AMNA SALAH MAHMOUD

Assistant Lecturer

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Education

MASTER OF SCIENCE, SOLID-STATE PHYSICS **[Aug. 2018 - Feb. 2021]**

Faculty of Science, Asyut University, Egypt

- **Thesis:** Characterization and measuring of some properties of high-temperature superconducting materials

DIPLOMA IN SOLID STATE, PHYSICS **[Sep. 2017- Jul. 2018]**

Faculty of Science, Asyut University, Egypt

- **Cumulative GPA**: 3.90/4

BACHELOR OF SCIENCE, PHYSICS **[Sep. 2012 - Jun. 2016]**

Faculty of Science, Asyut University, Egypt

- **Cumulative GPA:** 3.68/4
- **Rank:** first

Work Experience

TEACHING ASSISTANT **[May. 2017 – Present]**

Faculty of Science, Asyut University, Egypt

- Teaching Undergraduate student labs by grading student reports and making exams, performed these duties for classes ranging from introductory level to advanced upper level.
- Tutoring topics in physics for science and engineering undergraduates at the level of Serway and Jewett's textbook Physics for Scientists and Engineers with Modern Physics
- Teaching assistant in the Solid-State physics (353 P) course for undergraduate students.

Research Experience

INTERNATIONAL REMOTE STUDENT INTERN **[Feb. 2023 – Apr. 2023]**

The Joint Institute of Nuclear Research (JINR), Moscow, Russia

- **INTRODUCTORY COURSE:** Coexistence of superconductivity and ferromagnetism at low-dimensional heterostructures

STUDENT INTERN, QUANTUM MATERIAL SCIENCE UNIT **[May. 2022 – Sep. 2022]**

Okada Unit, Okinawa Institute of Science and Technology, Graduate University, Okinawa, Japan

- Synthesized powders by solid-state reaction method and targets by using Sparking plasma sintering technique.
- Characterized powders and thin films by using XRD, XRF, and SEM.
- Characterized thin films by AFM.
- Doing training for thin film growth by PLD and MBE.

INTERNATIONAL REMOTE STUDENT INTERN **[Sep. 2021 – Nov. 2021]**

The Joint Institute of Nuclear Research (JINR), Moscow, Russia

- **INTRODUCTORY COURSE:** MD-Simulation research (from atomic fragments to molecular compounds)

MEMBER OF THE SCIENTIFIC TEAM OF THE SCIENCE-UP INITIATIVE FROM THE ASRT

The Academy of Scientific Research and Technology (ASRT), Cairo, Egypt **[Apr. 2020 – Jan. 2021]**

- **Thesis:** syntheses of new Mn(1-x) Cd_xZnO_2 nano-composite system: preparation, structure, and some proprieties
- Doing analysis for characterization measurement using origin lab.

MASTER'S STUDENT **[Aug. 2018 – Feb. 2021]**

Faculty of Science, Asyut University, Egypt

- Synthesized BSCCO superconductors by the solid-state reaction method.
- Worked on various characterization techniques such as X-ray, DTA, FTIR, Four-prop (R-T curves), squid magnetometer, nano-indenter, and chemical experiments.
- Performed the analysis, designing the figures by using different programs (Origin Lab, Excel).
- Explained the results and their behavior of BSCCO when Ca is substituted by La with different concentrations.
- Wrote the first draft manuscripts, and my supervisor reviewed and edits them.
- Studied the doping impact on the electronic structure of Bi-based alloys using DFT calculations

UNDERGRADUATE STUDENT **[Aug. 2018 – Feb. 2021]**

Faculty of Science, Asyut University, Egypt

- Studied the Excess Conductivity and Critical Physical Parameters of Y Substituted Ca Site of Bi: 2223 High Tc Superconductors".
- Planned, organized, conducted experiments, and analyzed scientific data by using excel and origin lab.

Publications

A Comparative Study Between Structural and Properties of La Substituted (Bi, Pb):2212 and (Bi, Pb): 2223 superconductors, A.Sedky, **Amna Salah,** Journal of Electronic Materials, 2022.

Cooperative effects due to Ca substitution by La on the normal and superconducting states of (Bi,Pb):2223 system, A.Sedky, **Amna Salah**, A.A.Bahgat, and A.Abou-Aly, J. Mater. Sci. Mater. Electron. 31, 15,12502 -12513, 2020.

Excess Conductivity, Diamagnetic Transition and FTIR Spectra of Ca Substituted by La in (Bi,Pb):2212 Superconducting System, A.Sedky and **Amna Salah**, J. Low Temp. Phys. 201,3,294 - 310, 2020J. Low Temp. Phys. 201,3,294 310, 2020.

Fluctuation, Diamagnetic Transition, and FTIR Spectra of La Substituting Ca in (Bi, Pb): 2223 Superconductor, A.Sedky and **Amna Salah**, J. Supercond. Nov. Magn. 33, 12, 3705 – 3715, 2020.

Normal and Superconducting Properties of Bi1.7Pb0.30Sr2Ca1−xLaxCu2Oy Superconductor with 0.00 ≤ x ≤ 0.30, A.Sedky, **Amna Salah**, and A.Abou- Aly, J. Supercond. Nov. Magn. 33,11,3349–3359, 2020.

Excess Conductivity and Critical Physical Parameters of Y Substituted Ca Site of Bi: 2223 High Tc Superconductors, Sedky, **Amna Salah**, S. Amin, Asian Journal of Physical and Chemical Sciences, 3,2,1-15, 2018.

Skills

Computer skills

- **Numerical computation:** Mathematica-Mat Lab-Origin lab -material studio
- **Programming:** Python
- **Operating systems:** Windows- Linux
- **Word/text processing software:** Latex –Office

Languages

- **English:** very good
- **Arabic:** native

Conferences

The 7th International Conference for Young Scientists Basic and Applied Sciences, Asyut University, Egypt. **[10 – 11 May. 2022]**

Online Conference on Quantum Annealing/Adiabatic Quantum Computation, ICTP, Italy **[05-06, Oct. 2020]**

The 5th International Conference for Young Scientists Basic and Applied Sciences, Asyut University, Egypt. **[29 Oct. – 1 Nov. 2016]**

- Fluctuation-induced excess conductivity study in $Bi_{1.7}Pb_{0.3}Sr2Ca_{2-x}Y_xCu_3O_Y$ Superconductors, A.sedky and Amna Salah.

Schools & Workshops

School on Synchrotron Light Sources and their Applications, ICTP **[23 Jan - 3 Feb. 2023]**

International and Interdisciplinary Workshop of the Arab-German Young Academy of Sciences and Humanities (AGYA) Materials for Energy Scientific Research and Technology, Cairo, Egypt **[24 - 25 Oct. 2020]**

The Materials and Processes for Energy and Transport Technology, On-line workshop **[19 - 21 Oct. 2020]**

Online Workshop on Excited Charge Dynamics in Semiconductors, ICTP **[28 - 30 Sep. 2020]**

Terascale online summer school, Desy **[23 July - 12 Aug. 2020]**

Training course on the Four-prop technique to measure the R-T curve of the sample, Alexandria university, Egypt **[1-15 Feb. 2019]**

Honors & Awards

Offered OIST fully funded internship Okinawa Institute of Science and Technology, Graduate University, Okinawa, Japan **[May. 2022]**

Offered OIST fully funded internship Okinawa Institute of Science and Technology, Graduate University, Okinawa, Japan **[Dec. 2021]**

Offered Intensive English Language Diploma Scholarship, Tawakkol Karman Foundation, Turkey **[Jun. 2021]**

Granted 'SCIENCE UP INITIATIVE' research fund The Academy of Scientific Research and Technology (ASRT), Cairo, Egypt **[Feb. 2020]**

Assiut University award for scientific publishing Assiut University for four publishing papers, EGYPT, "four times" **[2021]**

Assiut University award for getting the first rank in the Physics department, Asyut University, EGYPT **[Aug. 2017]**

A Syndicate of Scientific Professions award to obtain a bachelor's degree with a very good grade with honors, Syndicate of scientific professions **[May. 2017]**

References

Prof. Dr. / Ahmed Sidqi Mohamed Abdel – Maksoud
Professor, Department of Physics, Faculty of Science, Asyut University ✉ asdky@science.aun.edu.eg

Prof. / Aly Ibrahim Abou-Aly
Emeritus Professor, Physics Department, Faculty of Science, Alexandria University ✉ aly.aboualy@alexu.edu.eg

Dr. / Yoshinori Okada
Aassistant Professor, Okada Unit, Okinawa Institute of Science and Technology, Japan ✉ yoshinori.okada@oist.jp