy, 2016

Co-rapporteur, Master Thesis by Bo Zhou, 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 Fédérale de Lausanne, Switzerland, 1995-1999

EXPERT EVALUATOR ACTIVITIES (PANEL EXPERTISE)

- **Review Panel Member, Alba Synchrotron 2021** –

- **Review Panel Member, NCN Polish National Science Center 2020** –

- **European expert evaluator (EX2002B040002)** – EIC Pathfinder Action within Horizon Europe, Vice chair 2020-2022

- **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, 2019-2023

- **European expert evaluator (EX2002B040002)** – Marie Curie Actions IXF within FP7; Marie Skłodowska-Curie Actions within H2020 and Horizon Europe, 2013 -

- **European expert evaluator (EX2002B040002)** – FET-OPEN Actions within H2020

- **Expert evaluator** – JCMM Brno Ph.D. Talent 2017-

- **Expert evaluator** for SoMoPro (South Moravian Programme for Distinguished Researchers within South Moravian Center for International Mobility), 2016

REFEREEING

- **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.

- **External assessor** for the PhD thesis by Mr. Edoardo Cappelli (2021) Université de Genève, Switzerland

- **External rapporteur** for the PhD thesis by Mr. Lukasz Walczak (2014), Dto. de Física de la Materia Condensada, Universidad Autónoma de Madrid

- **External assessor** for the master thesis by Mr. Prosper Ngabonziza (2012) and Ms. Sofanho Ngankeu (2013), Faculty of Science, University of Johannesburg

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

CONFERENCES - **42** conference participations, **30** 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>