

# Islam Hamada Lotfy Mohamed

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## Career Summary:

" A seasoned Physics Lecturer with a comprehensive background in Solid-State and Nuclear Physics, holding advanced degrees from prestigious institutions. Renowned for a dynamic teaching approach that seamlessly integrates complex theoretical concepts with practical laboratory applications, enhancing student comprehension and engagement. Demonstrates a profound commitment to educational excellence, as evidenced by the development and delivery of a robust physics curriculum that encompasses a wide range of sub-disciplines, from quantum mechanics to computational physics. Brings a wealth of research experience, and a track record of published works in esteemed scientific journals, contributing to the advancement of the field. Recognized for outstanding performance and dedication to the academic community, as highlighted by prestigious awards and accolades. Skilled in fostering interdisciplinary collaboration and leveraging educational technology to enrich the learning experience. Committed to continuous professional development, staying abreast of the latest advancements in physics and pedagogical methods to inspire the next generation of scientists."

## Core Competencies:

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- Nuclear Physics
  - Materials Science
  - Solid State Physics
  - Experimental Physics
  - Optics and Photonics
  - Quantum Mechanics
  - Classical Mechanics
  - Electromagnetism
  - Thermodynamics
  - Statistical Mechanics
  - Computational Physics
  - Particle Physics
  - Astrophysics
  - Mathematical Modelling
  - Laboratory Equipment Proficiency
  - Data Analysis and Interpretation
  - Scientific Writing and Publishing
  - Curriculum Development
  - Lecture Planning and Delivery
  - Student Assessment and Evaluation
  - Educational Technology Integration
  - Research Proposal Writing
  - Grant Writing
  - Online Course Management Systems
  - Physics Simulation Software
  - Peer Review Process
  - Academic Advising
  - Interdisciplinary Collaboration
  - Microsoft Office Suite

## Achievements:

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- Authored and collaborated on influential research during my Ph.D., contributing to the advancement of the field and garnering recognition within the academic community.
  - Mentored and prepared numerous students for success in scientific competitions across Saudi Arabia, significantly enhancing their research skills and competitive edge.
  - Elevated to the position of Assistant Trainer within the prestigious I Discover program in Riyadh in 2014, in recognition of my exceptional teaching abilities and contributions to the program's success.
  - Played a pivotal role in enhancing the efficiency and effectiveness of the production planning department at EGYPEL Glass Company, leading to measurable improvements in operational processes and outcomes.

## Awards:

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- Distinguished with the "**Exemplary Performance Award**" for three consecutive years, a testament to exceptional proficiency, commitment, and impactful contributions within professional endeavors.

## Work Experiences:

### Physics Lecturer

Freelance | Egypt

2020 - Present

Freelance | Egypt

2015 - 2017

### Value added:

- Create comprehensive lecture notes, slides, and other teaching materials that cover the curriculum effectively.
- Conduct regular lectures that are engaging and informative, ensuring students grasp complex physics concepts.
- Oversee laboratory sessions, ensuring students safely conduct experiments and understand their practical applications.
- Design and grade exams, quizzes, and assignments to evaluate students' understanding and progress in the subject.
- Conduct original research in a specific area of physics, contributing to the body of knowledge through publications in scientific journals.
- Provide guidance to students on academic matters, career opportunities in physics, and research projects.
- Participate in the development and continuous improvement of the physics curriculum to keep it current with advancements in the field.
- Hold regular office hours to address student queries, provide extra help, and discuss academic progress.

- Serve on academic and administrative committees that contribute to the governance and improvement of the educational institution.
- Work with colleagues in the physics department and across other departments to promote interdisciplinary learning and research.
- Engage in continuous professional development to stay updated with the latest teaching methodologies and advancements in physics.
- Attend and present at academic conferences to share research findings and network with other professionals in the field.
- Encourage student participation in class and motivate them to pursue further studies and research in physics.
- Ensure all laboratory work complies with health and safety regulations to prevent accidents and injuries.
- Participate in outreach programs and recruitment events to promote the physics department and attract prospective students.

### Teaching Assistant

**Higher Technological Institute | 10th of Ramadan city | Egypt**

**2018 - 2020**

**Higher Technological Institute | Al Obour | Egypt**

**2017 - 2018**

#### Value added:

- Facilitate the preparation of lecture materials by coordinating the setup of necessary equipment and ensuring the availability of teaching aids, contributing to the seamless delivery of lectures.
- Supervise laboratory sessions with a focus on guiding students through experimental procedures, emphasizing adherence to safety protocols to foster a secure learning environment.
- Evaluate student submissions, including assignments, laboratory reports, and examinations, providing detailed and constructive feedback to facilitate student learning and improvement.
- Offer support during designated office hours, addressing student inquiries and clarifying complex theoretical concepts, thereby enhancing student comprehension and academic performance.
- Conduct tutorial and recitation sessions aimed at reinforcing lecture content, stimulating discussion, and encouraging analytical thinking among students.
- Oversee classroom management tasks, such as monitoring attendance and tracking academic progress, to maintain an organized and conducive learning atmosphere.
- Collaborate with faculty in the refinement and enhancement of curriculum materials, including syllabi, handouts, and review documents, ensuring alignment with educational standards and learning objectives.
- Participate actively in departmental meetings, contributing insights and feedback on curriculum planning, development strategies, and policy formulations, reflecting a commitment to the continuous improvement of the academic program.
- Engage in professional development initiatives, such as attending educational workshops and seminars, to stay abreast of the latest pedagogical techniques and innovations in physics education.
- Contribute to faculty-led research projects by assisting with data gathering, analysis, and literature review efforts, thereby augmenting research capabilities and contributing to the academic community.
- Provide technical assistance to both students and faculty members in the utilization of specialized scientific equipment and software, enhancing the practical application of theoretical knowledge.
- Promote an active learning environment by employing engaging teaching methodologies and fostering a culture of curiosity and inquiry, thereby motivating students to explore the depths of physics.

### Physics Teacher

**2013 - 2015**

**Al Byariq Schools | Saudi Arabia**

#### Value added:

- Plan, prepare, and deliver engaging and informative physics lessons that adhere to curriculum standards and cater to a diverse range of learning styles and needs.
- Develop and execute laboratory experiments and demonstrations that complement theoretical lessons, emphasizing the application of physics concepts in real-world contexts.
- Assess student understanding and progress through a variety of methods, such as tests, quizzes, projects, and laboratory reports, providing constructive feedback to support learning.
- Maintain a safe and orderly environment in the classroom and laboratory, ensuring compliance with all health and safety guidelines during experiments and hands-on activities.
- Stay current with developments in the field of physics and education technology, integrating new teaching tools and resources into the curriculum to enhance learning experiences.
- Offer extra help sessions and support for students who require additional assistance, fostering an inclusive learning environment where all students can succeed.
- Collaborate with colleagues within the science department and across other disciplines to develop interdisciplinary lessons that showcase

the relevance of physics in various contexts.

- Engage in continuous professional development through workshops, seminars, and conferences to refine teaching practices and expand subject matter expertise.
- Communicate effectively with parents and guardians regarding student progress, achievements, and areas for improvement, building positive relationships to support student learning.
- Participate in school events, clubs, and activities that promote science education and enrichment, contributing to a vibrant school community and encouraging students' interest in physics and science as a whole.
- Lead by example, demonstrating a passion for physics and a commitment to lifelong learning, inspiring students to pursue further studies and careers in scientific fields.
- Manage administrative tasks related to teaching, including recording grades, preparing report cards, and meeting curriculum documentation requirements, ensuring accurate tracking of student performance and progress.

## Production & Planning Engineer

2010 – 2013

Egyptel International | 10th of Ramadan city | Egypt

## Education:

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- **PhD's Degree in Solid-State Physics | Faculty of Science | Suez Canal University | 2023.**
- **Master's Degree in Nuclear Physics | Faculty of Science | Zagazig University | 2015.**
- **Pre-Master's Degree in Nuclear Physics | Faculty of Science | Zagazig University | 2013.**
- **Bachelor's Degree in Science | Math and Physics Department | Faculty of Science | Zagazig University | 2007.**

## Courses & Certificates:

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- **English Course | Cairo "EGY" | 2019.**
- **Curriculum Developments | Al Rawaby Educational Supervision | Riyadh "KSA" | Nov 2014.**
- **I Discover | Aramco company & Ministry of Education | May 2014.**
- **I Discover | Aramco company & Ministry of Education | Apr 2014.**
- **Production Planning | Ceramica Cleopatra Company | Apr 2010.**
- **Quality Control | Mac Plast Company | Apr 2010.**
- **Production Engineering | Abo-Za'bal for Chemical Industries | Apr 2010.**

## Published Researches:

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- 1 - **"Robust effects of In, Fe, and Co additions on microstructures, thermal, and mechanical properties of hypoeutectic Sn–Zn-based lead-free solder alloy"**
  - Journal of Materials Science: Materials in Electronics | 2023.
  - Authors: AM El-Taher, SA Mansour, **IH Lotfy**.
- 2 - **"The dynamic and static mechanical characteristics of Sn-7Zn-based solder alloy modified with microalloying of In, Fe and Co elements"**
  - Journal of Materials Science: Materials in Electronics | 2022.
  - Authors: **IH Lotfy**, SA Mansour, AM El-Taher.
- 3 - **"Analysis of the natural activities of radionuclides, heavy metals, and other poisonous elements in lead-free Sn–6.5 Zn solders with different alloying elements"**
  - Journal of Taibah University for Science | 2016.
  - Authors: Nassief A Mansour, Abdallah F Saad, Abd El-Rahman A El-Daly, Safwat Salama, Hassan Hashem, Hassan M Abd-Elmoniem, **Islam H Lotfy**.
- 4 - **"Robust effects of Bi doping on microstructure development and mechanical properties of hypoeutectic Sn–6.5 Zn solder alloy"**
  - Journal of Materials Science: Materials in Electronics | 2016.
  - Authors: AA El-Daly, HA Hashem, N Radwan, F El-Tantawy, TR Dalloul, NA Mansour, HM Abd-Elmoniem, **EH Lotfy**.
- 5 - **"The effect of undercooling on the microstructure and tensile properties of hypoeutectic Sn–6.5 Zn–xCu Pb-free solders"**
  - Journal of Materials & Design | 2015.
  - Authors: AA El-Daly, WM Desoky, AF Saad, NA Mansour, **EH Lotfy**, HM Abd-Elmoniem, H Hashem.

**Link of Researches:**

ORCID: <https://orcid.org/0000-0002-9257-3097>

## Military Service:

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Completed.

- **Reserve Officer | 2007- 2010.**