

# Curriculum Vitae

Full Name: Javad Rezvani

## Education

2011-2014 **PhD in physics**, University of Camerino and national institute of metrology, INRiM.  
First class with excellency | Major: Nanophysics  
Thesis: "Synthesis and characterization of novel nanostructures based on Si and Ge."

2007-2009 **M. Sc. in Physics**, University of Pune.  
First class | Major: Nanophysics and technology  
Thesis: "Synthesis and characterization of the metal nanoparticles for model catalyst."

2000-2004 **B. Sc. in atomic Physics**, AI University of Tehran, with specialization in Laser physics.

## Work Experience

**July 2020-Present:** Researcher (Head of the Nanosurf Lab) at the University of Camerino.  
Fundamental studies with fine analysis techniques of advanced functional materials (in particular low-dimensional systems) especially ionic and superionic materials, superconductors, dynamics of nanophases, phase transitions, catalysts and interfaces.

**July 2020** - Contract professor at Camerino University.

**July 2018-June 2020** Research fellowship at the National Laboratory of Frascati, INFN. Working on the TERA project (national invitation 5th INFN group), in the fabrication and characterization of Josephson proximity junction arrays as Terahertz detectors (and low energy particles).

**Dec 2016-July 2018** Research Fellow at ICTP and Institute of Materials Science, CNR, Elettra, Italy. Work as a beamline scientist studying the dynamics of secondary electron reactions within soft matter. Responsible for building and starting the soft X-ray photoluminescence beam line.

**Dec 2014-Dec 2016** Research grant in the European project SIRBATT, University of Camerino, Camerino, Italy. Working on the formation and dynamics of solid electrolyte interfaces using advanced spectroscopies such as XAFS and XANES. The group is now one of the pioneers in the field of dynamic interface studies.

**Jun-Dec 2014** Research Assistant at the University of Camerino / INRiM Turin, Italy. Working on the engineering of one-dimensional semiconductor systems and their modulation and characterization of electronic properties.

**Mar 2010-Dec 2010** Visiting research Fellow at National Central University, Taiwan. Working as a junior researcher in the construction of the synthesis of the metal monolayer in an ultra clean environment as a model catalyst.

**Jul 2009-Feb 2010** Junior researcher Fellow at Pune University, India. Working as a junior researcher in the synthesis of transition metal oxide nanoparticles

## Teaching Experience

Teaching assignment for the "experimental methods in nanoscience and Technology" course at the University of Camerino (6 CFU).

From 01-03-2022 to 01-07-2022

Teaching assignment for the "Advanced physics laboratory" course at the University of Camerino (3 CFU).

From 01-03-2022 to 01-07-2022

Teaching assignment for the doctoral school course of the University of Camerino.

Lectures on the topic of "Material science using advanced radiation sources" for a total of 24 hours (3 CFU).

<https://docenti.unicam.it/pdett.aspx?Uteld=905&tv=c&ru=PROFCONTR>

from 01-03-2022 to 01-07-2022

Teaching assignment for the doctoral school course of the University of Camerino.

Lectures on the topic of "Material science using advanced radiation sources" for a total of 24 hours (3 CFU).

<https://docenti.unicam.it/pdett.aspx?Uteld=905&tv=c&ru=PROFCONTR>

from 01-03-2021 to 01-07-2021

Teaching assignment for the practice lessons of the General Physics one course for students of the biology department at the University of Camerino (for a total of 60 hours).

from 01-01-2012 to 31-12-2015

Lecturer of the circuit electronics laboratory course, Module: Sensor laboratory and data acquisition for school teachers in the context of Active Training Internship (TFA)

Ongoing is valid for 3 CFUs for a total of 24 hours.

from 04-03-2014 to 15-06-2014

Teaching assignment for the practice lessons of the "Nanophysics and nanotechnology" course at the Physics Department of the University of Pune.

the load was in addition to the original lessons for a total of 16 hours in the English language.

from 01-09-2009 to 01-02-2010

Teaching assignment for the practice lessons of the "Advanced solid state physics" course at the Physics and Astronomy Department of National Central University, Taiwan (for a total of 20 hours).

from 01-09-2010 to 01-12-2011

## **Society memberships, Awards and Honors**

National Scientific habilitation in SC. 02 / B1 Experimental physics of matter.

Winner of the "best young researcher award" for the study of functional nanomaterials that use Synchrotron radiation sources from the Italian synchrotron light radiation society (SILS). 09-2019

Affiliation to the National Institute of Nuclear Physics of the Perugia Section.

for the study of the surface passivation of monocrystalline semiconductor gamma detectors.

from 01-01-2013 to 01-07-2018

Affiliation to the national metrological research institute (INRiM) and NanoFacility Piemonte, Turin.

from 01-01-2014 to present

Affiliation to the National Research Council (CNR) - Institute of material workshop (IOM) as Beamline scientist and member of the BEAR beamline research group.

from 01-12-2016 to present

Affiliation to the National Institute of Nuclear Physics - National Laboratories of Frascati.  
from 01-07-2018 to present

Research Fellowship at international center of theoretical physics and national research council at Elettra synchrotron radiation center.  
from 01-12-2016 to 31-01-2018

Winner of the Scholarship of Excellence from the School of Advanced Studies SAS at the Camerino University for a duration of three years as a PhD student.  
from 01-06-2011 to 31-10-2014

Post-doctoral fellowship in "Stable Interfaces for Rechargeable Batteries" FP7 multisite project collaborative project SIRBATT by the UNICAM and University of Liverpool.  
Contract duration: 24 months  
from 01-12-2014 to 01-12-2016

"Visiting research Fellowship" of National Central University, Taiwan for a period of 6 months extended for another 3 months to work on "ultra clean" metal nanoparticles for application in the model catalyst under the supervision of Prof. M. F. Luo.  
from 01-03-2010 to 01-12-2010

Winner of the "M.R. Bhide award" of the "Raman memorial "conference for" best scientific paper "for presentation of the "thermal oxidation of the TiO<sub>2</sub> films prepared by the Ti sputtering" project at university of Pune. 02-2010

## **Funding Information [grants as PI-principal investigator or I-investigator]**

Responsible (Co-proposer) of the approved project at Elettra synchrotron (20145261) "SPUTTERING FREE CROSS SECTION OF LITHIUM ELECTROLYTE ANODES INTERFACES". The proposal was rewarded with 18 shifts of machine time (with an estimated value of 115 KEuro).  
from 02-03-2015 to 08-03-2015

Responsible (main proposer) of the approved project at Elettra synchrotron (20150262) "Soft x-ray study of structure-dependent electronic transport in Si nanowires". The project was rewarded with 18 rounds of measures + mission expenses (with an estimated value of 115 KEuro).  
from 02-11-2015 to 08-11-2015

Responsible (main proposer) of the approved project at Elettra synchrotron (20160106) "Interplay of irreversible vs reversible formation of Li titanate at Li<sub>7</sub>Ti<sub>5</sub>O<sub>12</sub> nanoparticles boundaries during lithiation.". The proposal was rewarded with 8 shifts of machine time (with an estimated value of 51KEuro).  
from 25-07-2016 to 28-07-2016

Responsible (main proposer) of the approved project at Elettra synchrotron (20165512) "Soft x-ray validation of coated LMO cathodes for lithium batteries". The project was awarded 15 shifts of machine time (with an estimated value of 95 KEuro).  
from 01-03-2017 to 06-03-2017

Co-proposer of the approved project at Elettra synchrotron (20180406) "Comprehensive soft X-ray study on the SEI formation and growth of non-doped and TM (Co, Fe) doped ZnO nanoparticles upon de- / lithiation". The project was awarded 18 machine time shifts on BEAR beamline (with an estimated value of 115 KEuro)  
from 27-11-2018 to 02-12-2018

Responsible (Co-proposer) of the approved project at Elettra synchrotron (20185279) "XANES and Res-PES study of Metal Insulator Transition in VO<sub>2</sub> thin films. The project was assigned 18 shifts of machine time on the ALOISA line (with an estimated value of 115 KEuro).  
from 18-02-2019 to 24-02-2019

Responsible (Co-proposer) of the approved project at Elettra synchrotron (20180241) "Test of compact wideband metalenses for spectral imaging". The project was awarded 21 shifts of machine time on CiPo beamline (with an estimated value of 135 KEuro).  
from 28-03-2019 to 06-04-2019

Responsible (main proposer) of the approved project at Elettra synchrotron (20180033) "Measuring probing depths of soft x-ray absorption techniques (TEY, TFY, EAY)" The project was assigned 18 shifts of machine time on the BEAR line (with an estimated value of 115 KEuro) + Mission expenses (EUProject CALIPSO).  
from 21-06-2019 to 25-06-2019

Co-proposer of the approved project at Elettra synchrotron (20190264) "Is the electron-phonon coupling can be directly probed in SnSe by THz spectroscopy?". The project was awarded 15 shifts of machine time on SSSI beamline (with an estimated value of 95 KEuro).  
from 16-09-2019 to 20-09-2019

Local responsible (Univ. Camerino) of the DAPHNE-X project within the RISE projects (Marie Skłodowska-Curie action) -H2020-MSCA-RISE-2020 with 7 partners from Italy, University of Lund (Sweden), University of Tehran (Iran) , Kenya, Slovenia and Croatia "Donors Acceptors PHotopolymerization for Novel OSCs prototypEs studied by X-ray synchrotron spectroscopies". The project was not admitted for funding but obtained a good evaluation of 82.4 / 100 (threshold 70/100). The project is resubmitted and under evaluation. The value of the project is 700 KEuro.

Responsible (main proposer) of the approved project at the SOLEIL synchrotron (20201687) "Coatingeffect on the structural dynamics of the spinel metal oxide cathodes". The project was awarded 17 shifts of machine time on SAMBA beamline (with an estimated value of 105 KEuro) + Mission expenses (EU-Project CALIPSOPlus).  
from 07-07-2021 to 12-07-2021

Co-proposer of the approved project at Elettra synchrotron (20210399) "Focusing properties of spherical bent and double flat MCP-devices and coherence characteristics of transmittedX-ray radiation.". The project was awarded 21 shifts of machine time on CiPo beamline (with an estimated value of 135 KEuro) + Mission expenses (EU-Project CALIPSO).  
from 27-08-2021 to 01-09-2021

Co-proposer of the approved project at Elettra synchrotron (20210554) "Solidelectrolyte interphase study in Na-ion full cell using ionic liquids as electrolyte". The project was awarded 18 shifts of machine time on BEAR beamline (with an estimated value of 115 KEuro).  
from 01-09-2021 to 05-09-2021

Responsible (Co-proposer) of the approved project at SOLEIL synchrotron (20201675) "Investigation of the complex phase behavior in amorphous Se under pressure using non-invasive far IR spectroscopy ". The project was awarded 9 shifts of machine time on SMIS1 beamline (with an estimated value of 70 KEuro) + Mission expenses (EU-Project CALIPSOPlus).  
from 03-11-2021 to 09-11-2021

Local manager (Univ. Camerino) in the IMPACT Project (Improve Materials Properties for ACcelerator Technologies) at the INFN CS5 scientific group with funding for two years. IMPACT is a project aimed at increasing the performance of materials of interest for accelerators (Project value 70 KEuro). Project has already been approved and starts in 2022.

from 01-01-2022 to 31-12-2022

National Responsible of the TERAPAD project: TeraHz Imaging by means of proximity junction arrays with high spatial resolution. The project will be in collaboration with IFW germany, CNR-IFN, INRIM and the University of Camerino. The project will be presented to the INFN internal call in July 2022. The value of the project is 150 KEuro.

from 01-03-2022 to 31-12-2022

Responsible (main proposer) of the project at Elettra synchrotron (20215835) "Structural dynamics and electronic structure of MoOx film on Cu substrates upon annealing". The project was requested 18 shifts of machine time on the BEAR line (with an estimated value of 115 KEuro) + Mission expenses (EUProject CALIPSOPlus).

from 06-05-2022 to 10/05/2022

Responsible (main proposer) of the approved project at Elettra synchrotron (20210414) "Structural dynamics and electronic structure of MoO3 film on Cu substrates by thermal treatment". The project was required to have 18 shifts of machine time on the BEAR line (with an estimated value of 115 KEuro). 06-05-2022a 10-05-2022

Responsible (main proposer) of the project at Elettra synchrotron (20215835) "Study of structural dynamics and CEllayer formation on polycrystalline manganese vanadium oxide composite on CNT and rGO coated / uncoated carbon fibers". The project was requested 18 shifts of machine time on the BEAR line (with an estimated value of 115 KEuro) + Mission expenses (EU-ProjectCALIPSO).

from 01-06-2022 to 06-06-2022

## **Participation and organization in the scientific conferences**

Contributed talk: Speaker of the oral contribution "Growth of diluted magnetic germanium nanowires using manganese nano-droplets" at the Nanosea2012 conference on nanoscience and technology, Sardinia, Italy.

<http://nanosea.roma2.infn.it/>

from 25-06-2012 to 29-06-2012

Contributed talk: Speaker for oral contribution "Effect of deposition parameters on Diffusion Induced Germanium Nanowires by MBE"

Authors: S.J. Rezvani, L. Boarino, I. Berbezier, F. Celegato, N. Pinto

Nanosea2014 conference, Marseille, France.

from 07-07-2014 to 11-07-2014

Contributed talk: Speaker of oral contribution "Temperature dependence of diffusion induced Ge nanowire grown by MBE" at the International conference on Functional and advanced materials FNMA14, Camerino, Italy.

from 01-09-2014 to 05-09-2014

Invited Speaker: Invited oral speaker "Structural evolution of Solid electrolyte interface in ZFO and graphite electrodes."

Authors: S.J. Rezvani, F. Nobili, A. Trapananti, M. Pasquali, A. Di Cicco

At Understanding Lithium Battery Interfaces, Bilbao, Spain.

from 28-09-2015 to 30-09-2015

Invited Speaker: Invited oral speaker on "Structurally induced density of states in porous Si nanowires", Ultrathinsuper conference, Camerino, Italy.

<http://www.multisuper.org/ultrathinsuper-2016>

from 06-04-2016 to 08-04-2016

Contributed Talk: Speaker of oral contribution "SEI dynamics in metal alloying anodes by soft x-ray absorption and photoemission spectroscopy "at SILS workshop 2016, Bari, Italy.  
<https://www.cristallografia.org/uploaded/1775.pdf>  
from 21-09-2016 to 23-09-2016

Contributed Talk: Speaker of oral contribution "Reversible interface formed on metal alloy oxide nanoparticles via lithiation "at SILS workshop 2017, Trieste, Italy.  
<https://www.elettra.trieste.it/events/2017/SILS/Main/Topics.html>  
from 04-10-2017 to 06-10-2017

Invited Speaker: Invited oral speaker "A novel approach to low dimensional superconducting Nb film properties and their potential Application "at the SuperFluctuations conference, San Benedetto, Italy.  
<http://www.multisuper.org/superfluctuations-2018>  
from 05-09-2018 to 07-09-2018

Invited Speaker: Invited oral speaker "A novel detector based on the vortex Mott insulator-to-metal transition "at the conference LIV Zakopane School of Physics, Breaking frontiers; submicron structures in physics and biology. Institute of nuclear physics PAN, Zakopane, Poland.  
from 21-05-2019 to 25-05-2019

Invited Speaker: Invited speaker of oral contribution "Structural and electronic properties of 3D graphene observed via XANES and Raman Spectroscopy "at the Second 3D graphene Workshop, USTC, Hefei, China.  
from 08-10-2019 to 14-10-2019

Contributed talk: Oral speaker "A novel approach to a non-destructive depth profiling using soft x-ray spectroscopies." at the High Precision X-ray Measurements conference, National Laboratories of Frascati, Rome, Italy.  
from 17-10-2019 to 19-10-2019

Invited Speaker: Invited oral speaker "Proximity junction arrays: A new generation of the THz detectors "at the Spectroscopy and Imaging with THz Radiation using Ultimate conference  
Radiation Sources, University of Rome La Sapienza, Rome, Italy.  
<https://www.phys.uniroma1.it/fisica/archivionotizie/spectroscopy-and-imaging-terahertz-radiationusing-ultimate-radiation-sources>  
from 10-12-2019 to 11-12-2019

Invited Speaker: Invited oral speaker "Endotaxial shape transition of Mn<sub>5</sub>Ge<sub>3</sub> islands to long nanowires." at the Quantum Complex Matter Conference, INFN, Rome, Italy.  
<https://www.superstripes.net/quantum-complex-matter-2020/program>  
from 08-06-2020 to 11-06-2020

Invited Speaker: Invited oral speaker "Tunneling from vibrating barriers in a quantum dot network of porous Si nanowires" at the Russian-Italian Meeting "Frontiers in Quantum Materials for Quantum Computing", Online.  
<https://www.superstripes.net/russian-italian-meeting/program>  
from 26-10-2020 to 27-10-2020

Invited Speaker: Invited oral speaker "Optical properties of porous silicon nanowires at high pressures" at the European optical society annual meeting, EOSAM, Università di Roma La Sapienza, Rome, Italy.  
<https://www.europeanoptics.org/pages/events/eosam2021/toms/ons.html>  
from 13-09-2021 to 17-09-2021

Invited Speaker: Invited oral speaker on "Soft x-ray absorption and pump-probe experiments of transient states using FEL sources" at EuPRAXIA @ SPARC\_LAB user workshop, LNF, Italy.  
From 14-10-2021 to 15-10-2021

Invited Speaker: Invited oral speaker "Stabilized Silicon Exotic phases in porous nanowires: a new road to silicon hot Qubit" at quantum materials for quantum technology QMQT, LNF, Italy.  
From 14-02-2022 to 15-02-2022

## Other relevant activities

Member of the doctorate studies commission in "Physics, Earth and Material Sciences" (cycle XXXVe cycle XXXVII) of the International School of Advanced Studies of the University of Camerino.  
2019

Member of the doctorate studies commission in "Physics, Earth and Material Sciences" (cycle XXXVe cycle XXXVII) of the International School of Advanced Studies of the University of Camerino.  
2021

Member of the doctorate studies commission in "Physics, Earth and Material Sciences" (cycle XXXVe cycle XXXVII) of the International School of Advanced Studies of the University of Camerino.  
2022

Referee of international journals: Nanoresearch letters, Springer, Journal of Physics D, Applied Physics, IOP, Journal of Applied surface science, Elsevier, Crystal Growth, Elsevier, Applied materials and interfaces, ACS, Energy storage materials, Elsevier, Journal of Radiation Physics and Chemistry, Sciencedirect. IEEE Transactions on Applied Superconductivity.  
from 01-01-2015 to today

## List of Publications

- 1-"Rezvani, SJ; Pinto, N; Boarino, L; Celegato, F; Favre, L; Berbezier, I; ", Diffusion induced effects on geometry of Ge nanowires, *Nanoscale*, 6, 13, 7469-7473, 2014, Royal Society of Chemistry
- 2-"Carturan, S; Maggioni, G; Rezvani, SJ; Gunnella, R; Pinto, N; Gelain, M; Napoli, DR; ", "Wet chemical treatments of high purity Ge crystals for  $\gamma$ -ray detectors: Surface structure, passivation capabilities and air stability", *Materials Chemistry and Physics*, 161, 116-122, 2015, Elsevier
- 3-"Rezvani, SJ; Pinto, N; Enrico, E; D'Ortenzi, L; Chiodoni, A; Boarino, L; ", Thermally activated tunneling in porous silicon nanowires with embedded Si quantum dots, *Journal of Physics D: Applied Physics*, 49, 10, 105104, 2016, IOP Publishing
- 4-"Rezvani, SJ; Ciambezi, Matteo; Gunnella, Roberto; Minicucci, Marco; Munoz, MA; Nobili, Francesco; Pasqualini, Marta; Passerini, Stefano; Schreiner, Christian; Trapananti, Angela; ", Local structure and stability of SEI in graphite and ZFO electrodes probed by as K-Edge absorption spectroscopy, *The Journal of Physical Chemistry C*, 120, 8, 4287-4295, 2016, American Chemical Society
- 5-"Rezvani, Javad; ", Fabrication and characterization of semiconductor Nanowires based on Silicon and Germanium 2014, SCHOOL OF ADVANCED STUDIES-Doctoral course in Physics (XXVI cycle)
- 6-"Rezvani, SJ; Gunnella, R; Neilson, D; Boarino, L; Croin, L; Aprile, G; Fretto, M; Rizzi, P; Antonioli, D; Pinto, N; ", Effect of carrier tunnelling on the structure of Si nanowires fabricated by metal assisted etching, *Nanotechnology*, 27, 34, 345301, 2016, IOP Publishing
- 7-"Rezvani, SJ; Ciambezi, M; Gunnella, R; Minicucci, M; Nobili, Francesco; Pasqualini, M; Munoz-Marquez, MA; Trapananti, A; Witkowska, A; Di Cicco, A; ", SEI Formation and Evolution in Graphite and ZFO-C Electrodes Probed by X-ray Absorption Spectroscopy, *ECS Meeting Abstracts*, 47, 2226, 2016, IOP Publishing
- 8-"Rezvani, SJ; Pinto, N; Morresi, L; Ficcadenti, M; Murri, R; Celegato, F; Boarino, L; ", Growth of diluted magnetic germanium nanowires using manganese nano-droplets, *UNICAM Science*.
- 9-"Rezvani, SJ; Favre, L; Celegato, F; Boarino, L; Berbezier, Isabelle; Pinto, N; ", Supersaturation state effect in diffusion induced Ge nanowires growth at high temperatures, *Journal of Crystal Growth*, 436, 51-55, 2016, Elsevier

10-"Sartale, SD; Ansari, AA; Rezvani, S-J; ",Influence of Ti film thickness and oxidation temperature on TiO<sub>2</sub> thin film formation via thermal oxidation of sputtered Ti film,Materials Science in Semiconductor Processing,16,6,2005-2012,2013, Elsevier

11-"Pinto, N; Rezvani, SJ; Favre, L; Berbezier, I; Fretto, M; Boarino, L; ",Geometrically induced electron-electron interaction in semiconductor nanowires,Applied Physics Letters,109,12,123101,2016, AIP Publishing

12-"Rezvani, SJ; Pinto, N; Boarino, L; ",Rapid formation of single crystalline Ge nanowires by anodic metal assisted etching,CrystEngComm,18,40,7843-7848, 2016, Royal Society of Chemistry

13-"D'Ortenzi, L; Monsù, R; Cara, E; Fretto, M; Kara, S; Rezvani, SJ; Boarino, Luca; ",Electrical contacts on silicon nanowires produced by metal-assisted etching: a comparative approach,Nanoscale research letters,11,1,1-6,2016,Springer US

14-"Minicucci, Marco; Tabassam, Lubna; Natali, Riccardo; Mancini, Giorgio; Rezvani, SJ; Di Cicco, Andrea; ",Double-edge X-ray absorption study of LiFe<sub>1-x</sub>Ni<sub>x</sub>PO<sub>4</sub> cathode materials,Journal of Materials Science, 52,9,4886-4893,2017, Springer US

15-"Rezvani, S Javad; Gunnella, Roberto; Witkowska, Agnieszka; Mueller, Franziska; Pasqualini, Marta; Nobili, Francesco; Passerini, Stefano; Cicco, Andrea Di; ",Is the Solid Electrolyte Interphase an Extra-Charge Reservoir in Li-Ion Batteries?,ACS applied materials & interfaces,9,5,4570-4576,2017, American Chemical Society

16-"Secchiaroli, M; Calcaterra, S; Tran, HY; Rezvani, SJ; Nobili, F; Marassi, R; Wohlfahrt-Mehrens, M; Dsoke, S; ",Development of non-fluorinated cathodes based on Li<sub>3</sub>V<sub>1.95</sub>Ni<sub>0.05</sub>(PO<sub>4</sub>)<sub>3</sub>/C with prolonged cycle life: a comparison among Na-alginate, Na-carboxymethyl cellulose and poly (acrylic acid) binders",Journal of The Electrochemical Society, 164,4, A672, 2017,IOP Publishing

17-"Minicucci, Marco; Tabassam, Lubna; Natali, Riccardo; Mancini, Giorgio; Rezvani, SJ; Di Cicco, Andrea; ",Double-edge X-ray absorption study of LiFe<sub>1-x</sub>Ni<sub>x</sub>PO<sub>4</sub> cathode materials,Journal of Materials Science,52,9,4886-4893, 2017,Springer US

18-"Napoli, DR; Maggioni, G; Carturan, S; Eberth, J; Boldrini, V; De Salvador, D; Napolitani, E; Cocconi, P; Della Mea, G; Gelain, M; ",New Developments in HPGe Detectors for High Resolution Detection,Acta Physica Polonica B,48,3,387,2017, 19-"Pinto, Nicola; Rezvani, S Javad; Perali, Andrea; Fiammia, Luca; Milošević, Milorad V; Fretto, Matteo; Cassiogo, Cristina; De Leo, Natascia; ",Dimensional crossover and incipient quantum size effects in superconducting niobium nanofilms,Scientific reports, 8,1,1-12,2018,Nature Publishing Group

20-"Pasqualini, M; Calcaterra, S; Maroni, F; Rezvani, SJ; Di Cicco, A; Alexander, S; Rajantie, H; Tossici, R; Nobili, F; ",Electrochemical and spectroscopic characterization of an alumina-coated LiMn<sub>2</sub>O<sub>4</sub> cathode with enhanced interfacial stability,Electrochimica Acta,258,175-181,2017,Pergamon

21-"Rezvani, Javad; Nobili, Francesco; Gunnella, Roberto; Ali, Mushtaq; Tossici, Roberto; Passerini, Stefano; Di Cicco, Andrea; ",SEI Dynamics in Metal Oxide Conversion Electrodes of Li Ion Batteries,The Journal of Physical Chemistry C,121,,26379,2017,American Chemical Society

22-"Rezvani, SJ; Pasqualini, M; Witkowska, A; Gunnella, R; Birrozzi, A; Minicucci, M; Rajantie, H; Copley, M; Nobili, F; Di Cicco, A; ",Binder-induced surface structure evolution effects on Li-ion battery performance,Applied Surface Science,,2017, Elsevier

23-"A. Marcelli, M.I. Mazuritskiy, S.B. Dabagova, D. Hampai, A.M. Lerer, E.A. Izotova, A. D'Elia, S. Turchini, N. Zema, F. Zuccaro, M. de Simone, S. Javad Rezvani, M. Coreno; ",A new XUV optical end-station to characterize compact and flexible photonic devices using synchrotron radiation,Journal of Instrumentation,13,C03035, 2018

24-"Diaz-Aguado, Millan F; Bonnell, John W; Bale, Stuart D; Rezvani, SJ; Koshmak, Konstantin; Giglia, Angelo; Nannarone, Stefano; Gruntman, Mike; ",Experimental Investigation of Total Photoemission Yield from New Satellite Surface Materials,Journal of Spacecraft and Rockets,56,1,248-258,2019,American Institute of Aeronautics and Astronautics

25-"Rezvani, SJ; Perali, Andrea; Fretto, Matteo; De Leo, Natascia; Fiammia, Luca; Milošević, Milorad; Nannarone, Stefano; Pinto, Nicola; ",Substrate-induced proximity effect in superconducting niobium nanofilms,Condensed Matter, 4, 1, 4, 2018, MDPI

26-"Rezvani, S. J.; Diccico, A.; Gunnella, R.; Nobili, F.; Passerini, and S.; ",A novel approach to a non-destructive depth profiling using soft x-ray spectroscopies,High Precision X-Ray Measurements,9,2018,Materials investigation techniques

27-"Rezvani, SJ; Gunnella, R; Neilson, D; Boarino, Luca; Croin, L; Aprile, GIULIA; Fretto, M; Rizzi, Paola; Antonioli, D; Pinto, N; ",Effect of carrier tunneling on the structure of Si nanowires fabricated by metal assisted etching, Nanotechnology, 27, 34, 345301, 2016, IOP Publishing

28-"Balerna, Antonella; Bartocci, Samanta; Batignani, Giovanni; Cianchi, Alessandro; Chiadroni, Enrica; Coreno, Marcello; Cricenti, Antonio; Dabagov, Sultan; Di Cicco, Andrea; Faiferri, Massimo; ",The Potential of EuPRAXIA@ SPARC\_LAB for Radiation Based Techniques,Condensed Matter,4,1,30,2019,Multidisciplinary Digital Publishing Institute

29-"Mazuritskiy, Mikhail Izrailevich; Lerer, Aleksandr Mikhailovich; Marcelli, A; Dabagov, Sultan Barazbievich; Coreno, M; D'Elia, A; ",Coherent Excitation of X-Ray Fluorescence and Interference of Radiation at the Output of Polycapillary Structures,JETP Letters,107,10,600-605,2018,Springer

30-"Macis, Salvatore; Rezvani, Javad; Davoli, Ivan; Cibin, Giannantonio; Spataro, Bruno; Scifo, Jessica; Faillace, Luigi; Marcelli, Augusto; ",Structural Evolution of MoO<sub>3</sub> Thin Films Deposited on Copper Substrates upon Annealing: An X-ray Absorption Spectroscopy Study,Condensed Matter,4,2,41,2019,Multidisciplinary Digital Publishing Institute

31-"Fallica, Roberto; Rezvani, Seyed Javid; Nannarone, Stefano; Borisov, Sergei; De Simone, Danilo; Babin, Sergey; Lorusso, Gian; Vandenberghe, Geert; ",The hidden energy tail of low energy electrons in EUV lithography,Advances in Patterning Materials and Processes XXXVI,10960,,7-15,2019,SPIE

32-"Ciambezi, M; Trapananti, A; Rezvani, SJ; Maroni, F; Bresser, D; Minicucci, M; Nobili, F; Gunnella, R; Passerini, S; Di Cicco, A; ",Initial lithiation of carbon-coated zinc ferrite anodes studied by in-situ X-ray absorption spectroscopy,Radiation Physics and Chemistry,175,,108468,2020,Pergamon

33-"Macis, Salvatore; Rezvani, Javad; Davoli, Ivan; Cibin, Giannantonio; Spataro, Bruno; Scifo, Jessica; Faillace, Luigi; Marcelli, Augusto; ",Structural on Copper Evolution Substrates of upon MoO Annealing: 3 Thin Films An Deposited X-ray Absorption Spectroscopy Study,High Precision X-Ray Measurements,4,,22,2019,MDPI

34-"Rezvani, SJ; Mijiti, Y; Gunnella, R; Nobili, F; Trapananti, A; Minicucci, M; Ciambezi, M; Bresser, D; Nannarone, S; Passerini, S; ",Structure rearrangements induced by lithium insertion in metal alloying oxide mixed spinel structure studied by x-ray absorption near-edge spectroscopy,Journal of Physics and Chemistry of Solids, 136,109172, 2020, Pergamon

35-"Balerna, Antonella; Rezvani, Javad; Stellato, Francesco; Fumero, Giuseppe; Sánchez, Héctor Jorge; Perfetto, Enrico; Coreno, Marcello; Robledo, José Ignacio; Manca, Rosa; Dabagov, Sultan; ",The Potential of EUPRAXIA\_LAB for Radiation Based Techniques,Condens. Mat.,4 ,30,2019,

36-"Gunnella, R.; Nobili, F.; Rezvani, S.J.; Witkowska, A.; DiCicco, A.; ",SEI growth and characterization by soft XAS in nanostructured Li batteries anodes,NEEM 2015,2015,

37-"D'Elia, A; Rezvani, SJ; Cossaro, A; Stredansky, M; Grazioli, C; Li, BW; Zou, CW; Coreno, M; Marcelli, A; ",Strain Induced Orbital Dynamics Across the Metal Insulator Transition in Thin VO<sub>2</sub>/TiO<sub>2</sub> (001) Films,Journal of Superconductivity and Novel Magnetism,33,8,2383-2388,2020,Springer US

38-"Rezvani, SJ; Di Cicco, A; Gunnella, R; Nobili, F; Passerini, S; Pasquali, L; Nannarone, S; ",Solid Electrolyte interface formed on metal alloy oxide nanoparticles via lithiation,Interfaces,9,,4570-4576,2017,

39-"SJ, Rezvani; Perali, Andrea; Fretto, Matteo; De Leo, Natascia; Fiammia, Luca; Milosevic, Milorad; Nannarone, Stefano; Pinto, Nicola; ",Substrate induced proximity effect in superconducting niobium nanofilms,2018,Preprints

40-"Rezvani, J.; Gioacchino, D. Di; Gatti, C.; Poccia, N.; Ligi, C.; Tocci, S.; Guidi, M. Cestelli; Cibella, S.; Lupi, S.; Marcelli, A.; ",Tunable vortex dynamics in proximity junction arrays: a possible accurate and sensitive 2D THz detector,Acta Physica Polonica A,1,137,17,2020,

41-"Macis, Salvatore; Tomarchio, Luca; Tofani, Silvia; Rezvani, S Javad; Faillace, Luigi; Lupi, Stefano; Irizawa, Akinori; Marcelli, Augusto; ",Angular Dependence of Copper Surface Damage Induced by an Intense Coherent THz Radiation Beam,Condensed Matter,5,1,16,2020,Multidisciplinary Digital Publishing Institute

42- "Delia, A; Rezvani, SJ; Zema, N; Zuccaro, F; Fanetti, M; Belec, Blaž; Li, BW; Zou, CW; Spezzani, C; Sacchi, M; ",Tunable electronic structure and stoichiometry dependent disorder in Nanostructured VO<sub>2</sub> x films,arXiv preprint arXiv:2004.07042, 2020,

43- "Rezvani, S Javad; Di Gioacchino, Daniele; Gatti, Claudio; Ligi, Carlo; Cestelli Guidi, Mariangela; Cibella, Sara; Fretto, Matteo; Poccia, Nicola; Lupi, Stefano; Marcelli, Augusto; ",Proximity array device: A novel photon detector working in long wavelengths,Condensed matter,5,2,33,2020,MDPI

44- "D'Elia, Alessandro; Grazioli, Cesare; Cossaro, Albano; Li, Bowen; Zou, Chongwen; Rezvani, Javad; Pinto, Nicola; Marcelli, Augusto; Coreno, Marcello; ",Electron Correlation driven Metal-Insulator transition in Strained and Disordered VO<sub>2</sub> films,arXiv preprint arXiv:2006.07930, 2020,

45- "S. J. Rezvani, D. Di Gioacchino, S. Tofani, A. D'Arco, C. Ligi, S. Lupi, C. Gatti, M. Cestelli Guidi, and A. Marcelli; ",A cryogenic magneto-optical device for long wavelength radiation,Review of Scientific Instruments,91,075103,,2020,

46- "Parmar, Rahul; Rezvani, SJ; Nobili, Francesco; Di Cicco, Andrea; Trapananti, Angela; Minicucci, Marco; Nannarone, Stefano; Giglia, Angelo; Maroni, Fabio; Gunnella, Roberto; ",Electrochemical response and structural stability of the Li<sup>+</sup> ion battery cathode with coated LiMn<sub>2</sub>O<sub>4</sub> nanoparticles,ACS Applied Energy Materials,3,9,8356-8365,2020,American Chemical Society

47- "Rezvani, S Javad; Pinto, Nicola; Gunnella, Roberto; D'Elia, Alessandro; Marcelli, Augusto; Di Cicco, Andrea; ",Engineering Porous Silicon Nanowires with Tuneable Electronic Properties,Condensed Matter, 5, 4, 57, 2020, Multidisciplinary Digital Publishing Institute

48- "Villa, F; Balerna, A; Chiadroni, E; Cianchi, A; Coreno, M; Dabagov, SA; Cicco, Di; Gunnella, R; Marcelli, A; Masciovecchio, C; ",Photon beam line of the water window FEL for the EuPRAXIA@ SPARC\_LAB project,Journal of Physics: Conference Series,1596,1,012039,2020,IOP Publishing

49-"Di Cicco, A; Polzoni, G; Gunnella, R; Trapananti, A; Minicucci, M; Rezvani, SJ; Catone, D; Di Mario, L; Pelli Cresi, JS; Turchini, S; ",Broadband optical ultrafast reflectivity of Si, Ge and GaAs",Scientific Reports,10,1,1-9,2020,Nature Publishing Group

50-"D'Elia, A; Grazioli, C; Cossaro, A; Li, BW; Zou, CW; Rezvani, SJ; Pinto, N; Marcelli, A; Coreno, M; ",Strain mediated Filling Control nature of the Metal-Insulator Transition of VO<sub>2</sub> and electron correlation effects in Nanostructured films,Applied Surface Science,540,,148341,2021,North-Holland

51-"Rezvani, SJ; D'Elia, A; Macis, S; Nannarone, S; Lupi, S; Schütt, F; Rasch, F; Adelung, R; Lu, B; Zhang, Z; ",Structural anisotropy in three dimensional macroporous graphene: A polarized XANES investigation,Diamond and Related Materials,111,,108171,2021,Elsevier

52-"D'Elia, Alessandro; Grazioli, Cesare; Cossaro, Albano; Li, Bowen; Zou, Chongwen; Rezvani, Seyed Javad; Marcelli, Augusto; Coreno, Marcello; ",Detection of Spin Polarized Band in VO<sub>2</sub>/TiO<sub>2</sub> (001) Strained Films via Orbital Selective Constant Initial State Spectroscopy,Condensed Matter,5,4,72,2020,Multidisciplinary Digital Publishing Institute

53- "Rezvani, SJ; Parmar, R; Maroni, F; Nobili, F; Di Cicco, A; Gunnella, R; ",Does Alumina Coating Alter the Solid Permeable Interphase Dynamics in LiMn<sub>2</sub>O<sub>4</sub> Cathodes?,The Journal of Physical Chemistry C,124,49,26670-26677,2020,American Chemical Society

54- "Eisenmann, Tobias; Asenbauer, Jakob; Rezvani, Seyed Javad; Diemant, Thomas; Behm, Rolf Jürgen; Geiger, Dorin; Kaiser, Ute; Passerini, Stefano; Bresser, Dominic; ",Impact of the Transition Metal Dopant in Zinc Oxide Lithium-Ion Anodes on the Solid Electrolyte Interphase Formation,Small Methods, 2001021,2021,

55-"D'Elia, Alessandro; Rezvani, SJ; Zema, Nicola; Zuccaro, F; Fanetti, Mattia; Belec, Blaž; Li, BW; Zou, CW; Spezzani, Carlo; Sacchi, Maurizio; ",Stoichiometry and disorder influence over electronic structure in nanostructured VO<sub>x</sub> films,Journal of Nanoparticle Research,23,1,1-9,2021, Springer

56-"Mazuritskiy, MI; Lerer, AM; Marcelli, A; Dabagov, SB; Coreno, M; D'Elia, A; Rezvani, SJ; ",Wave propagation and focusing of soft X-rays by spherical bent microchannel plates,Journal of Synchrotron Radiation,28,2,383-391,2021,International Union of Crystallography

57-"Rezvani, S Javad; Favre, Luc; Giuli, Gabriele; Wubulikasimu, Yiming; Berbezier, Isabelle; Marcelli, Augusto; Boarino, Luca; Pinto, Nicola; ",Spontaneous shape transition of  $Mn_xGe_{1-x}$  islands to long nanowires,Beilstein Journal of Nanotechnology,12,1,366-374,2021,Beilstein-Institut

58-"Rezvani, Seyed Javad; Mijiti, Yimin; Galdenzi, Federico; Boarino, Luca; Gunnella, Roberto; Marcelli, Augusto; Pinto, Nicola; Di Cicco, Andrea; ",Structural Properties of Porous Silicon Nanowires: A Combined Characterization by Advanced Spectroscopic Techniques,Synchrotron Radiation Science and Applications,,191-201,2021,Springer

59-"Di Cicco, Andrea; Rezvani, Seyed Javad; Nannarone, Stefano; ",Revisiting the Probing Depths of Soft X-ray Absorption Techniques by Constant Initial State Photoemission Experiments,Synchrotron Radiation Science and Applications,,85-97,2021,Springer

60-"Rezvani, SJ; Parmar, R; Maroni, F; Nobili, F; Di Cicco, A; Gunnella, R; ",Does Alumina Coating Alter the Solid Permeable Interphase Dynamics in  $LiMn_2O_4$  Cathodes?, 2020,

61-"Rezvani, SJ; Mijiti, Y; Di Cicco, A; ",Porous silicon nanowires phase transformations at high temperatures and pressures,Applied Physics Letters,119,5,053101,2021,AIP Publishing LLC

62-"Parmar, R; de Freitas Neto, DB; Kazim, S; Rezvani, SJ; Rosolen, JM; Gunnella, R; Amati, M; Gregoratti, L; ",Manganese vanadium sulfate-oxide cylindrical core-shell heterostructures by electro-spray deposition on graphite foil for  $Li^+$  ion intercalation,Journal of Alloys and Compounds,888,,161483,2021,Elsevier

63-"Darjazi, Hamideh; Rezvani, S Javad; Brutti, Sergio; Nobili, Francesco; ",Improvement of structural and electrochemical properties of NMC layered cathode material by combined doping and coating,Electrochimica Acta, 404,139577, 2022, Pergamon

64-"Eisenmann, Tobias; Birrozzi, Adele; Mullaliu, Angelo; Asenbauer, Jakob; Giuli, Gabriele; Trapananti, Angela; Rezvani, S Javad; Passerini, Stefano; Bresser, Dominic; ", "The Impact of Transition Metal Dopants in Conversion/Alloying Lithium-Ion Anodes on Structure, SEI Formation and Electrochemical Performance" Small Methods, 2001021, 2021

65-"Parmar, Rahul; de Freitas Neto, DB; Rosolen, JM; Rezvani, Seyed Javid; Kazim, Shafaq; Rajak, Piu; Ciancio, Regina; Thakur, Mukesh Kumar; Minicucci, Marco; Amati, Matteo; ",Spheroidal  $Mn_2V_2O_7$ /Ego on Carbon Nanotubes/Carbon Fiber Binder-Free Battery Electrode: Electrosynthesis and  $Na^+$  Intercalation,Carbon Fiber Binder-Free Battery Electrode: Electrosynthesis and  $Na^+$  Intercalation, SSRN, 2021

66-"Ho, Lok-Ping; Younas, Muhammad; Borgersen, Jon; Khan, Rao Tahir Ali; Rezvani, Seyed Javad; Pollastri, Simone; Akhtar, Muhammad Javed; Nadeem, Muhammad; Huang, Dong; Shi, Ying-Li; ",Photoluminescence intensity of Cu-doped ZnO modulated via defect occupancy by applying electric bias,Journal of Physics D: Applied Physics, 55, 31,315102,2022,IOP Publishing

67-"Paparoni, Francesco; Mijiti, Yimin; Kazim, Shafaq; Minicucci, Marco; Pinto, Nicola; D'Elia, Alessandro; Macis, Salvatore; Kim, Changyoung; Huh, Soonsang; Gunnella, Roberto; ",Metallic Interface Induced Ionic Redistribution within Amorphous  $MoO_3$  Films,Advanced Materials Interfaces,9,23,2200453,2022,

68-"Parmar, Rahul; Amati, Matteo; Gregoratti, Luca; Rezvani, Seyed Javad; Banerjee, Pritam; Rajak, Piu; Ciancio, Regina; Gunnella, Roberto; ",How the Environment Encourages the Natural Formation of Hydrated  $V_2O_5$ ,ACS Omega, 2022, ACS Publications

69-"Trapananti, A; Giuli, G; Eisenmann, T; Mueller, F; Di Cicco, A; Ciambezi, M; Minicucci, M; Rezvani, SJ; Nobili, F; Gunnella, R; ",Insight into the lithiation mechanisms in Li-ion anode materials by x-ray absorption spectroscopy, International School and Symposium on Synchrotron Radiation in Natural Science 2022,

70-"Abdi, Yaser; Mazaheri, Ali; Hajibaba, Soheil; Darbari, Sara; Rezvani, Seyed Javad; Cicco, Andrea Di; Paparoni, Francesco; Rahighi, Reza; Gholipour, Somayeh; Rashidi, Alimorad; ",A Two-Dimensional Borophene Supercapacitor,ACS Materials Letters,4,,1929-1936,2022,ACS Publications

71-"Parmar, R; Rezvani, SJ; de Freitas Neto, DB; Rosolen, JM; Kazim, S; Mattiello, S; Rajak, P; Ciancio, R; Thakur, MK; Minicucci, M; ",Structural phase stability and homogeneity enhancement of electrochemically synthesized  $Mn_2V_2O_7$  by nanocarbon networks,Carbon Trends,100218,2022,Elsevier