Zeynab Sadeghi

Bushehr 75169, Iran
23, Nov 1992 (Date of Birth) – Web of Science Profile
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RESEARCH INTERESTS

Surface Plasmon resonance (SPR), Optical Sensor and biosensor, Graphene, Phosphorene, 2Dmaterials, optic and photonic, spintronics, magnetic memories, QMOKE, magneto-optics.

EDUCATION

- **Ph.D. in quantum optics and Optoelectronics,** currently a student
- **MA in Atomic and molecular physics**, January 2019 – Persian Gulf University.
  Dissertation: Design and Study of the Optical Sensors Based on Surface Graphene_Plasmon.
- **BA in physics**, July 2016 – Kazerun Salman Farsi University.

WORK EXPERIENCE

Research Assistant, Charles university

Teacher Assistant, Persian Gulf University

- Modern Quantum Mechanics, J.J Sakurai
- Fundamentals of Physics Extended (10th Edition), David Halliday

Research Assistant, Persian Gulf University

- Help professors to guide four master's students

Astronomy Tutor, Kazerun Salman Farsi University

- Introductory Astronomy and Astrophysics, Michael Zeilik

The official teacher of Iran's Nanotechnology Initiative Council (INIC)

- Teaching both theoretical and experimental nanotechnology

HONORS / AWARDS

- Top Master's Degree Student of Basic Sciences in Persian Gulf university, 2018
- Top Youth of the Year 1397 AH in the field of 'Young Researcher' in Bushehr province, 2019
- 2nd ranked master's graduate student from Persian Gulf University
- 3rd ranked in the 9th Iranian Nano Startup Competition, 2019
- 35th ranked in the 9th Iranian National Nanotechnology Competition, 2019
- Winning the scholarship from Charles University in Prague, 2021

PROFESSIONAL SKILLS

Software

- Advanced skills in COMSOL Multiphysics, MATLAB and Microsoft Office programs.
- Intermediate skills in LUMERICAL and Origin softwares.
- Basic knowledge and skills in using C++.

Special

- Experienced and interested in synthesis of 2D material including: graphene, phosphorene.
- Simulating optical 2D materials, optical fibers and nanostructures in COMSOL.
- Intermediate skills and expertise in astronomy and telescopes.

Social

- Public speaking, written communication and writing reports
- Independent yet collaborative and fast learner as a team member
- Leadership, Project management and managing data and information

Sport and Art

- Runner, Swimmer, and volleyball player.

Languages

- Persian- Native language ;
- English – IELTS Overall 7

SERVICE TO THE UNIVERSITY

- Three rounds referee of Physics students competition in Persian Gulf University,2018-2019
- The head of Astronomical student Society in Kazerun Salman Farsi University, 2016-2017

MEMBERSHIPS

- Member of Iranian Physics Society
- Department of Physics, Persian Gulf University, Bushehr
- Department of Mathematics and Physics of Charles university in Prague

PUBLICATIONS LIST

Peer-reviewed journal papers

- Shirkani, H., Sadeghi, Z., Yektaparast, B., & Fadaei, N. (2022). Design and study of phosphorene nanoribbons as a perfect absorber and polarizer in mid-IR range. Physica E: Low-dimensional Systems and Nanostructures, 137, 115066.
- Sadeghi, Z., Hajiani, T., & Shirkani, H. (2022). Optical properties of anisotropic phosphorene-graphene nanotubes and their application as label-free SPR biosensors in IR. Materials Science and Engineering: B, 278, 115615.
- Sadeghi, Z., Shojaeihagh, N., & Shirkani, H. Multiple-step graphene grating optical sensors based on surface plasmons in IR range for ultra-sensing biomolecules. Materials Science and Engineering: B, 265, 114988.
- Sadeghi, Z., & Shirkani, H. (**2020**). Highly sensitive mid-infrared SPR biosensor for a wide range of biomolecules and biological cells based on graphene-gold grating. Physica E: Low-dimensional Systems and Nanostructures, 114005.
- Sadeghi, Z., & Shirkani, H. (**2019**). High-Performance Label-Free Near-Infrared SPR Sensor for Wide Range of Gases and Biomolecules Based on Graphene-Gold Grating. Plasmonics, 1-10.
- Z.sadeghi, H.shirkani, (**2019**). Desighning a Biosensor Based on Surface Plasmons Generated in Graphene Gold Grating and Study the Grating Geometry Effects on Sensitivity, Nano scale, 6(3), 41-51. Magiran.com/p2049407

Conference Presentation

- Sadeghi Z, Shirkani H. Designing a Sensor for Biomolecule in Deionization Water by Using Graphene-Gold SPs. ICOP & ICPET. **2019**; 25:561-564.
- Sadeghi, Z. and H. Shirkani, Gas Sensor Based on Localized Surface Plasmon in Graphene-Gold Steps Grating. Annual physics Conference of Iran, Imam khomeyni university of ghazvin, **2018.**
- Sadeghi, Z. and H. Shirkani, Controlling Graphene adsorption in Graphene-Gold Nano Photonic Crystal in visible range. Annual physics Conference of Iran, Imam khomeyni university of Ghazvin, **2018**.
- Yektaparast, B., Z. Sadeghi, and H. Shirkani, Surface Plasmon in Graphene-Gold Nano Photonic Crystal as Detector in Near Infrared and Visible Regimes %J Iranian Conference on Optics and Photonics and Iranian Conference on Photonics Engineering and Technology. **2018**. 24(0): p. 233-236.