

CURRICULUM VITAE

PERSONAL DATA

Name	Nawal Ahmad Madkhali
Nationality	Saudi
Position	Associate proffesor
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EDUCATION

Year	Academic Degree	Institution
August 2018	PhD, Condensed Matter Physics	King Saud University
December 2008	Master's degree in theoretical Physics	Imam Abdulrahman bin Faisal University
June2003	Bachelor's degree degree in physics	Imam Abdulrahman bin Faisal University

WORK EXPERIENCE

Period	Position	Address
2023 – Presnt	Associate professor at Imam Mohammed bin Saud University/ physics department	Imam Mohammed bin Saud Islamic University
2018-Present	Member of the Graduate Studies Committee of the Department of Physics	Imam Mohammed bin Saud Islamic University
2019-Present	Collaborating with the Education and Training Evaluation Commission	Education and Training Evaluation Commission
2021- Present	Member of the Professional Advisory Committee at Qassim University	Qassim University
2019-2021	Vice Head of physics department (female section)	Imam Mohammed bin Saud Islamic University
2018-2023	Assistant professor / physics department	Imam Mohammed bin Saud Islamic University

2016-2019	Academic Advisor of physics department	Imam Mohammed bin Saud University
2009-2010	Member of the Quality Unit of science college	Imam Mohammed bin Saud University
2008 – 2018	Lecturer at physics department	Imam Mohammed bin Saud University

RESEARCH INTERESTS

Optical , electrical, and magnetic properties of materials, superparamagnetic , DFT theory, organic -non organic hybrid nano-materials, electrodeposition techniques such as (Cyclic voltammetry , chronopotentiometry ,...), Solar cell properties

PUBLICATIONS

Granted US Patents

1. Dye-Sensitized Solar Panel, Manal Ahmed Gasmelseed Awad, Awatif Ahmed Hendi, Khalid Mustafa Osman Ortashi, Nawal Ahmad Abdu Madkhali,
Publication number: US2017/0294272, Oct. 12, 2017
2. Synthesis of reduced graphene oxide nanoparticles, Nawal Ahmad Madkhali, Manal Ahmed Gasmelseed Awad, Awatif Ahmed Hendi, Khalid Mustafa Osman Ortashi, Amel Laref, Hajar Abdullah Aldakhil, Fatimah Yahya Mohammad Al-Abbas, Lena Jassim,
Publication number: US 2017/9815701, Nov., 14, 2017

ISI Publication

3. CdS based heterojunction for water splitting: A review ,Cheera Prasad, **Nawal Madkhali**, Jong Sung Won, Ji Eun Lee, Materials Science and Engineering: B, volume 292, June 2023, 116413
4. Recent progress on the development of g-C₃N₄ based composite material and their photocatalytic application of CO₂ reductions, Cheera Prasad, **Nawal Madkhali**, V Govinda, Hyeong Yeol Choi, Indra Bahadur, Sambasivam Sangaraju, Journal of Environmental Chemical Engineering, 2023
5. Recent developments in GO/Cellulose based composites: properties, synthesis, and its applications, Cheera Prasad, **Nawal Madkhali**, Byoung-Min Lee, Chan Sol Kang, Hyeong Yeol Choi, Polymer, Volume 11, Issue 3, June 2023, 109727
6. Recent advances in the hybridization of cellulose and semiconductors: Design, fabrication, and emerging multidimensional applications: A review, Cheera Prasad, **Nawal Madkhali**, Seong-Geun Jeong, Kuruma Malkappa, Hyeong Yeol Choi, V Govinda, International Journal of Biological Macromolecules, Volume 270, 27 March 2023, 125786
7. Recent update on photocatalytic degradation of pollutants in waste water using TiO₂-based heterostructured materials, **Nawal Madkhali**, Ch Prasad, K Malkappa, Hyeong Yeol Choi, V Govinda, I Bahadur, RA Abumousa, Results in Engineering, Volume 17, March 2023, 100920
8. Assessing the Heat Generation and Self-Heating Mechanism of Superparamagnetic Fe₃O₄ Nanoparticles for Magnetic Hyperthermia Application: The Effects of Concentration, O. M. Lemine *, Saja Algeassair,, **Nawal Madkhali**, Basma Al-Najar and Kheireddine, Nanomaterials 2023, 13, 453.
9. Frequency, and Magnetic Field Preparation and characterization of natural melanin and its nanocomposite formed by copper doping ,Ghada Khouqeer, Mawadda Alghrably, **Nawal Madkhali**, Manel Dhahri, Mariusz Jaremko, Abdul-Hamid Emwas, October 2022, Nano select, Wiley online
10. Heating Ability of -Fe₂O₃@ZnO/Al Nanocomposite for Magnetic Hyperthermia Applications, Science of Advanced Materials, Volume 14, Number 8, August 2022, pp. 1394-1400(7)
11. Performance Improvement of Graded Bandgap Solar Cell via Optimization of Energy Levels Alignment in Si Quantum Dot, TiO₂ Nanoparticles, and Porous Si, Mohammad S. Almomani , Naser M. Ahmed , Marzaini Rashid, Khalid Hassan Ibnaouf , Osamah A. Aldaghri, **Nawal Madkhali** ,* and Humberto Cabrera ,Photonics, 9 Nov 2022

12. Preparation and characterization of natural melanin and its nanocomposite formed by copper doping, Ghada Khouqeer, Mawadda Alghrably, **Nawal Madkhali**, Manel Dhahri, Mariusz Jaremko, Abdul-Hamid Emwas, Wiely online library, 27 Oct, 2022
13. Analysis Of Structural, Optical And Magnetic Properties Of (Fe,Co) Co-Doped ZnO Nanoparticles Synthesized Under UV Light, , **Nawal Madkhali**, Condens. Matter **2022**, 7
14. Thermal Diffusivity and Conductivity of Polyolefins by Thermal Lens Technique, B Abbasgholi-Na, SR Nokhbeh, OA Aldaghri, KH Ibnaouf, **N Madkhali**, Humberto Cabrera ..., Polymers 14 (13), 2707
15. Optical characteristics of Al-doped ZnS thin film using pulsed laser deposition technique: the effect of aluminum concentration, A. A. Ahmed O. Aldaghri, E. Y. Salihc. Ramizyd, **N Madkhali**, T. Alinad, K. H. Ibnaouf, M. H. Eisaa, Chalcogenide Letters Vol. 19, No. 6, June 2022, p. 381 - 388
16. Rapid Synthesis of Hexagonal-Shaped Zn (Al) O-MMO Nanorods for Dye-Sensitized Solar Cell Using Zn/Al-LDH as Precursor, EY Salih, A Ramizy, O Aldaghri, MFM Sabri, **N Madkhali**, T Alinad, ..., Nanomaterials 12 (9), 1477
17. On the Absorption and Photoluminescence Properties of Pure ZnSe and Co-Doped ZnSe:Eu³⁺/Yb³⁺ Crystals B Abbasgholi-NA, OA Aldaghri, KH Ibnouf, **N Madkhali**, H Cabrera, Applied Sciences 12 (9), 4248
18. Morphological characteristics of β -irradiated lead oxide nano-sized particles, O. Aldaghri a, E. Y. Salih b, A. Ramizy, M. F. M. Sabri, **N. Madkhali**, T. Alinad, K. H. Ibnaouf, M. H. Eisa, Digest Journal of Nanomaterials and Biostructures, Vol. 17, No. 1, January - March 2022, p. 29 - 37
19. Synthesis, characterization and heating efficiency of Gd-doped maghemite (γ -Fe₂O₃) nanoparticles for hyperthermia application, Ibteham Alotaibi, Marzook S. Alshammari, Saja Algessair, **N. Madkhali**, N. Abdel Allae, M. Hjiri, Sharif AbuAlrubal, El Mird, O. M. Lemine, Physica B: Condensed Matter, Volume 625, 15 January (2022), 413510
20. In-Depth Optical Analysis of Zn(Al)O Mixed Metal Oxide Film-Based Zn/Al-Layered Double Hydroxide for TCO Application, Ethar Yahya Salih, Asmiet Ramizy, Osamah Aldaghri, Mohd Faizul Mohd Sabri, **Nawal Madkhali**, Tarfah Alinad, Khalid Hassan Ibnaouf, Mohamed Hassan Eisa, Crystals 2022, 12(1), 79
21. Influence of eumelanin and gamma irradiation on ZnO nanocomposite properties, B.A. El-Badry, **Nawal Madkhali**, A.M. Deghady, Radiation Physics and Chemistry, Volume 191, February (2022), 109845
22. Active Bionanocomposite Coating Quality Assessments of Some Cucumber Properties with Some Diverse Applications during Storage Condition by Chitosan, Nano Titanium Oxide Crystals, and Sodium Tripolyphosphate Mahmoud Helal 1, Rokayya Sami, Eman Algarni, Garsa Alshehry, Huda Aljumayi, Amina A. M. Al-Mushhin, Nada Benajiba, Murthy Chavali, Nishant Kumar, Abdullah Iqbal, Salman Aloufi, Amal Alyamani, **Nawal Madkhali** and Abeer Almasoudi, Crystals 2022, 12, 13
23. A Continuously Tunable Full-Color Emission Nitrogen-Doped Carbon Dots and for Ultrasensitive and Highly Selective Detection of Ascorbic Acid Demin Huang 1, Haiyan Qi, Jing Jing, Rokayya Sami, Tao Jing, Sultan J. Alsufyani, Nada Benajiba and **Nawal Madkhali**, Nanomaterials (2022), 12, 693
24. Photovoltaic Performance of Spherical TiO₂ Nanoparticles Derived from Titanium Hydroxide Ti(OH)₄: Role of Annealing Varying Temperature, Mohammad S. Almomani, Naser M. Ahmed, Marzaini Rashid, Nursakinah Suardi, Munirah A. Almessiere, **Nawal Madkhali**, Osamah A. Aldaghri, and Khalid Hassan Ibnaouf. Energies (2022), 15
25. In-Depth Optical Analysis of Zn(Al)O Mixed Metal Oxide Film-Based Zn/Al-Layered Double Hydroxide for TCO Application Ethar Yahya Salih, Asmiet Ramizy, Osamah Aldaghri, Mohd Faizul Mohd Sabri, **Nawal Madkhali**, Tarfah Alinad, Khalid Hassan Ibnaouf and Mohamed Hassan Eisa, Crystals 2022, 12, 79
26. Maghemite (γ -Fe₂O₃) and γ -Fe₂O₃-TiO₂ Nanoparticles for Magnetic Hyperthermia Applications: Synthesis, Characterization and Heating Efficiency O. M. Lemine 1, **Nawal Madkhali**, Marzook Alshammari, Saja Algessair, Abbasher Gismelseed Lassad El Mir, Moktar Hjiri, Ali A. Yousif and Kheireddine El-Boubbou, Materials (2021), 14
27. Magnetic and optical investigation of Eumelanin-ZnO as organic-non-organic nanocomposite, **Nawal Madkhali***, Naglaa Abdel All a,b, Saja Algessair a, Souad Hamod Aodah, Optik - International Journal for Light and Electron Optics 225 (2021) 165772.
28. Comparative heating efficiency of hematite (α -Fe₂O₃) and nickel ferrite nanoparticles for magnetic hyperthermia application, O.M. Lemine, **N. Madkhali**, M. Hjirib, N. Abdel All, M.S. Aida, Ceramics International, Volume 46, Issue 18, Part A, 15 December 2020, PP28821-28827
29. Photocatalytic Activity, Microstructures and Luminescent Study of Ti-ZS:M Nano-composites Materials, N. Alonizan, L. Chouiref, K. Omri, M. A. Gondal, **Nawal Madkhali**, Taher Ghrib & Abdullah I. Alhassan Journal of Inorganic and Organometallic Polymers and Materials (2020)
30. Characterization and electrochemical deposition of natural melanin thin films, **Nawal Madkhali**, Hadi R. Alqahtani,

- Seham Alterary, Hamad A. Albrithen, Amel Laref, Adel Hassib, Arabian Journal of Chemistry (2020) 13, 4987–4993
31. Control of optical absorption and fluorescence spectroscopies of natural melanin at different solution concentrations, **Nawal Madkhali**, Hadi. R Alqahtani, Seham Al-Terary, Amel Laref, Optical and Quantum Electronics, July 2019, 51:227
 32. Electronic structures and optical spectroscopies of 3d-transition metals doped melanin for spintronic devices application, A. Laref, **N. Madkhali**, H.R. Alqahtani, Xiazhi Wu, S. Laref, Journal of Magnetism and Magnetic Materials, Volume 491, 1 December 2019, 165513
 33. Systematic Investigation of the Electrochemical Properties of Natural Melanin for Various Electrode Cells, **Madkhali, Nawal**; Hassib, Adel; Alqahtani, Hadi R.; Al-Britain, Hamad; Alterary, Seham; Laref, Amel, Journal of Biobased Materials and Bioenergy, Volume 13, Number 4, August 2019, pp. 429-437(9)
 34. The doping effect of Fe, Cu and Zn ions on the structural and electrochemical properties and the thermostability of natural melanin extracted from Nigella sativa L, **N. Madkhali**, H.R. Alqahtani, Seham Al-Terary, A. Laref, A. Haseeb, Journal of Molecular Liquids 285 (2019) 436–443
 35. Graphene Oxide Nanoscrolls: Synthesis, Characterization, Optical, and Electrical Properties, Awad, Manal A.; Aljaseem, Leena; **Modkhali, Nawal A.**; Aldakheel, Hajar; Alenazi, Wadha.; Laref, Amel; Ortashi, Khalid M. O.; Hendi, Awatif A., Journal of Nanoelectronics and Optoelectronics, Volume 14, Number 1, January 2019, pp. 1-7(7)

Conference

36. Presentation in the International Workshop for Advanced Material (IWAM) February 2016, Enhancement of the dye-sensitized solar cells performance using ZnONPs, TiO₂NPs and a composite of ZnO- TiO₂NPs”, Awad, Manal A.; Aljaseem, Leena; **N.Madkhali**, Laref, Amel; Ortashi, Khalid M. O.; Hendi, Awatif A. international workshop on Advanced Materials (IWAM-2016), Ras Al Khimah/UAE.
37. Doped and Un-doped Maghemite Nanoparticles for Magnetic Hyperthermia Application, O. M. Lemine, Ibtesam Alotaibi, Anfal Aldawood, Saja Algeesair N. Madkhali and L. El Mir, International Symposium on Advanced Materials and Nanotechnology (iSAMN2021) Nanoscale Green Synthesis and Applications December 9-10, 2021
38. Optical and Electronic Properties of DHI Monomer of Eumelanin Doped with Transition Metals (TMs) Based on LSDA approximation in DFT Theory, **Nawal Madkhali**, The International Conference on Mathematical Modeling in Physical Sciences, University of Peloponnese, September 5-8, 2022