

## Personal Information

**Asst. Prof. Dr. Manal Jabbar Khalifa**

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## Academic Qualifications

**2017 – 2021**

**PhD in Physics**

College of Science, Wasit University

**Doctoral Thesis:**

“(Au, Al<sub>2</sub>O<sub>3</sub>) Quantum Dots / Porous Silicon / Silicon for Photovoltaic Applications”

**2007 – 2010**

**MSc in Physics**

College of Science, University of Baghdad

**Master’s Thesis:**

“White Light Generation from Nanocrystalline Cadmium Sulfide Illuminated by a UV Source”

**1999 – 2003**

**BSc in Physics**

College of Science, University of Baghdad

## Academic Experience

2004 – Present

Tutor / Lecturer

Department of Physics, College of Science, Wasit University

## Teaching Responsibilities:

- Digital Electronics (Theory & Practical) – 3rd year (Physics)
- Nanotechnology – 3<sup>rd</sup> year (Physics)
- General Physics – 1<sup>st</sup> year (Biology & Chemistry) departments.
- Semiconductor Practical Course – 3<sup>rd</sup> year (Physics)
- Analogue Electronics (Practical) – 2<sup>nd</sup> year (Physics)
- Electricity & Magnetism (Practical) – 1<sup>st</sup> year (Physics)
- MRI Physics – 4<sup>th</sup> year (Medical Physics)
- Diagnostic Radiation Physics – 3<sup>rd</sup> year (Medical Physics)

## Laboratory & Technical Experience:

- Design and construction of a spray deposition system Preparation of various thin films
- Supervisor of Electronic Equipment Maintenance Workshop (2016).
- Academic & Administrative Service.
- Supervision of final-year undergraduate research projects
- Service on multiple academic committees, including:
  - Chair, Scientific Seminars Committee (Physics Department)
  - Member, Scientific Competitions Committee
  - Member, Graduation Project Examination Committees
  - Member, Final Results Appeals Committee (two years)
  - Member, Examination Committee
  - Member, Final Grades Audit Committee.

## Publications:

1. “Influence of the annealing time on the structural properties for Flash evaporated InSb films” Um-Salama Science Journal, Vol.4(2)2007.
2. White light generation from CdS nanoparticles illuminated by UV-LED. Eur. Phys. J. Appl. Phys. 49, 30601 (2010).
3. Preparing the CdS / In / Si Solar Cell by Thermal Chemical Spraying Method” Wasit Journal of Science and Medicine (2011).
4. “Nanotechnology in white light generation from CdS nanocrystals”, ATTI DELLA “FONDAZIONE GIORGIO RONCHI” ANNO LXV, 2010 - N. 4.
5. Enhancing photovoltaic performance of porous silicon solar cell with Al<sub>2</sub>O<sub>3</sub> nanoparticles prepared by electrolysis method. Accepted for publishing no.65f in 4/11/2019.

6. Quantum dots gold nanoparticle /porous silicon/silicon for solar cell application. Material Today:Proceedings,SN:PR-280006-F47,Accepted for publishing.
7. Effect of increasing etching time on the efficiency of porous silicon solar cells <https://iopscience.iop.org/article/10.1088/1742-596/2432/1/012019/2023>.
8. Green Synthesis of Copper Oxide Nanoparticles Using Urtica Dioica Leaf Extract <https://iarconsortium.org/srjmd/174/2870/-4925/May-2025>.
9. Simple Route to Prepare ZnO Nanoparticles and Study Their Optical Properties <https://jwsm.uowasit.edu.iq/index.php/jwsm/article/view/541,2025>.
10. Enhancing Photovoltaic Efficiency of Porous Silicon Solar Cells with Copper Oxide Nanoparticle Anti-Reflective Coatings <https://www.iarconsortium.org/iarjet/191/2887/2023>.
11. “Synthesis and Characterization of Au Nanoparticle by electrolysis method on Porous Silicon for Photodetector” J. for Engineering and Science ISSN: 2708-7956, vol.3, No.3, Aug. 2021.
12. PLASMA PARAMETERS INDUCED BY LASER OF CADMIUM OXIDE” ,Texas Journal of Multidisciplinary Studies,2022.

## Memberships & Academic Activities

- Member, ARID International Scientific Platform (2020)
- Recipient of the Investigative Researcher Medal (2020)
- Member, American Society for Science and Nanotechnology.
- Member, The Arab Association of Material sciences and Nanotechnology.
- Member, Tatweer Global for Training and Development (2021)
- Editorial Board Member, Journal of Theory, Mathematics and Physics2025.