

CURRICULUM VITAE

PERSONAL DATA

Name	Mohamed Khairy Abdel-Fattah Omran
Nationality	Egyptian.
Position	Professor of Physical Chemistry
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EDUCATION

Year	Academic Degree	Institution
2008	Doctor of Philosophy in Science	Benha University
2004	Master of Science	Benha University
1999	Bachelor of Science	Benha University

WORK EXPERIENCE

Period	Position	Address
2021 till now	Professor	Imam Mohammad Ibn Saud Islamic University
2015-2021	Associate Professor	Imam Mohammad Ibn Saud Islamic University
2014-2015	Assistant Professor	Benha University
2008-2014	Lecturer	Benha University
2004-2008	Assistant Lecturer	Benha University
1999-2004	Demonstrator	Benha University

RESEARCH INTERESTS

Synthesis and applications of nanomaterials in different fields such as catalysis, dye sensitized solar cells, sensor, biological activity, magnetic and electrical properties.

PUBLICATIONS

Some selected publications

- 1- Synthesis and structural characterization of TiO₂ and V₂O₅/TiO₂ nanoparticles assembled by the anionic surfactant sodium dodecyl sulfate, Mohamed Mokhtar Mohamed, W.A. Bayoumy, M. Khairy, M.A. Mousa, Microporous and Mesoporous Materials, 97 (1–3) (2006) 66-77
- 2- Synthesis of micro–mesoporous TiO₂ materials assembled via cationic surfactants: Morphology, thermal stability and surface acidity characteristics, Mohamed Mokhtar Mohamed, W.A. Bayoumy, M. Khairy, M.A. Mousa, Microporous and Mesoporous Materials, 103 (1–3) (2007) 174-183.
- 3- Structural features and photocatalytic behavior of titania and titania supported vanadia synthesized by polyol functionalized materials, Mohamed Mokhtar Mohamed, W.A. Bayoumy, M. Khairy, M.A. Mousa, Microporous and Mesoporous Materials, 109 (1–3) (2008) 445- 457.
- 4- Electrical and Catalytic Properties of Gamma-irradiated and Unirradiated ZnMn₂O₄ Nanoparticles, M. Khairy, M. A. Mousa, American Journal of Chemistry 2(6) (2012) 306-311.
- 5- Effect of γ -Radiation on Electrical and Magnetic Properties of Manganite Materials with Spinel Structures, M. Khairy, M.A. Mousa, Physical Chemistry 2(6) (2012) 109-115.
- 6- Electrical and Photocatalytic Properties of Nano Fe_{0.1}Zn_{0.9}Mn₂O₄ Spinel Structures, M. Khairy, M. A. Mousa, Science Technology 2(6) (2012) 182-190
- 7- Influences of γ -Radiation and Surfactants on Electrical and Magnetic Properties of Cu_{0.1}Zn_{0.9}Mn₂O₄ Nanoparticles, M. Khairy, M. A. Mousa, International Journal of Materials and Chemistry 2(5) (2012) 197-204.
- 8- Electrical properties of fast ion conducting silver based borate glasses: Application in solid battery, Emad M.Masoud, M. Khairy, M. A. Mousa, Journal of Alloys and Compounds, 569 (2013) 150-155.
- 9- Characterization and photo-chemical applications of nano-ZnO prepared by wet chemical and thermal decomposition methods, M.A. Mousa, W.A.A. Bayoumy, M. Khairy, Materials Research Bulletin 48 (2013) 4576–4582
- 10- Synthesis, Characterization and Magnetic Properties of γ - irradiated and Unirradiated Magnetite Nanopowders, M. Khairy, International Journal of Materials and Chemistry 3(5) (2013) 106-111
- 11- Optimization of polyester printing with disperse dye nanoparticles. H. Osman & M. Khairy, Indian Journal of Fibre & Textile Research, 38 (2013) 202-206.
- 12- Preparation of Silver nanoparticle and Silver/SiO₂ nanocomposite and their applications, M. Khairy, R. Kamal, Arab Journal of Nuclear Science and Applications, 46(5) (2013) 88-99.
- 13- A New Approach in Printing Wool and Wool/Polyester Fabrics with Disperse Dye Nanoparticles, D. Maamoun, H. Osman, S.H. Nassar, and M. Khairy, Journal of Basic Applied Scientific Research, 3(3) (2013) 375-380.
- 14- Synthesis, characterization, magnetic and electrical properties of polyaniline/NiFe₂O₄ nanocomposite, M. Khairy, Synthetic metals, 189 (2014) 34-41.
- 15- Improving Printability of Silk and Polyamide Substrates with Madder Nano-Sized Particles, D Maamoun and M Khairy, American Journals of Nanoscience and Nanotechnology Research, Vol. 2 (2014), 1-12.

- 16- Effect of metal-doping of TiO₂ nanoparticles on their photocatalytic activities toward removal of organic dyes, M. Khairy, W. Zakaria, Egyptian Journal of Petroleum, 23(2014) 419-426.
- 17-Polyaniline–Zn_{0.2}Mn_{0.8}Fe₂O₄ ferrite core–shell composite: Preparation, characterization and properties, M. Khairy, Journal of Alloys and Compounds 608 (2014) 283–291.
18. Thermodynamics Parameters for solvation of nano ZnO and its dopes in 50% DMSO – 50% DMF (v/v) solutions at different temperatures, E. A. Gomaa, M. Khairy, A. Kekri, Y. A. Sherif, Energy Review, 1(2) (2014) 44-55.
19. Synthesis and Electrical Properties of Gamma-Irradiated and Unirradiated Nano-Magnetite, M. Khairy and M.A. Mousa, International Journal of Engineering and Innovative Technology, 4(4) (2014) 208-214.
20. Thermodynamics of the Solvation of Lead Nitrate in Mixed Acetone- H₂O Solvents at Different Temperatures, Esam A Gomaa, Elsayed M Abou Elleef, Ahmed Fekri, Mohamed Khairy and Reham M Abou Karn, Research and Reviews: Journal of Chemistry, 3(3) (2014) 22-28.
- 21- Electrical and optical properties of nickel ferrite / polyaniline Nanocomposite, M. Khairy, M. E. Gouda, Journal of Advanced research, 6 (2015) 555-562.
22. Thermodynamics of solvation for nano zinc oxide in 2M NH₄Cl+Mixed DMF+H₂O solvents at different temperatures, E. A. Gomaa, M. Khairy, A. Kekri, Y. A. Sherif, American Association for Science and Technology, 2(4) (2015)121-126.
23. Thermodynamic Studies on Electron Donor - Acceptor Interaction of Nano Cobalt Sulphate with 4-imino-1- phenyl - 3(p-tolyl) -1,4 dihydro-5H-pyrazolo [3,4-d] pyrimidin-5-amine in Mixed N,N-Dimethyl - formamide – Water Solvents, E. A. Gomaa, H. M. Hassaneen, M. A. Mousa, M. Khairy, A. Shokr, American Journal of Environmental Engineering and Science, 2015; 2(6): 78-85
24. SnO₂(β-Bi₂O₃)/Bi₂Sn₂O₇ Nanohybrids Doped Pt and Pd Nanoparticles: Applications in Visible-Light Photocatalysis, Electrical Conductivity and Dye-sensitized Solar Cells, Mohamed Mokhtar Mohamed Abdalla and M. Khairy, Physical Chemistry Chemical Physics, 17 (2015) 21716-21728.
25. Effect of Ni content on optical, colorimetric, surface and magnetic properties of Ni_xCo_{1-x}Al₂O₄ nanoparticles, M. Khairy, J Iran Chem Soc, 13(2016) 671–677.
26. Activity and stability studies of titanates and titanate-carbon nanotubes supported Ag anode catalysts for direct methanol fuel cell, Mohamed Mokhtar Mohamed, M. Khairy, Salah Eid, Journal of Power Sources 304 (2016) 255-265.
27. High-Performance Hybrid Supercapacitor Based on Pure and Doped Li₄Ti₅O₁₂ and Graphene, M. Khairy, K. Faisal, M.A. Mousa, journal of solid state electrochemistry 21(3) (2016) 873-882.
28. Nanostructured Ferrite/graphene/polyaniline using for supercapacitor to enhance the capacitive behavior, M.A. Mousa, M. Khairy, M. Shehab, journal of solid state electrochemistry, 21 (2017) 995–1005.
29. Optical and kinetics of thermal decomposition of PMMA/ZnO nanocomposites, M. Khairy, N. H. Amin, R. Kamal, Journal of Thermal Analysis and Calorimetry, 128 (2017) 1811-1824.
30. Photocatalytic Activity of Nitrogen and Copper Doped TiO₂ Nanoparticles Prepared by Microwave-Assisted Sol-Gel Process, S. M. Reda, M. Khairy, M. A. Mousa, Arabian journal of chemistry, 13 (2017) 86-95.

- 31- Surfactant-assisted Formation of Silver Titanates as Active Catalysts for Methanol Electro-oxidation, Mohamed Mokhtar Mohamed, M. Khairy, Salah Eid, Applied Catalysis A, General 547 (2017) 205–213.
- 32- Polyethylene glycol assisted one-pot hydrothermal synthesis of $\text{NiWO}_4/\text{WO}_3$ heterojunction for direct Methanol fuel cells, Mohamed Mokhtar Mohamed, M. Khairy, Salah Eid, Electrochimica Acta, 263 (2018) 286-298.
- 33- Nitrogen Graphene: A new and Exciting Generation of Visible Light Driven Photocatalyst and Energy Storage Application, Mohamed Mokhtar Mohamed, M. Mousa, M. Khairy, A. Amer, ACS Omega, 3 (2) (2018) 1801–1814.
- 34- Dispersed $\text{Ag}_2\text{O}/\text{Ag}$ on CNT-Graphene Composite: An Implication for Magnificent Photoreduction and Energy Storage Applications, Mohamed Mokhtar Mohamed, M. Khairy and Ahmed Ibrahim, Frontiers in chemistry, (2018) 6:250
- 35- Flexible Solid-State Supercapacitors Based on Carbon Aerogel and Some Electrolyte Polymer Gels, T. Esawy, M. Khairy, A. Hany, M.A. Mousa, Applied Physics A (2018) 124: 566.
- 36- Dye-Sensitized Solar Cells Based on an N-Doped TiO_2 and TiO_2 -Graphene Composite Electrode, M.A. Mousa, M. Khairy , H. M. Mohamed, Journal of Electronic materials, 47 (2018) 6241–6250.
- 37- Comparative studies on the impact of synthesis methods on structural, optical, magnetic and catalytic properties of CuFe_2O_4 , S. S. Selima, M. Khairy, M. A. Mousa, Ceramics International 45 (2019) 6535–6540.
- 38- Influence of preparation method on structural, optical, magnetic, and adsorption properties of nano- NiFe_2O_4 , Samah Samy Selima, Mohamed Khairy, Wafaa Abdallah Bayoumy, Mahmoud Ahmed Mousa, Environmental Science and Pollution Research, 26 (2019) 21484-21494.
- 39- Synthesis of Ternary and Quaternary Metal Oxides Based on Ni, Cu, Mn, and Co for High Performance Supercapacitor, M. Khairy, M. A. Mousa, Journal of Ovonic Research, 15 (2019)181 – 198.
- 40- Thermodynamic and Thermal Properties of Solvation for Nano Nickel Ferrite and Nano Zinc Ferrite Prepared by the Sol–Gel Method in Different CH_3COOH Concentrations at Different Temperatures, M. A. Mousa, E. A Gomaa, M. Khairy, M. E. Eltanany, Journal of Inorganic and Organometallic Polymers and Materials, (2019) <https://doi.org/10.1007/s10904-019-01200-5>.
- 41- Photovoltaic and capacitance performance of low-resistance ZnO nanorods incorporated into carbon nanotube-graphene oxide nanocomposites, Mohamed M. Mohamed, Mohamed A. Ghanem, S. M. Reda, M. Khairy, Nouf H. Alotaibi, Electrochimica Acta, 307(2019) 430-441.
- 42- Zinc oxide incorporated carbon nanotubes or graphene oxide nanohybrids for enhanced sonophotocatalytic degradation of methylene blue dye, Mohamed Mokhtar Mohamed, Mohamed A. Ghanem, Mohamed Khairy, Eman Naguib, Nouf H. Alotaibi, Applied Surface Science 487 (2019) 539–549.
- 43- Effect of annealing temperature and Ag contents on the catalytic activity and supercapacitor performances of $\text{Ag}@\text{Ag}_2\text{O}/\text{RGO}$ nanocomposites, M. Khairy, Mohamed Mokhtar Mohamed, S.M. Reda, Ahmed Ibrahim, Materials Science & Engineering B 242 (2019) 90–103.

- 44- P-n junction based $\text{Ag}_2\text{O}@\text{Ag}$ @Coated functionalized carbon nanotubes and their efficient visible-light photocatalytic reduction performances, Mokhtar Mohamed Mohamed, M. Khairy, Ahmed Ibrahim, *Microporous and Mesoporous Materials* 292 (2020) 109734.
45. Structural and Electrical Characterization of Ba/ZnO Nanoparticles Fabricated by Co-precipitation, A. Modwi, Kamal K. Taha, L. Khezami, Abdullah S. Al-Ayed, O. K. Al-Duaij, M. Khairy, M. Bououdina, *Journal of Inorganic and Organometallic Polymers and Materials*, 30, (2020) 2633–2644.
46. Structural, electrical and electrochemical properties of ZnO nano-particles synthesized using dry and wet chemical methods, M.G. El-Shaarawy, M. Khairy, M.A. Mousa, *Advanced Powder Technology* 31 (2020) 1333–1341
47. Enhancement of Photocatalytic and Sonophotocatalytic Degradation of 4-nitrophenol by ZnO/Graphene Oxide and ZnO/Carbon Nanotube Nanocomposites, M. Khairy, Eman M. Naguib, Mohamed Mokhtar Mohamed, *Journal of Photochemistry & Photobiology, A: Chemistry* 396 (2020) 112507
48. Synthesis of nano-Zinc Oxide with different morphologies and its Application on Fabrics for UV-Protection and Microbe Resistant Defense Clothing, M.A. Mousa and M. Khairy, *Textile Research Journal*, Vol 90, Issue 21-22, (2020).
49. Dependence of the electrical properties of Ag-decoration on Cu-doped ZnO nanoparticles, A. Modwi, Kamal K. Taha, L. Khezami, M. Khairy, *Zeitschrift für Physikalische Chemie, International journal of research in physical chemistry and chemical physics*, (2020) <https://doi.org/10.1007/s10904-019-01425-4>
50. Electrical and Electrochemical Behavior of Binary $\text{Li}_4\text{Ti}_5\text{O}_{12}$ -Polyaniline Composite, M. Khairy, W. A. Bayoumy, K. Faisal, E. E. Elshereafy, M. A. Mousa, *Journal of Inorganic and Organometallic Polymers and Materials* 30(8) (2020) 3158–3169.
51. Studies on characterization, magnetic and electrochemical properties of nano-size pure and mixed ternary transition metal ferrites prepared by the autocombustion method, M. Khairy, W. A. Bayoumy, S. S. Selima, M. A. Mousa, *Journal of materials research* (2020) 1-12.
- 52- Characterization and Super-Capacitive Properties of Nanocrystalline Copper Ferrite Prepared via Green and Chemical Methods, M. Khairy, M.G. El-Shaarawy, and M.A. Mousa, *Materials Science and Engineering B* 263 (2021) 114812.
53. Ternary V-doped $\text{Li}_4\text{Ti}_5\text{O}_{12}$ -polyaniline-graphene nanostructure with enhanced electrochemical capacitance performance M. Khairy, W.A. Bayoumy, K.F. Qasim, E. El-Shereafy, M.A. Mousa, *Materials Science and Engineering B* 271 (2021) 115312.
- 54- Monira G Ghoniem, Mohamed Ali Ben Aissa, Efficient and Rapid Removal of Pb(II) and Cu(II) Heavy Metals from Aqueous Solutions by MgO Nanorods. *Inorganics* 10(12), (2022) 256
- 55- Ehab A. Abdelrahman, R.M. Hegazey, Sameh H. Ismail, Hesham H. El-Feky, Abdalla M. Khedr, M. Khairy, Alaa M. Ammar, Facile synthesis and characterization of β -cobalt hydroxide/hydrohausmannite/ramsdellite/spertiniite and tenorite/cobalt manganese oxide/manganese oxide as novel nanocomposites for efficient photocatalytic degradation of methylene blue dye. *Arabian Journal of Chemistry* 15 (12), (2022) 104372.

- 56- M Khairy, EM Kamar, MA Mousa, Photocatalytic activity of nano-sized Ag and Au metal-doped TiO₂ embedded in rGO under visible light irradiation. *Materials Science and Engineering: B* 286, (2022) 116023.
- 57- Abbas I. Alakhras and Ahmed A. Farag Arafat Toghan, Ahmed Fawzy, Areej Al Bahir, Nada Alqarni, Moustafa M. S. Sanad, Mohamed Khairy, Computational Foretelling and Experimental Implementation of the Performance of Polyacrylic Acid and Polyacrylamide Polymers as Eco-Friendly Corrosion Inhibitors for Copper in Nitric Acid, *Polymers* 14 (2022) 4802.
- 58- MM Mohamed, M Khairy, AA Amer, MA Mousa Nonconventional synthesis of polyhedral Mn₃O₄ nanoarchitectures incorporated reduced graphene oxide: superior supercapacitor capabilities, *Journal of Materials Research and Technology* 21, (2022) 2555-2570
- 59- A Modwi, WM Daoush, M El-Eteaby, MAB Aissa, MG Ghoniem, M Khairy, Fabrication and adsorption studies of paste/TiO₂ nanocomposites through recycling of spent dry batteries, *Journal of Materials Science: Materials in Electronics* 33 (32), (2022) 24869-24883.
- 60- M Khairy, R Kamal, MA Mousa, Preparation and physical properties of conductive silk fabrics used in wearable clothes and flexible supercapacitors, *Journal of Industrial Textiles* 52 (2022) <https://doi.org/10.1177/15280837221130512>.
- 61- Arafat Toghan, A. Modwi, Ayman M. Mostafa, Abbas I. Alakhras, M. Khairy, Insight of yttrium doping on the structural and dielectric characteristics of ZnO nanoparticles. *Journal of Materials Science: Materials in Electronics* 33 (2022) 18167–18179.
- 62- A Toghan, M Khairy, EM Kamar, MA Mousa, Effect of particle size and morphological structure on the physical properties of NiFe₂O₄ for supercapacitor application, *journal of materials research and technology* 19 (2022) 3521-3535
- 63- M. Khairy, N. Magdy, Effect of Ni content, temperature on the electrical and colorimetric properties of nano Ni_xZn_(1-x)O blue pigments, *Digest Journal of Nanomaterials and Biostructures* 17 (4) (2022) 1111-1124
- 64- M. A.Mousa, M Khairy, R Kamal, Anti-microbial and methylene blue dye adsorption properties of cotton fabrics modified with TiO₂, Fe, Ag-doped TiO₂, and graphene oxide nanomaterials, *Textile Research Journal*, 92(2021).
- 65- Arafat Toghan, M. Khairy, Mohamed Mokhtar Mohamed, Synthesis of defect-impressive boron graphene as a remarkable electrocatalyst for methanol oxidation reaction, *journal of materials research and technology* 16 (2021) 362 -372.
- 66- Arafat Toghan, M. Khairy, Minghua Huang, Electrochemical, surface analysis, and theoretical investigation of 3-hydroxy-5-(phenylamino)-4-(p-tolyldiazenyl)thiophen-2-yl)(phenyl)methanone as a corrosion inhibitor for carbon steel in a molar hydrochloric acid solution, *International Journal of Electrochemical Science* 18(2023) 100070.
- 67- Arafat Toghan, M. Khairy, Minghua Huang, Electrochemical, chemical and theoretical exploration of the corrosion inhibition of carbon steel with new imidazole-carboxamide derivatives in an acidic environment, *International Journal of Electrochemical Science* 18(2023) 100072.
- 68- Mohamed Mokhtar Mohamed, S. M. Syam, Extremely efficient Methanol Oxidation Reaction performance: a highly active catalyst derived from different Mn_{2-x}O_y phases-supported Ag@Ag₂WO₄. *Electrochimica Acta* 437 (2023) 141528