

SEYED ASHKAN MOGHADAM ZIABARI



CroRIS ID: 38008 / Scientific ID number: 398552

BASIC INFORMATION

Bijenička cesta 46, 10000, Zagreb

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Gender: Male

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EDUCATION

Ph. D. Dec 2022 – Expected 2025–2026
University of Zagreb
Field: Solid State Physics

Project participation: Pressure- and Temperature-driven Phase transitions in Strongly Correlated Electron Systems (Croatian science foundation project no. UIP-2019-04-2154) under supervision of Dr. Yuki Utsumi Boucher and Dr. Trpimir Ivšić (Project leader: Dr. Yuki Utsumi Boucher).

Project participation: Ground states in competition – Strong correlations, frustration and disorder (FrustrKor) under supervision of Dr. Yuki Utsumi Boucher and Dr. Trpimir Ivšić (Project leader: Dr. Damir Starešinić)

Topic defence title: Study of electrical and magnetic properties of manganese phosphides under extreme conditions

M. Sc. Sep 2017 – Jun 2020
Iran University of Science and Technology (IUST)
Field: Solid State Physics

M. Sc. Thesis: Design and manufacture of magnetic hybrid components based on biocompatible polymer matrices in magnetic fields under supervisions of Prof. Dr. Ali Maleki and Assist. Prof. Dr. Mohsen Babamoradi.

B. Sc. Sep 2013 – Jan 2017
University of Guilan
Field: Solid State Physics.

KEY SKILLS AND EXPERIENCES

*Research Skills and Experiences

1. Characterization of materials with analysis devices such as MPMS and PPMS (Quantum Design), electrical resistivity measurement by using four probe, scanning electron microscopy (SEM), Energy Dispersive X-Ray (EDX), powder x-ray diffraction (XRD), optical spectroscopic measurements (from ultraviolet to infrared), and thermogravimetric analysis.

2. Hands on experience with devices such as MPMS (Quantum Design), electrical resistivity measurement by using four probe, scanning electron microscopy (SEM), Energy Dispersive X-Ray (EDX), Chemical Vapor Deposition (CVD), Sputtering Deposition, and Vacuum Evaporation; and synthesis methods such as Chemical Vapor Transport (CVT), Sn-flux, in-situ and blend.

3. Experienced to work with high-pressure equipment to carry out experiments at pressures as high as 10 GPa and more by Diamond Anvil Cell (DAC). Plus, experienced to make four probe contacts on samples smaller than 100 μm in length by hand.

4. Experienced to work with cryogenic systems reaching to temperatures as low as 2K using liquid helium and liquid nitrogen.

5. Skilled in soft-wares such as X-pert high score (characterization of XRD graphs), Origin Lab (drawing graphs), SCAPS-ID, Ansys Lumerical FDTD and 3Ds Max (graphic modeling).

*Materials and subjects studied

1. Arpes Low Energy (APE-LE) study on $\text{CoI}/3\text{TaS}_2$ at APE beamline Elettra Sincrotrone Trieste from 20.05.2024 to 26.05.2024.
2. Transparent Conductive Oxide (TCO) thin films and thermoelectric generators (materials such as ZnO , SnO_2 , FTO, FZO and etc).
3. Thin film solar cells (CIGS and CZTSSe).
4. Magnetic nano composites (Bentonite/ Fe_3O_4 , Agar/ Fe_3O_4 and PEO/ Fe_3O_4).
5. Electric, magnetic and optical studeis of transition metal phosphides under extreme conditions (Mn_2P and Fe_2P).

WORK EXPERIENCES AND GENERAL QUALIFICATIONS

Research and Laboratory Assistant (PhD level)

Since Dec 2021

Institute of Physics, Zagreb

Assistant at the Laboratory for Physics of Transport Phenomena (LPTP)

Group for research of complex and strongly correlated functional materials

Supervisor 1:

Dr. Yuki Utsumi Boucher

Email: yutsumi@ifs.hr

Web Page: <http://www.ifs.hr/en/people/utsumi-yuki/>

Google Scholar Link: <https://scholar.google.com/citations?user=GWKucycAAAAJ&hl=en>

Supervisor 2:

Dr. Trpimir Ivšić

Email: tivsic1@irb.hr

Web page: <https://www.irb.hr/Zavodi/Zavod-za-fizicku-kemiju/Laboratorij-za-odrzivu-i-primijenjenu-kemiju/Zaposlenici/Trpimir-Ivšic>

Google Scholar: <https://scholar.google.com/citations?user=IlcrYqwAAAAJ&hl=en>

Group leader:

Dr. Petar Popčević

Email: ppopcevic@ifs.hr

Web Page: <http://www.ifs.hr/en/people/petar-popcevic/>

Google Scholar Link: <https://scholar.google.at/citations?user=IliCxnwAAAAJ&hl=en>

Research and Laboratory Assistant (MSc level)

Sep 2017 - Sep 2020

Iran University of Science and Technology (IUST)

Laboratory (Department of Chemistry):

Catalysts and Organic Synthesis Research Laboratory

Head of the Lab:

Prof. Dr. Ali Maleki

Email: maleki@iust.ac.ir

Google Scholar Link: <https://scholar.google.com/citations?user=xNWCi3AAAAAJ&hl=en&oi=ao>**Research and Laboratory Assistant (BSc level)**

Sep 2013 - Sep 2017

University of Guilan

Laboratories (Department of Science):

1. Condensed Matter Laboratory (Vacuum Technique)
2. Chemical Vapor Deposition (CVD) Laboratory
3. New Energies Laboratory (Solar Cell & Photo thermal)

Head of the Lab:

Prof. Dr. Seyed Mohammad Rozati

Email: smrozati@guilan.ac.ir & smrozati@gmail.com

Google Scholar Link: <https://scholar.google.com/citations?user=PwIULtoAAAAAJ&hl=en&oi=ao>**General qualifications**

1. Selected in the Iranian University Entrance Exam (well known as Konkour) and admission to two of the best free public universities in Iran with high global rankings.
2. Top researcher of the school of physics among Master of Science students at Iran university of science and technology (IUST).
3. Diploma of Mathematics and Physics from prestigious Dr. Shahid Beheshti (Former Shahpour and former Nomreh 1) high school, the oldest and one of the best high schools in Guilan province registered in the Iranian National Heritage List with great well-known graduated people such as Prof. Dr. Majid Samii, Prof. Dr. Fazlollah Reza and Prof. Dr. Mohammad Moin in its records.
4. Finished 4th out of 32 students in bachelor level in solid state physics at the University of Guilan.
5. Awarded with a certificate in the Health Security Environment (HSE) as an independent course at Iran University of Science and Technology (IUST).
6. Awarded with a certificate in the General Employment and Entrepreneurship Skills as an independent course at Academic Center for Education, Culture and Research, Ardabil branch.
7. Awarded with a certificate in Introduction to life skills as an independent course at Academic Center for Education, Culture and Research, Ardabil branch.
8. International day of physics organizer member at the University of Guilan.
9. Participated in the 11th Kharazmi (Khwarizmi) Youth Festival with a dual-purpose plan to convert sea water to distilled water and generate electricity from two different mechanisms at high in 2013.

CONFERENCES, SCHOOLS AND WORKSHOPS

1. Poster presentation at the school on Exotic Superconductivity (ExoSup 2022) held at the Institut d'Etudes Scientifiques de Clermont-Ferrand (IESC), France from 14/06/2022 to 24/06/2022.
2. Poster presentation at the "2023 European School on Magnetism (European Magnetism Association (EMA))" with the topic "Nanomagnetism for emerging technologies" chaired by Julio Camarero (Universidad Autónoma de Madrid / IMDEA Nanociencia) and Rodolfo Miranda (IMDEA Nanociencia / Universidad Autónoma de Madrid), and supported by the Instituto Universitario de Ciencia de Materiales Nicolás Cabrera in La Cristalera, Madrid, Spain from 03/09/2023 to 15/09/2023.
3. Participated in the International Workshop on Correlations and Angle-Resolved Photoemission Spectroscopy (CORPES22) held virtually at Brookhaven National Laboratory (BNL) in USA in 2022.
4. Participated in the Magnetic properties measurement system (MPMS) online workshop held by Quantum Design GmbH with a focus on SQUID magnetometer MPMS3 in Germany in 2022. Participated in the 6th PhD Symposium with an international meet up at the University of Zagreb, Croatia on Apr 23-24th 2022.
5. Participated in the 7th PhD Symposium with an international meet up at the University of Zagreb, Croatia on Apr 21-22th 2023.
6. Poster presentation at the ECMetAC Days 2022 conference organized by the University of Split, Faculty of Science, Croatia, from 21st to 24th November 2022.
7. Poster presentation at the the ECMetAC Days 2023 conference organized by the Jožef Stefan Institute (JSI), Ljubljana, and the University of Ljubljana, Faculty of Mathematics and Physics in Kranjska Gora, Slovenia, from 27th to 30th November 2023.
7. Organizing member and poster presentation at the the ECMetAC Days 2024 conference organized jointly by the Department of Physics, Faculty of Science, University of Zagreb, and the Institute of Physics, Zagreb, Croatia, from November 25 to 28, 2024, at the Institute of Physics in Zagreb.
8. Poster presentation at the 6th national conference on progress in superconductivity and magnetism on May 1st & 2nd 2019 at the University of Tehran in Iran.
9. Poster presentation at the 14th conference on condensed matter on Feb 6-7th 2019 at Shahid Chamran University of Ahvaz in Iran.
10. Presented an oral talk in "Kraków – Zagreb Condensed Matter Workshop 15 – 16 February 2023" held at the Faculty of Physics and Applied Computer Science, AGH University, Kraków, Poland.
11. Presented an oral talk in the 1st Mini-Workshop organized at the Institute of Physics, Zagreb on 2nd November 2022.
12. Presented a research achievement entitled "Magnetic Nanocomposite" at The 19th Exhibition of Research, Technology and Market Achievements of The Country (where the pavilion of the Iran University of Science and Technology (IUST) was selected by the organizers as one of the top pavilions among the research centers of the country).
13. Participated in the Comsol Multiphysics workshop at the University of Guilan.
14. Participated in the Vacuum technique workshop at the University of Guilan.

PUBLICATIONS

1. Rozati, S. M., & Ziabari, S. A. M. (2022). A review of various single layer, bilayer, and multilayer TCO materials and their applications. *Materials Chemistry and Physics*, 292, 126789.
2. Moghadam Ziabari, S. A., Abdolazadeh Ziabari, A., & Mousavi, S. J. (2022). Efficiency enhancement of thin-film solar cell by implementation of double-absorber and BSF layers: the effect of thickness and carrier concentration. *Journal of Computational Electronics*, 21(3), 675-683.
3. Ziabari, S. A. M., Babamoradi, M., Hajizadeh, Z., & Maleki, A. (2020). The effect of magnetic field on the magnetic and hyperthermia properties of bentonite/Fe₃O₄ nanocomposite. *Physica B: Condensed Matter*, 588, 412167.
4. Moghadam Ziabari, S. A., Babamoradi, M., Hajizadeh, Z., Maleki, A. (2020). 'The effect of magnetic field on the magnetic property of Agar/Fe₃O₄ nanocomposite', *Eurasian Chemical Communications*, 2(4), pp. 456-464. doi: 10.33945/SAMI/ECC.2020.4.4
5. Ziabari, M. S., Rozati, S. M., & Najafi, N. (2019). Transparent conductive oxide thermoelectric (TCO-TE) generators: fabrication and comparing of ZnO, SnO₂, fluorine doped tin oxide and fluorine doped zinc oxide materials as TCO TE generators. *Journal of Nanoelectronics and Optoelectronics*, 14(9), 1331-1338.

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Google Scholar Link:

<https://scholar.google.com/citations?user=dIYlpp8AAAAJ&hl=en&oi=sra>

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<https://www.researchgate.net/profile/Seyed-Ashkan-Moghadam-Ziabari-2>

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