ZEINELABEDIN ALY MOHAMED MOHAMED

Master student

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Education

Assiut university **Asyut, Egypt**

MASTER OF SCIENCE, PHYSICS *Oct. 2020– Expected 2024*

- **Area of specialization**: Topological Photonic Crystal.

Assiut university **Asyut, Egypt**

BACHELOR OF SCIENCE (B.Sc.), Physics and Chemistry *Sept. 2015 – June. 2019*

- **Study Area**: Physics and Chemistry department double major, 2015-2019,
- **Cumulative GPA**: GPA 3.67/4.

Teaching experience

Department of physics, Faculty of Science, Assiut University. **Asyut, Egypt**

TEACHING ASSISTANT *Dec.2020-Present*

- **Teaching undergraduate student labs such as:**
  –Mechanics Lab – Thermodynamics Lab – Electricity and Magnetism Lab
  – Nuclear & radiation Physics lab – Light and Optics Lab – Modern Physics Lab
  –Physical Electronics Lab
  This work included grading student reports and devising exams. These tasks were performed for a range of class levels, from introductory to advanced upper level.
- **Tutoring topics in physics for science and engineering undergraduates, including:**
  – Mechanics – Thermodynamics – Electricity and Magnetism – Light and Optics at the level of Serway and Jewett's textbook Physics for Scientists and Engineers with Modern Physics

Technical Skills

- **Simulation of Photonic Crystals using**: (COMSOL Multiphysics and MATLAB).
- **Preparation method using Auto lab**: (Electrochemical Deposition and Anodization).
- **X-Ray Diffraction:** (Data analysis and Explanation).
- **Scanning Electron Microscopy**: (Data analysis and Explanation).
- **Spectrophotometer:** (Absorbance, Transmission, and Reflectance).
- **Photocatalysis:** (Experiment and calculations).

Professional account:

- **LinkedIn**: https://www.linkedin.com/in/zain-elabdeen-ali-5aa795221/
- **ResearchGate**: https://www.researchgate.net/profile/Zain-Elabdeen-Mohamed

Computer skills and languages:

- Simulations Tools: (COMSOL-Multiphysics, MATALB)
- Microsoft Office: (Word, and Power point): Professional.
- Microsoft Office: (Excel, OneNote, and Publisher): very good.
- Origin and ImageJ: Very good.
- Arabic: Native.
- English: Very good.

Conference Presentation:

- The Fifth International and Conference for Young Scientists Basic and Applied Science, Assiut university, Egypt. • Presentation" high sensitivity gas sensor of one-dimension topological photonic crystal ".

Publications

- High tunability and sensitivity of 1D topological photonic crystal heterostructure. Journal of optics. Sayed Elshahat1, Zain Elabdeen A Mohamed, Mohamed Almokhtar, and Cuicui Lu DOI: https://doi.org/10.1088/2040-8986/ac45d2.
- One-dimensional topological photonic crystal of high - performance gas sensor. Journal of Nano and Microstructure. Sayed Elshahat, Zain Elabdeen A. Mohamed, Alaa M. Ab d -Elnaiem, Zhengbiao Ouyang, and Mohamed Almokhtar.
  DOI: https://doi.org/10.1016/j.micrna.2022.207447.
- Structural parameters, optical band gap, and catalytic performance of anodized molybdenum. Journal of Materials Chemistry and Physics. Alaa M. Abd-Elnaiem, Mohamed Almokhtar, Zain Elabdeen A. Mohamed.
  DOI: https://doi.org/10.1016/j.matchemphys.2023.127683.
- Recent Progress in the Fabrication of Photonic Crystals Based on Porous Anodic Materials. Energies.
  Alaa M. Abd-Elnaiem, Zain Elabdeen A. Mohamed, Sayed Elshahat, Mohamed Almokhtar, and Małgorzata Norek
  DOI: 10.3390/en16104032
- Sensing performance of Fano resonance induced by the coupling of two 1D topological photonic crystals. Optical and quantum electronics. Zain Elabdeen A. Mohamed · Sayed Elshahat · Alaa M. Abd-Elnaiem · Mohamed Almokhtar DOI: https://doi.org/10.1007/s11082-023-05092-1
- Fano Resonance Based on Coupling Between Nanoring Resonator and MIM Waveguide for Refractive Index Sensor. Plasmonic. Zain Elabdeen A. Mohamed · Sofyan A. Taya · Abdulkarem H. M. Almawgani · Ayman Taher Hindi. DOI: https://doi.org/10.1007/s11468-023-02009-2