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➤ PERSONAL INFORMATION:

Date/Place of Birth: 7/1/1984.

Gender: Male

Marital Status: Married

Nationality: Egyptian

Occupation: Associate Professor at NRC (National Research Center)

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➤ EDUCATION:

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| • Ph. D. in solid state physics , Ain Shams University, Faculty of girls for Arts, Science, and Education, Egypt | 2013-2016 |
| • M.Sc in Experimental physics, Mansoura University, Faculty of Science, Egypt | 2007-2010 |
| • Postgraduate in experimental physics, Mansoura University, Faculty of Science, Egypt | 2006-2007 |
| • B.Sc in physics, Mansoura University, Faculty of Science, Egypt (Very Good). | 2005 |

➤ WORK EXPERIENCE:

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|--|------------------------|
| • Head of Electron Microscope and Thin Films Department, Physics Research Institute, NRC, Cairo, Egypt | 26-8-2023- up till now |
| • Associate Professor in Electron Microscope and Thin Films Department, Physics Research Institute, NRC, Cairo, Egypt | 2022- up till now |
| • Researcher in Electron Microscope and Thin Films Department, Physics Research Institute, NRC, Cairo, Egypt | 2017-2022 |
| • Assistant Researcher in Electron Microscope and Thin Films Department, Physics Research Institute, NRC, Cairo, Egypt | 2012-2017 |
| • Researcher Assistant in Electron Microscope and Thin Films Department, Physics Research Institute, NRC, Cairo, Egypt | 2011-2012 |
| • Student grant in Electron Microscope and Thin Films Department, Physics Research | 2006-2011 |

➤ **TRAINING & WORKSHOPS:**

- A training course in electron microscopy (techniques & interpretations), Assiut University, Electron Microscope Unit, Assiut, Egypt. 21/3/2009 to 26/3/2009
- Work Shop on Crystallography in Faculty of Science- Minia University. 22/3/2014 to 24/3/2014
- One- day Seminar on Molecular Modeling: Theory and Application (In National Research Center- Giza- Egypt). 27/6/2017
- Training on using Radioactive Sources & Radioactive Materials and Protection from them. (Atomic Energy Authority)-Egypt. 5/3/2018 to 4/4/2018

➤ **Teaching Experience:**

physics (1) Electricity and magnetism

Physics (2) Thermodynamics

Arab Academy for Science Technology & Maritime Transport (AASTMT)

2008 up till now

➤ **Conferences:**

- 2nd international conference for Egyptian Materials Research Society (5-9/1/2016)
- Attended 8th hope meeting for JSPJ with Noble Laureates in Tsukuba-Japan (7-13/3/2016)
- 13th IbnSina international conference of chemistry in Al- gharadaquh Egypt (23-27/3/2018)
- First International Conference on Molecular Modeling and Spectroscopy in National Research Centre, Egypt 19-22/2/2019

➤ **Experience in the Field of Electron Microscope:**

Experience on Field Emission Scanning Electron Microscope (FE-SEM QUANTA FEG250 & QUARTO S) Thermo-fisher and HR- TEM JEOL 2100 for 15 years up till now.

➤ **Prizes:**

State Incentive Award in the field of Basic Sciences awarded by the Academy of Scientific Research and Technology (2022). 2022

➤ Book Chapters:

Chapter 31 - Functionalized nanofibers as fire-retardant fabrics, Functionalized Nanofibers
Synthesis and Industrial Applications
2023, Pages 893-921

Mehrez E. El-Naggar , **Ahmed R. Wassel** , Mohamed S. Hasanin,
Chapter 4 - Hydroxyapatite-based hydrogel nanocomposites for bone tissue engineering applications

Functional Nanocomposite Hydrogels
Synthesis, Characterization, and Biomedical Applications
Nanotechnology in Biomedicine
2023, Pages 91-124

Rasha A. Youness , **Ahmed R. Wassel** , Amany A. El-Kheshen , Kamal N. Abdel Nour , Mohammed A. Taha

➤ List of Publication:

- 1 Colorimetric measurement of viscosity of a UV degraded polymer solution” **Ahmed.R.Wassel**, Maher ElTonsy, S.Y.Marzouk. Egyptian Journal of Applied Sciences (2011)
- 2 Phase transition characteristics of (Ge₄Sb₄Te₆) thin films using high resolution transmission electron microscope and optical properties". **Ahmed.R.Wassel**, Z.El-Mandouh, Ahmed.Hosny, H.A.Zaid.Journal of international organization of scientific research (2016)
- 3 Compatibility and Bone Bonding Efficiency of Gamma Irradiated Hench’s Bioglass.A. M. Abdelghany , H. A. ElBatal , AlyOkasha ,R. M. Ramadan , **A. R. Wassel**, A. A. Menazea.Silicon (2017)
- 4 Spectroscopic and Antimicrobial Activity of Hybrid Chitosan/Silica Membranes doped with Al₂O₃ Nanoparticles. Amany M. El Nahrawy, Ali B. Abou Hammad, Mohamed S. Abdel-Aziz, **Ahmed. R. Wassel**. Silicon (2018)
- 5 Effect of Cu incorporation on morphology and optical band gap Properties of nanoporous lithium magnesio-silicate (LMS) thin films. Amany M. El Nahrawy, A.M.Mansour Ali B. Abou Hammad, **Ahmed. R. Wassel**. Material Research Express(2019)
- 6 Adjustment of morphological and dielectric properties of ZnTiO₃ nanocrystalline using Al₂O₃nanoparticles. Amany M. El Nahrawy, Ali B. Abou Hammad, Ahmed M.

- Bakr, **Ahmed. R. Wassel**. Journal of Applied Physics A (2019)
- 7 Synthesis, characterization and antimicrobial activity of Schiff bases from chitosan and Salicylaldehyde/TiO₂ nanocomposite membrane. A.S. Montaser, **Ahmed. R. Wassel**, Oqba N. Al-Shaye'a. International Journal of Biological Macromolecules (2019)
- 8 A novel nano-size lanthanum metal–organic framework based on 5-amino-isophthalic acid and phenylenediamine: Photoluminescence study and sensing applications. Sheta M. Sheta, Said M. El-Sheikh, Mohkles M. Abd-Elzaher, **Ahmed R. Wassel**. Applied Organometallic Chemistry (2019)
- 9 Investigating the effect of thickness on the structural, morphological, optical and electrical properties of AgBiSe₂ thin films. Talaat A. Hameed, **Ahmed. R. Wassel**, I.M. El Radaf. Journal of Alloys and Compounds (2019)
- 10 Decontamination of ubiquitous harmful microbial lineages in water using an innovative Zn₂Ti_{0.8}Fe_{0.2}O₄ nanostructure: dielectric and terahertz properties, Amany Mohamed El Nahrawy, Ali Belal Abou Hammad, Ahmed Mohamed Bakr, Bahaa Ahmed Hemdan, **Ahmed R. Wassel**. Heliyon (2019)
- 11 Enhancement the structural, optical and nonlinear optical properties of cadmium phosphate glasses by nickel ions; Waheed Sami AbuShanab , Essam B. Moustafa, Ahmed H. Hammad, R. M. Ramadan, **Ahmed R. Wassel**. Journal of Materials Science: Materials in Electronics (2019)
- 12 Novel hyper branched polyaniline nanocomposites for gamma radiation dosimetry; Noha Elhalawany, **Ahmed R. Wassel**, Ahmed E. Abdelhamid1, Azza Abou Elfadl, Samir Nouh. Journal of Materials Science: Materials in Electronics (2020)
- 13 Synthesis and characterization of the chemically deposited SnS_{1-x}Se_x thin films: structural, linear and nonlinear optical properties; **Ahmed R. Wassel**, I. M. El Radaf. Applied Physics A (2020)
- 14 Structural, optical and photoelectrical characteristics of 4-methoxy-2-nitroaniline for optoelectronic applications; Ahmed M. El-Mahalawy, **Ahmed R. Wassel**; Materials Science in Semiconductor Processing 116 (2020)
- 15 Processing of electric ceramic insulators from slate rocks and MgO; S. M. Naga, M. Sayed, M. M. El-Omla, **Ahmed R. Wassel** & N. El-Mehalawy, MATERIALS AND MANUFACTURING PROCESSES (2020)

- 16 Polyaniline/zinc/aluminum nanocomposites for multifunctional smart cotton fabrics, Noha Elhalawany, Mehrez E. El-Naggar, Ahmed Elsayed, [Ahmed R. Wassel](#), Ahmed T. El-Aref, Mahmoud A. Abd Elghaffar; *Materials Chemistry and Physics* 249 (2020)
- 17 Encapsulation of extremely stable polyaniline onto Bio-MOF: Photoactivated antimicrobial and depletion of ciprofloxacin from aqueous solutions, Kamel Shoueir, [Ahmed R. Wassel](#), M.K. Ahmed, Mehrez E. El-Naggar, *Journal of Photochemistry & Photobiology A: Chemistry* 400 (2020)
- 18 Enhancement of organic/inorganic hybrid photodetector based on pentacene/n-Si by surface plasmonic effect of gold and silver nanoparticles: A comparative study, Ahmed M. El-Mahalawy, [Ahmed R. Wassel](#); *Optics and Laser Technology* 131 (2020)
- 19 Recent advances in polymer/metal/metal oxide hybrid nanostructures for catalytic applications: A review, [Ahmed R. Wassel](#), Mehrez E. El-Naggar, Kamel Shoueir; *Journal of Environmental Chemical Engineering* 8 (2020)
- 20 Bone bonding augmentation and synergetic attitude of gamma-irradiated modified borate bioglass, Aly Okasha, A.M. Abdelghany, [Ahmed R. Wassel](#), A.A. Menazea; *Radiation Physics and Chemistry* 176 (2020)
- 21 Optimization of green biosynthesized visible light active CuO/ZnO nano-photocatalysts for the degradation of organic methylene blue dye, Amr Fouda, Salem S. Salem, [Ahmed R. Wassel](#), Mohammed F. Hamza, Th.I. Shaheen; *Heliyon* 6 (2020)
- 22 Characterization of CuZnO Nanocomposite Thin Films Prepared from CuO–ZnO Sputtered Films, M. Sh. Abdel-wahab, [Ahmed R. Wassel](#) & Ahmed H. Hammad, *Journal of ELECTRONIC MATERIALS* (2020).
- 23 Structural, spectroscopic and electrical investigations of novel organic thin films bearing push-pull azo – Phenol dye for UV photodetection applications, Ahmed M. El-Mahalawy, Moaz M. Abdou, [Ahmed R. Wassel](#); *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 248 (2021)
- 24 Visible-light driven photocatalytic effectiveness for solid-state synthesis of ZnO/natural clay/TiO₂ nanoarchitectures towards complete decolorization of methylene blue from aqueous solution, Mehrez E. El-Naggar, [Ahmed R. Wassel](#), Kamel Shoueir; *Environmental Nanotechnology, Monitoring & Management* 15 (2021)

- 25 Structural and optical characterizations of the thermally evaporated $Pb_xGa_{1-x}Se$ thin films, I.M. El Radaf, [Ahmed R. Wassel](#); *Optik - International Journal for Light and Electron Optics* 238 (2021)
- 26 Influence of Al, Fe, and Cu on the microstructure, diffused reflectance, THz, and dielectric properties for $ZnTiO_3$ nanocrystalline, Ahmed M. Bakr, Ali B. Abou Hammad, [Ahmed R. Wassel](#), Amany M. El Nahrawy, A.M. Mansour; *Int. J. Materials Engineering Innovation*, 12(2) (2021).
- 27 Enhancement of structure and optical dispersion properties of N,N'-Bis (3-methylphenyl)-N,N'-diphenylbenzidine thin films: Impact of UV irradiation, H. Abdel-Khalek, Fatma M. Amin, [Ahmed R. Wassel](#), Ahmed M. El-Mahalawy; *Optical Materials* 113 (2021)
- 28 Immobilization of horseradish peroxidase on cationic microporous starch: Physico-bio-chemical characterization and removal of phenolic compounds, Mehrez E. El-Naggar, Azza M. Abdel-Aty, [Ahmed R. Wassel](#), Nesma M. Elaraby, Saleh A. Mohamed; *International Journal of Biological Macromolecules* 181 (2021)
- 29 Impact of copper oxide on the structural, optical, and dielectric properties of sodium borophosphate glass, Rawya M. Ramadan, Ahmed H. Hammad, [Ahmed R. Wassel](#); *Journal of Non-Crystalline Solids* 568 (2021)
- 30 Silver chromate doped Ti-based metal organic framework: synthesis, characterization, and electrochemical and selective photocatalytic reduction properties, Reda M. Abdelhameed, Sherief A. Al Kiey, [Ahmed R. Wassel](#) and Mahmoud El-Shahat; *RSC New Journal Chemistry* (2021)
- 31 Production of photochromic nanocomposite film via spray coating of rare-earth strontium aluminate for anti-counterfeit applications, Omnia M. Mokhtar, Yasser A. Attia, [Ahmed R. Wassel](#), Tawfik A. Khattab; *Luminescence*. (2021)
- 32 Multifunctional 3D cationic starch/nanofibrillated cellulose/silver nanoparticles nanocomposite cryogel: Synthesis, adsorption, and antibacterial characteristics, Emad K. Radwan, Mehrez E. El-Naggar, Ahmed Abdel-Karim, [Ahmed R. Wassel](#); *International Journal of Biological Macromolecules* 189 (2021)
- 33 Antimicrobial and Antiviral Activities of Durable Cotton Fabrics Treated with Nanocomposite Based on Zinc Oxide Nanoparticles, Acyclovir, Nanochitosan, and Clove Oil, Amr M. Shehabeldine & Amr H. Hashem, [Ahmed R. Wassel](#), Mohamed Hasanin; *Applied Biochemistry and Biotechnology* (2021)

- 34 Emphasis of some physical and dynamical properties of inverted barium phosphate base glass; Ahmed H Hammad, Essam B Moustafa, [Ahmed R. Wassel](#), Journal of Materials Research and Technology (2021)
- 35 Experimental and theoretical investigations on fouling resistant cellulose acetate/SiO₂ NPs/PEDOT ultrafiltration nanocomposite membranes; Mehrez E. El-Naggar, Ahmed Abdel-Karim, Emad K. Radwan, Waleed Sharmoukh, [Ahmed R. Wassel](#), Ahmed M. Bayoumy, Medhat Ibrahim; Journal of Cleaner Production (2021)
- 36 Physical and optoelectronic characteristics of novel low-cost synthesized coumarin dye-based metal-free thin films for light sensing applications, Ahmed M. El-Mahalawy, Moaz M. Abdou, [Ahmed R. Wassel](#); Materials Science in Semiconductor Processing 137 (2022)
- 37 Optical dispersion and photovoltaic performance of safranin thin films solar cells in hybrid organic-inorganic isotype heterojunction configuration, Reim A. Almotiri, Manal M. Alkhamisi, [Ahmed R. Wassel](#), Ahmed M. El-Mahalawy; Materials Research Bulletin 151 (2022)
- 38 On the Optoelectronic Performance of Solution-Processable N-(4-Methoxy-2-Nitrophenyl) Acetamide Microrods Thin Films for Efficient Light Detection Applications, Ahmed M.El-Mahalawy, Reim A.Almotiri, Manal M.Alkhamisi, [Ahmed R.Wassel](#); Surfaces and Interfaces (2022)
- 39 Multi-Functional Platform Based on Amorphous Ge₂Sb₂Te₅ Thin Films for Photo/Thermodetection and Non-volatile Memory Applications, Reim A. Almotiri, Ahmed M. El-Mahalawy, [Ahmed R. Wassel](#), S.Y. Marzouk and Manal M. Alkhamisi, Materials Science in Semiconductor Processing (2022)
- 40 Photoluminescent and photochromic smart window from recycled polyester reinforced with cellulose nanocrystals; Naser G. Al-Balakocy, Meram S. Abdelrahman , Hend Ahmed , Abdelrahman A. Badawy, Ahmed F. Ghanem , [Ahmed R. Wassel](#), Zhen Wen, Tawfik A. Khattab, Luminescence (2022)
- 41 Overcoming the poor performance of n-CdS/p-SnS solar cells by plasmonic effect of gold and silver nanoparticles; Ahmed M. El-Mahalawy, Fatma M. Amin, [Ahmed R. Wassel](#), Mohamed Abd-El Salam, Journal of Alloys and Compounds (2022)
- 42 Integration of biocompatible Coomassie Brilliant Blue dye on silicon in organic/Inorganic heterojunction for photodetection applications, Marwa S. Salem,

- Ahmed R. Wassel**, M. Fedawy, A. Shaker, Amal H. Al-Bagawia, Ghada Mohamed Aleid, Ahmed M. El-Mahalawy, *Journal of Physics and Chemistry of Solids* (2022)
- 43 **Impact of structural and optical properties tunability of SnSe₂ thin films on its optoelectronic properties; Ahmed M. El-Mahalawy, S.A. Mansour, **Ahmed R. Wassel**, Asmaa E. Mohamed, Shehab E. Ali, *Surfaces and Interfaces* (2022)**
- 44 **Investigate the structure, mechanical, and optical properties of a novel cadmium phosphate glass containing vanadium oxide; Ahmed H. Hammad, Essam B. Moustafa, Mohamed Sh. Abdel-wahab, Waheed Sami AbuShanab, **Ahmed R. Wassel**, *Optik - International Journal for Light and Electron Optics* (2022)**
- 45 **Plasmonic enhanced ultraviolet photodetection performance of n-TiO₂/p-Si anisotype heterojunction with aluminum patterned array; Ahmed M. El-Mahalawy, Mahmoud M. Abdrabou, **Ahmed R. Wassel**, Mohamed Abd El-Salam, Fatma M. Amin, *Journal of Physics and Chemistry of Solids* (2022)**
- 46 **Elucidation the Effectiveness of Acridine Orange as Light-Harvesting Layer for Photosensing Applications: Structural, Spectroscopic and Electrical Investigations; Marwa S. Salem, **Ahmed R. Wassel**, M. Fedawy, A. Shaker, Amal H. Al-Bagawia, Adwan Alanazi, and Ahmed M. El-Mahalawy, *Optical Materials* (2022)**
- 47 **Evaluation of the influence of thermal annealing on the performance of vertical topological insulator p-n heterojunction broadband photodetector; Mohamed Abd-El Salam, H. Abdel-Khalek, Fatma M. Amin, **Ahmed R. Wassel**, Ahmed M. El-Mahalawy, *Optics and Laser Technology* (2022)**
- 48 **Recycling of aluminum dross and silica fume wastes for production of mullite-containing ceramics: Powder preparation, sinterability and properties; Mahmoud F Zawrah, **Ahmed R. Wassel**, Rasha A Youness, Mohammed A Taha, *Ceramics International* (2022)**
- 49 **Efficacy assessment of metalloporphyrins as functional materials for photodetection applications: role of central tetrapyrrole metal ions; Ahmed M El-Mahalawy, Ahmed M Nawar, **Ahmed R. Wassel**, *Journal of Materials Science* (2022)**
- 50 **Impact of Sm₂O₃ on the Morphological, Optical, Magnetic, and Pesticide Adsorption of Co₃O₄/PANI Hybrid Nanocomposites; **Ahmed R. Wassel**, Reda M. Abdelhameed, N. H. S. Nasralla, and Hala Abomosta, *ECS Journal of Solid State Science and Technology* (2022)**
- 51 **Fabrication of organic-inorganic hybrid device for optoelectronic applications: Charge carriers dynamics and photoresponse assessment; F.M. Amin, **Ahmed R.****

- Wassel**, Ahmed M El-Mahalawy, Synthetic Metals (2023).
- 52 Novel $\text{Bi}_x\text{La}_{1-x}\text{Mn}_y\text{Co}_{1-y}\text{O}_3$ nanocrystalline perovskite based MIS Schottky UV photodetector device; S.E Ali, **Ahmed R. Wassel**, Ahmed M El-Mahalawy, Materials Research Bulletin (2023).
- 53 The effect of Nd_2O_3 on the structure and spectroscopic properties of SrO-ZnO- P_2O_5 glass for NIR emission at $1.058 \mu\text{m}$; A.H. Hammad, **Ahmed R. Wassel**, G.O. Rabie, S.Y. Marzouk, Optics and Laser Technology (2023).
- 54 Structured cadmium sodium diborate glass optical bandpass filters doped with copper oxide: Impact of cadmium oxide, Ahmed H. Hammad, Mohamed Sh. Abdelwahab, A. Alshahrie, Hamzah Salwati, Abdu Saeed, M.A.N. Razvi, Numan Salah, **Ahmed R. Wassel**, Materials Today Communications 35 (2023) 106196.
- 55 Role of substitution of sulfur atoms by oxygen atoms on optical characteristics of lead sulfide semiconductor, Zein K. Heiba, **Ahmed R. Wassel**, Hassan Elshimy, Essam E. Ali, Ali Badawi, Mohamed Bakr Mohamed, Applied Physics A (2023) 129:525.
- 56 Microspheres with 2D rGO/Alginate Matrix for Unusual Prolonged Release of Cefotaxime, Islam Gomaa, Merna H. Emam, **Ahmed R. Wassel**, Kholoud Ashraf, Sara Hussan, Haitham Kalil, Mekki Bayachou, and Medhat A. Ibrahim, Nanomaterials 2023, 13, 1527.
- 57 Realization temperature roles of in-situ ZnSe films growth toward efficient photodetection performance, Ahmed M. Nawar, **Ahmed R. Wassel**, Shehab E. Ali, Ahmed M. El-Mahalawy, Surfaces and Interfaces 42 (2023) 103415.
- 58 Selective photo-oxidative coupling of amines to form C–N bonds using post synthetic modification of MIL-68-NH₂ with metal acetylacetonate, Mahmoud El-Shahat, **Ahmed R. Wassel**, and Reda M. Abdelhameed, New J. Chem., 2023,47, 19474-19483.
- 59 Exploration of doping-dependent structural, optical, and electrical properties of thermally evaporated CdSe thin films for improved photodetection performance, **Ahmed R. Wassel**, S.A. Mansour, Farida M. Mohamed, Ahmed M. El-Mahalawy, Journal of Alloys and Compounds 976 (2024) 173052.
- 60 Impact of ZnO on spectroscopic and luminescence characteristics of Sm_2O_3 –SrO–

B2O3 glasses for warm reddish orange light emitting applications, H.M. Elsaghier, **Ahmed R. Wassel**, Moukhtar A. Hassan, S.Y. Marzouk, A. Samir, Materials Research Bulletin 173 (2024) 112700.

61 Integrative role of PEDOT: PSS in adjusting the photoresponse efficiency of novel reduced graphene quantum dots/silicon heterojunction for optoelectronics and solar energy conversion applications, Ahmed M. El-Mahalawy, W. Abbas, Ola Mostafa, Nehad A. Zidan, Hanady Hussein Issa, M. Fedawy, **Ahmed R. Wassel**, Surfaces and Interfaces 46 (2024) 103946.

62 Unveiling of novel synthesized coumarin derivative for efficient self-driven hybrid organic/inorganic photodetector applications; **Ahmed R. Wassel**, Eslam R. El-Sawy, Ahmed M. El-Mahalawy, Materials Today Sustainability 26 (2024) 100737.

63 Tuning the toughness, strength, and biological properties of functionally graded alumina/titania-based composites for use in bone repair applications; Rasha A. Youness , S.E. Abo Sawan , **Ahmed R. Wassel** , Azza A. Ward , Amany A. El-Kheshen , Emad Al-Ashkar , Mohammed A. Taha, Ceramics International 150(2024) 48640–48654.

64 Indomethacin Delivery from PCL Nanofibrous Scaffolds Enhances Biomineralization and Cell Adhesion: Biocompatible Scaffold Model for Teeth Regeneration; Sara Ali El-Sayed ; Mostafa Mabrouk ; **Ahmed R. Wassel**; Mahmoud T Abo-elfadl ; boyhaina Abdelhady ; Hanan H. Beherei, Egyptian Journal of Chemistry 126(2024).
