Curriculum Vitae

Personal Information

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Work Experience

2024-current: Associate professor of Biophysics, Department of physics, Faculty of Science, Ain Shams University, Cairo, Egypt.

2023-2024: Postdoc at central laboratory of stem cells and biomaterials applied research, Faculty of Dentistry, Ain Shams University, Cairo, Egypt.

2021-current: Program accreditation member at physics department, faculty of science, Ain Shams University, Cairo, Egypt.

2019-2019: Postdoc at Laboratory of Radiobiology & Experimental Radiation Oncology at the University Medical Center Hamburg-Eppendorf (UKE) and Institute for Nanostructure and Solid State Physics.

2016-2019: Assistant professor of Biophysics, Department of physics, Faculty of Science, Ain Shams University, Cairo, Egypt.

2012-2014: Visiting PhD student, University of Liverpool, Liverpool, United Kingdom.

2007-2012: lecturer of biophysics, Department of Physics, Faculty of Science, Ain Shams University, Cairo, Egypt.

2001-2007: Demonstrator of Biophysics, Faculty of Science, Ain Shams University, Cairo, Egypt.

Education

2016: PhD degree of Biophysics, Faculty of Science, Ain Shams University, Cairo, Egypt. Joint PhD degree with university of Liverpool.

Thesis Title "**Laser-Irradiation of Gold Nanorods inside Living Cells: Photochemical versus Photothermal Effects**"

2012-2014: PhD visiting student, University of Liverpool, Liverpool, United Kingdom.

2003-2007: MSc degree of Biophysics, Faculty of Science, Ain Shams University, Cairo, Egypt.

Thesis Title "**Study of Vitrous Humor in Reghamatogenous Retinal Detachment Cases**"

2002-2003: Pre-Master Studies, Faculty of Science, Ain Shams University, Cairo, Egypt.

1997-2001: BSc of Biophysics, Faculty of Science, Ain Shams University, Cairo, Egypt.

Publications

1- Chadwick SJ, **Salah D**, Livesey PM, Brust M, Volk M. Singlet oxygen generation by laser irradiation of gold nanoparticles. The Journal of Physical Chemistry C. 2016 May 19;120(19):10647-57.

2- Batoo KM, **Salah D**, Kumar G, Kumar A, Singh M, Abd El-Sadek M, Mir FA, Imran A, Jameel DA. Hyperfine interaction and tuning of magnetic

anisotropy of Cu doped CoFe2O4 ferrite nanoparticles. Journal of Magnetism and Magnetic Materials. 2016 Aug 1;411:91-7.

3- Akl HN, Alazaly AM, **Salah D**, Abdel-Samad HS, Abdel-Shafi AA. Effects on the photophysical properties of naphthylamine derivatives upon their inclusion in cyclodextrin nanocavities. Journal of Molecular Liquids. 2020 Aug 1;311:113319.

4- Ahmed AA, Abdulwahab AM, Talib ZA, **Salah D**, Flaifel MH. Magnetic and optical properties of synthesized ZnO–ZnFe2O4 nanocomposites via calcined Zn–Fe layered double hydroxide. Optical Materials. 2020 Oct 1;108:110179.

5- Sabek HA, Alazaly AM, **Salah D**, Abdel-Samad HS, Ismail MA, Abdel-Shafi AA. Photophysical properties and fluorosolvatochromism of D–π–A thiophene based derivatives. RSC Advances. 2020;10(71):43459-71.

6- Medhat A, **Salah D**, Boichuk N, Hassan I, Vitusevich S, Kasry A. Graphene Nanoplatelet–Au Nanoparticle Hybrid as a Capacitive-Metal–Oxide–Semiconductor pH Sensor. ACS Applied Electronic Materials. 2020 Dec 28;3(1):430-6.

7- Schmutzler O, Graf S, Behm N, Mansour WY, Blumendorf F, Staufer T, Körnig C, **Salah D**, Kang Y, Peters JN, Liu Y. X-ray Fluorescence Uptake Measurement of Functionalized Gold Nanoparticles in Tumor Cell Microsamples. International Journal of Molecular Sciences. 2021 Jan;22(7):3691.

8- **Salah D**, Moghanm FS, Arshad M, Alanazi AA, Latif S, El-Gammal MI, Shimaa EM, Elsayed S. Polymer-Peptide Modified Gold Nanorods to

Improve Cell Conjugation and Cell Labelling for Stem Cells Photoacoustic Imaging. Diagnostics. 2021 Jul;11(7):1196.

9- Samir M, **Salah D**, Donia S, Kasry A. Effect of Surface Chemical Modification on the Self Assembly of Metal Nanoparticles. Egyptian Journal of Chemistry. 2021 Jul 26.

10- Abdulaziz F, **Salah D**. Gold nanoparticles incorporated with Cyclodextrins and its applications. Journal of Biomaterials and Nanobiotechnology. 2021 Aug 17;12(4):79-97.

11- Belić D, Fragueiro O, **Salah D**, Beckett A, Volk M, Brust M. Imaging of Nanoscale Gold in "Intact" Biological Cells by Environmental Electron Microscopy. The Journal of Physical Chemistry C. 2021 Dec 9;125(50):27865-75.

12- Samir M, **Salah D**, Donia S, Kasry A. Specific Chemical Modification of Nanohole Edges in Membrane Graphene for Protein Binding. ACS Applied Nano Materials. 2022 Feb 23.

13- Desouky, M., Medhat, A., Samir, M., **Salah D.**, & Kasry, A. (2022). Structure and Properties Manipulations of Graphene: Towards Developing High Sensitivity Optical and Electrical Sensors. In *Advances in Nanocomposite Materials for Environmental and Energy Harvesting Applications* (pp. 941-957). Springer, Cham.

14- Hagras Y, Alazaly A, **Salah D**, Abdel-Samad HS, Abdel-Shafi A. Solvent Effect on the Excited Charge Transfer State of Naphthylamine

Sulfonate Derivatives: Steady State and Time resolved studies. Egyptian Journal of Chemistry. 2022 Sep 1;65(9):457-65.

15- Essa EE, Hamza D, Khalil MM, Zaher H, **Salah D**, Alnemari AM, Rady MH, Momen SA. The Antibacterial Activity of Egyptian Wasp Chitosan-Based Nanoparticles against Important Antibiotic-Resistant Pathogens. Molecules. 2022 Oct 24;27(21):7189.

16- Höeg F, Schulz J, Graf S, **Salah D**, Chandralingam S, Maison W, Parak WJ, Schulz F. Defined Coadsorption of Prostate Cancer Targeting Ligands and PEG on Gold Nanoparticles for Significantly Reduced Protein Adsorption in Cell Media. The Journal of Physical Chemistry C. 2022 Nov 23;126(48):20594-604.

17- Aly SH, Elissawy AM, **Salah D**, Alfuhaid NA, Zyaan OH, Mohamed HI, Singab AN, Farag SM. Phytochemical Investigation of Three Cystoseira Species and Their Larvicidal Activity Supported with In Silico Studies. Marine Drugs. 2023 Feb 10;21(2):117.

18- Akl HN, **Salah D**, Abdel-Samad HS, Aziz AA, Abdel-Shafi AA. Fractional dependence of the free energy of activation on the driving force of charge transfer in the quenching of the excited states of substituted phenanthroline homoleptic ruthenium (ii) complexes in aqueous medium. RSC advances. 2023;13(19):13314-23.

19- Alnemari AM, Moustapha ME, Hassan AA, **Salah D**. Chitosan nano-composites applications for water remediation. Cogent Engineering. 2023 Dec 31;10(1):2220498.

20- Essam S, **Salah D**, Hassan MA, Ibrahim IH. Modified coprecipitated Copper Ferrite Nanoparticles as a Dual-Agent for Pb2+ and Cd2+ Ions

Removal and Antibacterial Treatment in Wastewater. Egyptian Journal of Pure and Applied Science. 2024 Jan 14;62(1):43-64.

21- Alotibi S, Qahtan TF, Alansi AM, Owolabi TO, Hameed ST, Afzal N, Bilal S, **Salah D**. Sustainable and Cost-Efficient Production of Micro-Patterned Reduced Graphene Oxide on Graphene Oxide Films. Coatings. 2024 Apr 25;14(5):534.

22- Hassanein S, Hassan I, **Salah D**, Sayed M, Naga SM. Synthesis of Nano-Hydroxyapatite Powder from Trough Clam Shells (Mactridae) by Wet Precipitation Method for Biomedical Applications. Egyptian Journal of Chemistry. 2024 Jun 1;67(6):105-15.

23- Mo'men SA, Qahtan TF, Alansi AM, Alanazi AA, Alfuhaid NA, **Salah D**, Yousery A. Photocatalytic activity of TiO2-Carbon nanocomposite films against Culex pipiens mosquito larvae under sunlight irradiation. Materials Today Sustainability. 2024 Dec 1;28:100945.

24- Badaway IM, **Salah D**, Ismail MA, Abdel-Samad HS, Abdel-Shafi AA. The impact of encapsulation in cyclodextrin nanocavities on the participation of hydrogen bond assisted intramolecular charge transfer in fluorescence emission. Journal of Molecular Liquids. 2025 Jan 1;417:126575.

25- Alnemari AM, Hassan A, **Salah D**. Simple Detection of Di-Butyl Phthalate in Aqueous Samples Using UV–Visible Spectroscopy Based on Functionalized Gold Nanoparticles. Journal of Nanotechnology. 2025;2025(1):2223931.

26- Nabil I, **Salah D**, ElBaghdady K, Abdel-Samad HS, Abdel-Shafi AA. Efficient Visible-Light Photocatalytic Bacterial Inactivation in Water

Using Ruthenium Bipyridine Complexes-Doped Silica Gel. Egyptian Journal of Chemistry. 2025 Aug 5.

Conferences

- International symposium on "Nanoparticles-Based Technology for Cell Tracking" 2013, Liverpool. United Kingdom.
- Gold 2015 International Conference, Cardiff, United Kingdom.
- The Third International Conference on "Nanotechnology and its Applications" February 2016, Hurghada, Egypt.
- Third Arab Conference on Biophysics, September 2016, Cairo, Egypt.

Projects

- Development of the Atomic spectroscopy unit in the Central Laboratory for microanalysis and qualifying it for accreditation in accordance with the specifications of (ISO 17025/2005). (Completed)
- "A cost-effective, stable and efficient luminescent solar concentrator in Egypt: Decoration and Generation" (STDF-DDP). (Completed)
- Development of "Laboratory of Ultrafast Dynamic Spectroscopy to Qualify for (ISO/IEC 17025/2017) Accreditation". (Completed)
- "Use of Melittin-Loaded Nanoparticles as Anticancer and Antibacterial Agent" Ministry of Higher Education and Ain Shams University. (Running)

Teaching experiences

- Teaching undergraduate and postgraduate courses for faculty of science, pharmacy, physical therapy, and Dentistry)
- Nanotechnology, bio membrane techniques, introduction of biophysics, using X-ray techniques to determine biological molecules structures, bioelectronics, biomaterials, radiotherapy planning, ultrasound applications, characterization and imaging techniques, thermodynamics, photodynamic therapy, wastewater remediation, biosensors.

Quality and Accreditation

- (ISO/IEC 17025/2017) Accreditation technical and management manager for Scientific laboratories.
- Qualified and professional program accreditation team leader (academics standards, curriculum and learning outcomes, documentation and evidence system, ethical and professional standards, and student support services)

Skills

- Very good communication skills
- Gold nanoparticle synthesis and its applications.
- Trained to use TEM and ESEM.
- Trained in different Spectroscopic techniques.
- Trained cell cultures researcher.

- Traied laser irradiation researcher.
- Tracking of reactive species.

References

- Professor Mathias Brust university of Liverpool, United Kingdom

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- Professor Wolfgang Parak University of Humburg, Hamburg

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- Professor Raphaël Lévy, Paris university, France

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