# Curriculum Vitae

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## Education

**2015 - 2018 Ph.D. in Physics , Experimental Physics**
Physics Department, Faculty of Science, Damietta University, New Damietta, Egypt

**2013 – 2015 M.Sc. in Physics , Experimental Physics**
Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt

**2007 – 2011 B.Sc. in Physics (very good)**
Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt

**1998 – 2002 B.Sc. in science and education.(good)**
Physics and Chemistry Department, Faculty of Education, Mansoura University, Mansoura, Egypt

## The current position

- ✓ Lecturer of Physics at the Higher Institute of Engineering and Technology at Manzala
- ✓ Supervisor of the Department of Basic Sciences at the Institute.
- ✓ Vice President of the Quality Unit at the Institute.
- ✓ A volunteer researcher at Zewail City of Science and Technology, College of Engineering.
- ✓ In addition, I was assigned to teach the physics course at Samanoud University of Technology, Department of Maintenance and Operation of Textile Machines, for the academic year 2022/2023. The assignment was also renewed for the current academic year 2023/2024.

## Teaching Statement

I am currently teaching physics at the Higher Institute of Engineering and Technology in Al-Manzala face to face and online using Microsoft teams. In addition, I am a supervisor of the Department of Basic Sciences, which specializes in the study of physics, mathematics, chemistry and mechanics. I also taught humanities courses such as the organizational behavior course, the sociology course, and the quality management course from **2019** until now. In addition, I was assigned to teach the physics course at University of Technology, Department of Maintenance and Operation of Textile Machines, for the academic year 2022/2023. The assignment was also renewed for the current academic year 2023/2024.

### Academic courses (Teaching the Following Courses)

- ✓ **Material properties**

  Mechanical properties for materials – Hook's law – Pressure – Pascal principal – Archimedes' principal - fluid properties – Bernoulli equation – viscosity

- ✓ **Waves and oscillations**

  Simple harmonic, forced and damped oscillation - Sound waves – Doppler effect- Waves in elastic media.

- ✓ **Heat and thermodynamics**

  Temperature measurements and thermometers- Heat transfer - Gas motion theory - First law of thermodynamics - entropy and second law of thermodynamics

- ✓ **Electricity and magnetism**

  Electric field-column's law- electric flux-Gauss law- electric volt- condenser and insulation materials- current , resistance and electric force - ohm's law and simple circuits- magnetic field- Babot and savart laws -magnetic flux and gauss law- Faraday law - Magnetic impedance topics.

- ✓ **light and Optics**

  Optics - Optic equipment - application of optics - Electro Light Effect-Electromagnetic Theory - Parts and Waves - Positive Theory of Light Spreading- light properties for spherical surfaces -lenses and mirrors - wave properties for light and Hygen's principle - interference - polarization- and diffraction

- ✓ **Modern Physics**

  Nuclear physics – semiconductors - Quantum physics- Relativity physics - laser - photoelectric and photovoltaic phenomenon.

## Labs and experiments of physics

| | |
|---|---|
| ✓ Young coefficient | ✓ Liquid lens |
| ✓ Hook's constant | ✓ Refractive index (n) |
| ✓ Rigidity coefficient | ✓ Ohm's law |
| ✓ Velocity of sound | ✓ Stephen's law |
| ✓ Archimedes | ✓ The metric bridge |
| ✓ Tension surface coefficient | ✓ The whetstone bridge |
| ✓ Viscosity coefficient | ✓ Planck's constant (h) |
| ✓ Specific heat | ✓ Photoelectric effect |
| ✓ Latent heat | ✓ Solar cell (photovoltaic effect) |
| ✓ Magnification of mirror | ✓ Inverse square law |
| ✓ Magnification of lens | ✓ Interference (double slit) |

## Training courses

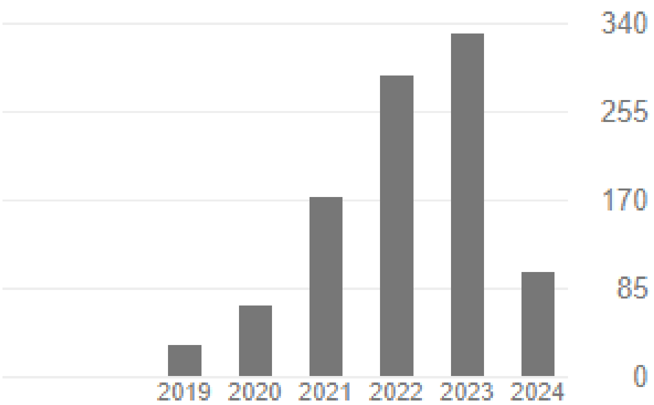
- ✓ Effective teaching and learning strategies for colleges and institutes of higher education in the National Authority for Quality Assurance and Accreditation ,2020.
- ✓ Description of programs and courses and evaluation of learning outcomes for colleges and institutes of higher education in the National Authority for Quality Assurance and Accreditation , 2020.
- ✓ Scientific Research Ethics course from the FLDC at Port Said University, Egypt,2023.
- ✓ Preparing and designing electronic tests, from the FLDC at Port Said University, Egypt,2023.
- ✓ The use of technology in teaching , from the FLDC at Port Said University, Egypt,2023.
- ✓ Digital transformation , University development center , Mansoura university , 2022.

## Research Statement ( A.S.Awed )

My research focuses on experimental condensed matter physics, with a particular emphasis on the synthesis, characterization, and manipulation of novel materials with unique electronic, magnetic, and optical properties. My goal is to use state-of-the-art experimental techniques to explore the fundamental physics of these materials and to develop new technologies based on their properties.

In addition to my experimental work, I have also collaborated with theorists to develop new models and simulations to understand the fundamental physics of the materials I study. This interdisciplinary approach has allowed me to make significant contributions to our understanding of the behavior of complex condensed matter systems and to develop new technologies based on their properties including Phy-X/PSD software , WinXCOM program , Gaussian , check cell and DFT.

| | All | Since 2019 |
|---|---|---|
| Citations | 1000 | 997 |
| h-index | 16 | 16 |
| i10-index | 25 | 25 |



## Samples

**[1]** MIA Abdel Maksoud, OI Sallam, Said M Kassem, Ramy Amer Fahim, AS Awed , Novel Strategy for Hazardous Cement Bypass Dust Removal: Structural, Optical and Nuclear Radiation Shielding Properties of CBD-Bismuth Borate Glass, Journal of Inorganic and Organometallic Polymers and Materials,2022.

[2] Sorption characteristics of bismuth tungstate nanostructure for removal of some radionuclides from aqueous solutions,MIAA Maksoud, NM Sami, HS Hassan, AS Awed,Separation and Purification Technology 277, 2021

[3] MoS2-based nanocomposites: synthesis, structure, and applications in water remediation and energy storage: a review, MIA Abdel Maksoud, Ahmed G Bedir, Mohamad Bekhit, Marwa Mohamed Abouelela, Ramy Amer Fahim, AS Awed, Sayed Y Attia, Said M Kassem, M Abd Elkodous, Gharieb S El-Sayyad, Saad G Mohamed, Ahmed I Osman, Ala'a H Al-Muhtaseb, David W Rooney, Environmental Chemistry Letters.2021

[4] Effect of gamma irradiation on the free-standing polyvinyl alcohol/chitosan/Ag nanocomposite films: insights on the structure, optical, and dispersion properties,MIA Abdel Maksoud, AS Awed, R Sokary, M Bekhit,Applied Physics A 127 (8), 2021.

[5] Revealing the effect of gamma irradiation on structural, ferromagnetic resonance, optical, and dispersion properties of PVC/Mn0. 5Zn0. 5Fe2O4 nanocomposite films, B Alshahrani, HI ElSaeedy, AH Korna, HA Yakout, AH Ashour, MIA Abdel Maksoud, Ramy Amer Fahim, AS Awed, Optical Materials,2021.

[6] Gamma radiation shielding properties of poly (vinyl butyral)/Bi2O3@ BaZrO3 nanocomposites,MIAA Maksoud, SM Kassem, M Bekhit, RA Fahim, AH Ashour, AS Awed,Materials Chemistry and Physics 268, 124728,2021.

[7] Effect of CeO2 addition on structural, optical, and radiation shielding properties of B2O3–Na2O–SrO glass system,MIA Abdel Maksoud, EM Abou Hussein, SM Kassem, RA Fahim, AS Awed,Journal of Materials Science: Materials in Electronics 32 (14), 18931-18950,2021

[8] The effect of gamma irradiation on structural, optical, and dispersion properties of PVA/Zn0. 5Co0. 4Ag0. 2Fe2O4 nanocomposite films, B Alshahrani, HI ElSaeedy, S Fares, AH Korna, HA Yakout, MIA Maksoud, Ramy Amer Fahim, AH Ashour, AS Awed, Journal of Materials Science: Materials in Electronics,2021.

[9] Unveiling the gamma irradiation effects on linear and nonlinear optical properties of CeO2–Na2O–SrO–B2O3 glass,EM Abou Hussein, MIAA Maksoud, RA Fahim, AS Awed,Optical Materials 114, 111007,2021

[10] Gamma irradiation synthesis of wearable supercapacitor based on reduced graphene oxide/cotton yarn electrode,MM Atta, MIA Abdel Maksoud, OI Sallam, AS Awed,Journal of Materials Science: Materials in Electronics 32 (3), 3688-3698,2021

[11] Advanced materials and technologies for supercapacitors used in energy conversion and storage: a review, MIA Abdel Maksoud, Ramy Amer Fahim, Ahmed Esmail Shalan, M Abd Elkodous, SO Olojede, Ahmed I Osman, Charlie Farrell, Ala'a H Al-Muhtaseb, AS Awed, AH Ashour, David W Rooney, Environmental Chemistry Letters,2021.

[12] La3+ doped LiCo0. 25Zn0. 25Fe2O4 spinel ferrite nanocrystals: Insights on structural, optical and magnetic properties, MIA Abdel Maksoud, Ahmed El-Ghandour, AH Ashour, MM Atta, Soraya Abdelhaleem, Ahmed H El-Hanbaly, Ramy Amer Fahim, Said M Kassem, MS Shalaby, AS Awed, Journal of Rare Earths,2021.

[13] Unveiling antimicrobial activity of metal iodide (CuI, AgI, and PbI2) nanoparticles: towards biomedical surfaces applications,AS Awed, GS El-Sayyad, A El-ghandour, MFO Hameed, Journal of Cluster Science 32 (1), 1-16,2021.

[14] Unveiling the effect of Zn2+ substitution in enrichment of structural, magnetic, and dielectric properties of cobalt ferrite, MIA Abdel Maksoud, Ahmed El-Ghandour, Gharieb S El-Sayyad, Ramy Amer Fahim, Ahmed H El-Hanbaly, M Bekhit, EK Abdel-Khalek, HH El-Bahnasawy, M Abd Elkodous, AH Ashour, AS Awed, Journal of Inorganic and Organometallic Polymers and Materials,2020

[15] Controllable synthesis of Co1-x MxFe2O4 nanoparticles (M= Zn, Cu, and Mn; x= 0.0 and 0.5) by cost-effective sol-gel approach: analysis of structure, elastic, thermal, MIA Maksoud, GS El-Sayyad, M Abd El-Kodous, AS Awed, JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS 31 (12), 9726-9741,2020.

[16] Incorporation of Mn2+ into cobalt ferrite via sol–gel method: insights on induced changes in the structural, thermal, dielectric, and magnetic properties,MIA Abdel Maksoud, A El-ghandour, GS El-Sayyad, AS Awed, AH Ashour, Journal of Sol-Gel Science and Technology 90 (3), 631-642,2019.

[17] Correlation between induced changes in the structural properties of nanostructured boron subphthalocyanine chloride thin films and their linear and nonlinear optical properties,A El-ghandour, AS Awed, K Abdeen, MIA el Maaty,Optics & Laser Technology 112, 126-133,2019.

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[21] 1, 2-Dihydroxyanthraquinone: synthesis, and induced changes in the structural and optical properties of the nanostructured thin films due to γ-irradiation,A El-Ghandour, AS Awed, MIAA Maksoud, MA Nasher, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 206, 466-473,2019

[22] Structural investigation, thermal analysis and AC conduction mechanism of thermally evaporated alizarin red S thin films,MM El-Nahass, HM Zeyada, NA El-Ghamaz, AS Awed, Optik 170, 304-313,2018.

[23] Optical and electrical properties of nanostructured N,N′-diphenyl-N,N′-di-p-tolylbenzene-1,4-diamine organic thin films,SSAO A El-ghandour, MFO Hameed, AS Awed,Applied Physics A 124 (8), 543,2018.

[24] O.I. Sallam, M.I.A. Abdel Maksoud, Said M. Kassem3, A.S. Awed, N.A. Elalaily, "Enhanced linear and nonlinear optical properties of erbium/ytterbium lead phosphate glass by gamma irradiation for optoelectronics applications".Applied Physics A.2022 .

[25] Gamma Radiation Induced Synthesis of Novel Chitosan/Gold/Bioactive Glass Nanocomposite for Promising Antimicrobial, and Antibiofilm Activities, Gharieb S El-Sayyad, MIA Abdel Maksoud, Ramy Amer Fahim, Mohamad Bekhit, Said M Kassem, AS Awed, Mohamed Gobara, Ahmed I El-Batal, AH Ashour, Walid F Elkhatib, Salim Mohamed Abd El-Aziz, Journal of Cluster Science ,2022.

[26] Recycled high-density polyethylene plastic reinforced with ilmenite as a sustainable radiation shielding material, MIA Abdel Maksoud, Said M Kassem, AH Ashour, AS Awed, RSC advances,2023.

[27] Optical and dielectric properties of polymer nanocomposite based on PVC matrix and Cu/Cu2O nanorods synthesized by gamma irradiation for energy storage applications, MIA Abdel Maksoud, Mohamad Bekhit, AL Waly, AS Awed, Physica E: Low-dimensional Systems and Nanostructures,2023.

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## Academic references:

- **Prof. Attia abd El-rahman Aref** , Higher Institute of Engineering and Technology at Manzala.
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