






Mohammad Samanipour



Personal details

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Languages

- English ●●●●●
- Persian ●●●●●
- Dutch ●●●●●

Programming

- MATLAB ●●●●●
- C++ ●●●●●
- Python ●●●●●
- Fortran ●●●●●

Digital skills

- Microsoft Office ●●●●●
- Latex ●●●●●

Profile

Experienced physicist with a PhD in physics and five years of experience in material characterisation with EPR and UV-vis spectroscopy, quantum chemistry, electrochemistry, physical chemistry, data analysis, and numerical modelling. Proven track record in leading and conducting successful academic research projects. Skilled in scientific programming and proficient in utilising advanced analytical tools. Familiar with Data Science and Machine learning.

Employment

PhD Research and Development

Jun 2017 - Sep 2022

University of Antwerp, Antwerp

- EPR spectroscopy for material characterisation.
- Signal processing and data analysis with MATLAB.
- Numerical modelling, Density Functional Theory (DFT).
- Designing, developing, and testing novel in-situ spectro-electrochemical cells.
- Finding and proving organic chemical reaction mechanisms.
- Supervising undergraduate students.
- Tutor for laboratory techniques and data analysis.

Teacher Assistant

Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan

- Object-oriented C++ programming for Molecular dynamics and finite volume simulation.
- Developing multi-physics software to simulate the interaction of charged particles in the complex geometry of conductive media.
- Bash scripting in Linux using Makefile, the VIM editor.
- Parallel programming using CUDA and Open MP.
- Teaching C++ to master students

Education

PhD In physics

Jun 2017 - Sep 2022

University of Antwerp, Antwerp

Thesis title: When Electrocatalysis Meets Electron Paramagnetic Resonance - gaining insights into electrochemical reactions.

Master of Science in condensed matter physics

Sep 2011 - Jun 2014

Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan

Thesis title: Molecular dynamic simulation of charged particles surrounded by conductors.

Bachelor of Science in solid-state physics

Jan 2007 - Jun 2011

Kharazmi University, Tehran

Technical Skills

Lab skills

- **EPR spectroscopy:** Continuous wave(CW)-EPR, Pulse EPR, ENDOR
- **UV-vis Spectroscopy**

Linux	● ● ● ● ●
Origin lab	● ● ● ● ●
Adobe Photoshop	● ● ● ● ●
Parallel programming	● ● ● ● ●
Comsol	● ● ● ● ●

Courses

Python for Data Science and Machine learning BootCamp

Nov 2022

Udemy online course

Leadership and teamwork

May 2020

University of Antwerp

Scientific writing in English

Nov 2019

University of Antwerp

Comsol introduction

Nov 2019

University of Antwerp

Methods of data collection

Mar 2020

University of Antwerp

Applied communication

Feb 2019

University of Antwerp

Soft skills

- Critical thinking
- Problem-solving
- Team player

Hobbies

- Football
- Video and board games
- Photography
- Travelling

- **Electrochemistry:** CV, CA
- **Cryogenic Techniques (low temperature)**
- **Chemical sample preparation**

Data analysis and computational modelling

- **Signal processing**
- **Density functional theory (DFT)**
- **Molecular dynamic simulations (MD)**
- **Data science:** NumPy, Pandas, Seaborn, Matplotlib, SKlearn
- **Machine learning:** Tensorflow, Spark
- **Chemistry software:** Avogadro, Chimera, Hyperchem

Scientific articles and presentations

Publications

- I have published nine publications related to my PhD and MSc that are available on my Google Scholar: <https://scholar.google.com/citations?user=AJU4GPkAAAAJ&hl=en&oi=ao>

Oral presentations

- Studying electrocatalysis by Electron paramagnetic resonance, 28th meeting of the Benelux EPR society, June 2021, Leiden-Gent.

References

Prof. Sabine Van Doorslaer (Promotor)

University of Antwerp, Antwerp

sabine.vandoorslaer@uantwerpen.be

Dr HY Vincent Ching (Co-promotor)

ExxonMobil, Machelen

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Prof. Sofie Cambre

University of Antwerp, Antwerp

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