

MARIA PERESSI
Curriculum Vitae
(updated October 2024)

WORK ADDRESS: University of Trieste, Department of Physics, Strada Costiera 11, I-34151 Trieste

PRESENT POSITION: Full Professor, SSD FIS/03, s.c. 02/B2 (02/PHYS-04) - Condensed Matter Physics, University of Trieste (UniTS), Department of Physics

PREVIOUS POSITIONS:

1988-89,89-90,90-91: Lecturer, temporary contract with University of Trieste;
11/1989-12/1989 and 7/1990-6/1991: Contract with Istituto Nazionale per la Fisica della Materia (National Institute for the Physics of Matter);
12/1989-9/1990 and 7/1991-1/1992: High School Teacher;
1/1992-10/2001: Lecturer at University of Trieste, permanent (Ricercatore);
2001-2021: Associate Professor, University of Trieste

ACADEMIC DEGREES AND HABILITATIONS:

1985: Physics degree, University of Trieste;
1987: MSc in Condensed Matter Physics, International School for Advanced Studies (SISSA), Trieste;
1989: PhD in Condensed Matter Physics, International School for Advanced Studies (SISSA), Trieste
2019: Habilitation (ASN) as Full Professor (I fascia), 02/B2 (Theoretical Physics of Condensed Matter)

RESEARCH ACTIVITIES AND SCIENTIFIC INTERESTS:

Theoretical/computational condensed matter physics, in particular: structural, electronic, magnetic and optical properties of materials with atomic-scale simulations (mainly: nanostructures, 2D materials, surfaces, adsorbates, heterogeneous catalysis).
Side activity in Physics Education Research.

PUBLICATIONS: Over 130 papers in peer reviewed international journals and book chapters; see Catalogue in [ArTS](#) (institutional archive of UniTS)

EDUCATIONAL ACTIVITY:

- University of Trieste: courses in Condensed Matter Physics, Computational Physics, General Physics in Faculties of Science, Engineering, Medicine, as professor and lecturer, since 1988, in BSc, MSc, PhD programmes
- University of Udine: course in Quantum Theory of Matter for the Laurea Specialistica in Computational Physics, since 2001/02 until 2005/06 included
- Chairperson of the Condensed Matter training track for the Laurea Magistrale in Physics at University of Trieste, 2008-2021; member of the Teaching Committee
- Delegate for Educational Programmes for the Department of Physics of the University of Trieste since January 2022

RECENT SCIENTIFIC PROJECTS AND ORGANIZATION ACTIVITY:

- Italian Research Center on High-Performance Computing, Big Data and Quantum Computing— Spoke 7, Materials and Molecular Sciences, funded within PNRR (participant) (2022 - 2025), and Innovation grants ASGARD, APESIGMA
- Project "QUBOP-QUest for BORon Phosphide" - PRIN 2022 (participant) (2023 - 2025)
- PI of a "Project of Major Importance" on Nanotechnology in the Scientific and Technological Collaboration Executive Programme of the Italian Ministry MAECI with Argentina (2014-2016) and Serbia (2019-2021)
- PI of a project "Finanziamento di Ateneo per progetti di ricerca scientifica – FRA 2015" (2016-2017)
- PI of several projects of High Performance Computing (CINECA/INFN, CINECA/ISCR, UniTS/CINECA programs)
- Local PI for UniTS of a project funded by the Regione FVG (NANOCAT, 2008-2010); Vice-PI (2008-2011) in a PRIN Project (Research Projects of National Interest), funded by the Italian Ministry of Education and Research
- Local organizer and Director of the "18th International Workshop on Computational Physics and Materials Science: Total Energy and Force Methods", Trieste, January 2017 (225 participants)
- Co-organizer of the "QuantumEspresso Spring School" in Cordoba (Argentina) for Latin-American young researchers, Sept.-Oct. 2015

OTHER SCIENTIFIC ACTIVITIES AND ORGANIZATION:

- coordination of projects of scientific dissemination; Delegate of the Director of the Physics Dept. since 2014;

- local coordinator for the University of Trieste of the national "Progetto Lauree Scientifiche - Fisica" since 2008
- referee for high-impact international scientific journals; for ANVUR
- representative for the Department of Physics in the "Centro Interdipartimentale di Ricerca Didattica" of the University of Trieste

Some relevant previous activities:

- Member of the Teacher Board of the PhD School in Physics at University of Trieste in the years 1999/2000 - 2018
- Director of the Consorzio per la Fisica - Trieste (since Oct. 2012; renewed; end: 31 Dec. 2017)
- Expert Member of COST (European Cooperation in Science and Technology) for Materials, Physics and Nanosciences (since 2011)
- scientific consultant of the International Center for Theoretical Physics for the Associateship program (since 2002 until 2008 included)

MAIN INTERNATIONAL COLLABORATIONS:

- 2019: Vinca Nuclear Institute, Belgrade (Serbia)
- 2014, 2015, 2016: Univ. Nacional de Cordoba (Argentina)
- 2001, 2002, 2003, 2004, 2010, 2011: "Hôte academique", Ecole Polytechnique Federal de Lausanne (CH)

OTHER INFO: professional IDs: [Scopus: 6701707612](https://scopus.com/authid/detail.url?https://orcid.org/0000-0001-6142-776X), [ORCID: 0000-0001-6142-776X](https://orcid.org/0000-0001-6142-776X).

Research group: <http://df.units.it/it/ricerca/ambiti/materia-condensata?q=it/node/5343> (Italian)
<https://df.units.it/en/research/researchareas/researchgroups/5344> (English)

LIST OF PUBLICATIONS IN 2023 AND 2024:

1. Francesco Armillotta, Davide Bidoggia, Pietro Biasin, Antonio Annese, Albano Cossaro, Alberto Verdini, Luca Floreano, Maria Peressi, and Erik Vesselli, *Spectroscopic fingerprints of iron-coordinated cobalt and iron porphyrin layers on graphene*, Cell Reports Physical Science **4**(5), 101378 (2023) <https://doi.org/10.1016/j.xcrp.2023.101378>
2. V. Carnevali, A. Sala, P. Biasin, M. Panighel, G. Comelli, M. Peressi, C. Africh, *Probing the graphene/substrate interaction by electron tunneling decay*, Carbon **210**, 118055 (2023) <https://doi.org/10.1016/j.carbon.2023.118055>
3. Xiang Wan, Kai Shi, Huan Li, Fangxie Shen, Shan Gao, Xiangmei Duan, Shen Zhang, Chunming Zhao, Meng Yu, Ruiting Hao, Weifang Li, Gen Wang, Maria Peressi, Yinchang Feng, and Weichao Wang, *Catalytic Ozonation of Polluter Benzene from -20 to >50 °C with High Conversion Efficiency and Selectivity on Mullite YMn2O5*, Environmental Science & Technology **57**(22), 8435-8445 (2023) <https://doi.org/10.1021/acs.est.3c01557>
4. Srdjan Stavrić, Valeria Chesnyak, Simone del Puppo, Mirco Panighel, Giovanni Comelli, Cristina Africh, Željko Šljivančanin, and Maria Peressi, *1D selective confinement and diffusion of metal atoms on graphene*, Carbon **125**, 118486 (2023) <https://doi.org/10.1016/j.carbon.2023.118486>
5. Manuel Tuniz, Davide Soranzio, Davide Bidoggia, Denny Puntel, Wibke Bronsch, Steven L. Johnson, Maria Peressi, Fulvio Parmigiani, and Federico Cilento, *Ultrafast all-optical manipulation of the charge-density wave in VTe2*, Phys. Rev. Research **5**, 043276 (2023 on line) <https://doi.org/10.1103/PhysRevResearch.5.043276>
6. Davide Bidoggia, Francesco Armillotta, Alessandro Sala, Erik Vesselli, and Maria Peressi, *Site-dependent oxidation state of single cobalt atoms in a porphyrin-based monolayer on graphene*, J. Phys. Chem. C **128**, 1737 (2024) <https://doi.org/10.1021/acs.jpcc.3c05562>
7. Simone Del Puppo, Pietro Biasin, Alessandro Sala, Paola Mantegazza, Ivan Pasqua, Elena Ghidorsi, Maria Caporali, Andrea Resta, Alessandro Coati, Francesca Genuzio, Onur Montes, Andrea Locatelli, Giovanni Comelli, Cristina Africh, Erik Vesselli, Maria Peressi and Alberto Verdini *Blue Phosphorene on Au(111): theory, spectroscopy and diffraction reveal the role of single Au adatoms*, Nanoscale Advances **6**, 3582-3589 (2024) <https://doi.org/10.1039/D4NA00192C>
8. Valeria Chesnyak, Mirco Panighel, Srdjan Stavrić, Daniele Povoledo, Simone del Puppo, Maria Peressi, Giovanni Comelli, Cristina Africh, *Exceptionally Stable Cobalt Nanoclusters on Functionalized Graphene*, Small Structures 2400055 (2024) <https://doi.org/10.1002/ssstr.202400055>
9. Francesco Armillotta, Davide Bidoggia, Stefania Baronio, Sala Alessandro, Roberto Costantini, Martina Dell'Angela, Iulia Cojocariu, Vitaliy Feyar, Alberto Morgante, Maria Peressi, Erik Vesselli, *Co(III), Co(II), Co(I): Tuning Single Cobalt Metal Atom Oxidation States in a 2D Coordination Network*, Adv. Func. Mat. (2024) <https://doi.org/10.1002/adfm.202408200>