

# Parnia Bastani Elahabadi

Department of physics, Shahid Beheshti University, Evin, Darakeh st, Tehran, IRAN

## M. Sc. PHYSICS

Date of Birth: 12/12/1994

Nationality: Iranian

Marital status: Married

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## EDUCATION

2017 – 2020



**M.Sc. student**, Department of Physics, Shahid Beheshti University, Solid State Physics

**Thesis:** Synthesis and characterization of Graphene-MoSe<sub>2</sub> heterostructure for memristor application

**Supervisor:** Prof. Seyed Majid Mohseni

**Advisor:** Prof. Ali Sadeghi

**Grade:** 87.6/100

**Rank:** 1/13

2013 – 2017



**B.Sc.**, Department of physics, Alzahra University, Physics

**Thesis:** Construction of a material dielectric coefficient measuring device at the desired frequency

**Supervisor:** Prof. Kamran Kaviani

**Grade:** 93.15/100

**Rank:** 1/34

## TEACHING

02/2019 – 05/2019



**Teaching Assistant**, Advanced Solid State Physics Lab, Department of Physics, Shahid Beheshti University

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## SCIENTIFIC EXPERIENCES

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- 2020 - Present ● **Researcher**, Nanophysics and Spintronics Lab, Shahid Beheshti University  
**Project:** CVD growth of WS<sub>2</sub> thin film  
**Supervisor:** Prof. Seyed Majid Mohsen
- 23/10/2020 ● **Webinar: Synthesis and crystal growth of two dimensional layered Graphene, Department of Physics, Shahid Beheshti University**  
**Speaker**  
**Link:** <http://spin.sbu.ac.ir/events/>
- 19/01/2020 ● **First workshop on advanced nano-material in memristor applications, Department of Physics, Shahid Beheshti University**  
**Organization committee, Speaker**  
**Talk title:** Synthesis and characterization of Graphene-MoSe<sub>2</sub> heterostructure for memristor application  
**Link:** <http://spin.sbu.ac.ir/events/>
- 01/01/2020 ● **Workshop on transferring of single layer CVD and HOPG graphene to the desired substrate, Physics Department, Sharif University of Technology**
- 20-24/06/2019 ● **Modeling and Fabrication of Nanostructures Made of 2 dimensional materials**  
**Link:** <https://istecenter.com/last-events/>

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## MANUSCRIPTS IN PROGRESS

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- **Interface induced negative differential resistance and memristive behavior in two-dimensional heterostructures**  
P. Bastani, S.M. Mohseni, L. Jamilpanah, B. Azizi, J. Shoa Gharebagh
- **Graphene healing by CH<sub>4</sub>/H<sub>2</sub> plasma treatment: lower defects and higher conductivity**  
M. Salehi, P. Bastani, L. Jamilpanah, S. M. Mohseni, B. Shokri

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## SKILLS

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- **Synthesized methods:** Physical and chemical exfoliation, CVD, Sputtering, Electrodeposition
- **Transport measurement:** I-V Characterization (Two probe and Four probe)
- **Programming language/scientific software:** Python, Matlab, Origin, LaTeX, QUANTUM ESPRESSO (DFT package), labVIEW, X'pert
- **Familiar with measurements technique:** XRD, Raman, UV-Visible, AFM, SEM, EDX

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## BACKGROUND

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- **Resistive switching:** Electrochemical metallization memory, valence change memory, thermochemical memory, Phase-change memory
- **Introductory Magnetism and Spintronics**
- **Magneto transport (GMI, AMR, GMR)**
- **Density Functional Theory**
- **Monte Carlo Simulations**

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## AWARDS AND HONORS

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- Selected as Exceptionally Talented Student at Alzahra University and Granted Straight Admission for Master's Program in Solid State Physics at Shahid Beheshti University

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## LANGUAGE

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- **Persian:** Native
- **English:** Professional Working Proficiency

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## REFERENCES

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- **Seyed Majid Mohseni**  
Associated Prof. at Department of physics, Shahid Beheshti University  
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- **Ali Sadeghi**  
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- **Shant Shahbazian**  
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