

PROFILE SUMMARY

an accomplished Materials Science specialist with an M.Sc in material science. focused on core/shell nanostructures and nanomagnetic materials. Recognized for exceptional academic merit as the top-ranked student in the undergraduate cohort, with proven capabilities in advanced material characterization techniques including XRD, VSM, TEM, EDX, DRS, Photodegradation, and FTIR. Skilled in Maud, Matlab, VNA, Orgin, and Image J. A published author and experienced physics educator seeking to leverage technical expertise in nanomaterials and a passion for scientific discovery within a rigorous PhD program

RESEARCH INTERESTS

- Spintronics, Nanomagnetic materials, Nanostructures and Materials Engineering, DMS, Magnetic Materials, MNPs, NMR, Biosensors, Water Purification and Treatment.

TEACHING INTERESTS

- Magnetism, Quantum mechanics, Solid states, Nanoscience, and Electromagnetism.

EDUCATION

Degree	Year	School
M.Tech	03/2023 - 5/2026	Ain Shams University Faculty of Science Department of Physics (Material Science)
Pre - Master.	2021-2022	Ain Shams University Faculty of Science Department of Physics (Material Science)
B.Tech.	2014-2018	Ain Shams University Faculty of Science Department of Physics (Material Science).

M. Tech Project: Study of the impact of lattice matching in core / shell nano structure ferrites on their magnetic properties;

Advisors: Prof. Adel Abd-Elsatter, Prof. Hesham El-Sayed, Dr. Ahmed El farmaey

RESEARCH EXPERIENCE

- Visiting researcher, Main Chemical Warfare Laboratories of the Egyptian Armed Forces Nov 2019 - Aug 2020
Mentor: Major General Gamal Abdel Hamid,
Topic: Characterization of nanomagnetic materials.
- Visiting researcher, Military Technical College of the Armed Forces, MTC, Egypt Sep 2020 - Oct, 2021
Mentor: Major General Mohamed Kamal Ismail
Topic: nanocomposite material (Core/Shell).
- Post-Graduate Research project, Ain Shams University Jun 2022- Feb 2022
Mentor: Prof. Hesham El-Sayed, Professor (PhD: Ain Shams University, Egypt)
Topic: radar absorption shield by nanocomposite materials.

TEACHING & MENTORSHIP EXPERIENCE

Teaching Assistant	
"Lab of Physics," Physics Lab, w/Prof.Waleed Ragab, Professor, Physics Ain Shams University, Egypt	Feb - May, 2026
Phy 101: Electricity and Magnetism , w/ Prof. Hesham El-Sayed, Professor, Physics Ain Shams University, Egypt	Sep- Dec, 2025
Phy 301: Fundamentals of electronics, w/ Prof. Mostafa el-Asser, Physics Ain Shams University, Egypt	Feb - May, 2024
Phy 302: solid state physics, w/ Prof. Shadya, Professor, Physics Ain Shams University, Egypt	Feb - May, 2023
Phy 101: Electricity and Magnetism , w/ Prof. Hesham El-Sayed, Professor, Physics Ain Shams University, Egypt	Feb - Sep, 2022

SCIENTIFIC PUBLICATIONS

PUBLISHED: 2+ | CITATIONS: 7+ | H-INDEX: 1 | FIRST-AUTHOR: 1

Journal Publications

1. A. M. Faramawy, A. A. Sattar, H. M. EL-Sayed, **Romany G. Nessem** ,"Detailed study of enhancing the electrical, optical, and photodegradation properties of MnZn/CdZn spinel ferrite core/shell nanostructures", **Materials Science**, Vol. 61, pp. 21070–21092, 2026. 
2. **Romany G. Nessem**, A. A. Sattar, H. M. EL-Sayed, A. M. Faramawy, "Controlling Elastic, Magnetic and Optical Properties of Mn_{0.7}Zn_{0.3}Fe₂O₄/Cd_xZn_{1-x}Fe₂O₄; x=(0–0.5) Core/Shell Nanostructures Via Lattice Matching," **Materials Chemistry and Physics**, vol. 346, pp. 131323, 2025. 

Research Presentations

1. **Romany G. Nessem**, A. A. Sattar, H. M. EL-Sayed, A. M. Faramawy, "Detailed study of enhancing the electrical, optical, and photodegradation properties of MnZn/CdZn spinel ferrite core/shell nanostructures" in 2026 **IEEE Magnetism Society Summer School**, Cairo, Egypt, 2026. (Poster)

TECHNICAL SKILLS

Languages	:	Arabic (Native), English (C1)
Programming Languages	:	MATLAB
Analysis programs	:	Origin, VNA, Maud, ImageJ, and Xpert high score
CharacterizationTechniques	:	SEM, TEM, XRD, FTIR, VSM, DRS, UV-Vis, PL, and Photodegradation
Synthesis Methods	:	Sol-Gel, Chemical Vapor Deposition (CVD), Hydrothermal, and Coprecipitation
Other Tools	:	LaTeX
Lab Skills	:	Sample Preparation, Calibration, Lab Safety Protocols, Chemical Handling.

SELECTED WORKSHOPS

- "the 18th Workshop In Material Science And Engineering, 4th Dec 2024.
- "Crystallography workshop at the National Research Center, March 2-3, 2023.
- "Ain Shams's 11th International Conference Attendance Certificate, 10th 11th May 2023. 
- "Nanoscience and technology workshop at the BUE," March 14, 2018.

REFEREES

- [1] **Prof. Hesham El Sayed** (*PhD: University of Ain Shams at Cairo, Egypt*), Profile Link: 
Professor, Material science and nanotechnology, ASU

Relation: Master's Supervisor
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- [2] **Prof. Adel Abd elSattar** (*PhD: University of Ain Shams at Cairo, Egypt*), , Profile Link: 
Professor, Material science and nanotechnology, ASU

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 adel_sattar@sci.asu.edu.eg
- [3] **Dr. Ahmed Mohamed Faramawy** (*PhD: UNIPD at University of Padua, Italy*), Profile Link:,
Formerly: Associate Professor, Padua, Italy

Master's Supervisor
 ahmed_faramawy@sci.asu.edu.eg
- [3] **Dr. Mohamed Adel Nouh** (*Postdoc Wissenschaftler Mitarbeiter | Ultrafast Spectroscopy, 20*), Profile Link: ,
Instructional Professor, RD Systemingenieur | Spektroskopie Optische Messtechnik (VIS/NIR)

 Mohammed.nouh@uni-muenster.de

Last updated: June 2026