Ahmed A. El-Gendy, Ph.D.

Department of Physics, University of Texas El Paso
Tenured Associate professor of Physics and director of nanomagnetics and biomaterials Lab.
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EXECUTIVE SUMMARY

Peer reviewed journal publications: 74
Patents: 3; Prov. Patents: 4
Faculty & Post-doc research experience: 12 years
Funded research grants as PI and co-PI: 21
Postdocs/Graduate students supervised: 10
International conferences papers: 5
Book and book-chapters: 7
Teaching experience: 10+ years
Invited talks and posters: 60+
UG Students supervised: 12

EDUCATION AND TRAINING

2008 – 2011 Ph.D., Physics, Heidelberg University (Germany's top 1 and Europe's top 5 university)
Dissertation Title: Carbon-coated Nanomagnets: Synthesis, Characterization and Feasibility for Magnetic Hyperthermia

2003 – 2005 MS, Physics, Alexandria University, Egypt (Egypt's top 2 university)
Dissertation Title: Study of thermal properties for some metallic ferromagnetic thermoseeds

1998 – 2002 Bachelor's in physics, Alexandria University (Egypt's top 2 university), Egypt

PROFESSIONAL APPOINTMENTS

September 2023– Present **Tenured Associate Professor of Physics and Director of Nanomagnetics and Biomaterials Lab. (NanoLand)**
Department of Physics, College of Science, University of Texas at El Paso (UTEP), El Paso, TX, USA

Continuing my role in leading the nanomagnetics and biomaterials Laboratory to conduct research on synthesis, characterization, and applications of magnetic nanostructured materials. We are now focusing on Invitro/In vivo hyperthermia work on different solid tumor cell lines. This work is running in collaboration with Prof. Jason Stafford at department of Imaging Physics at MD Anderson. In addition, we are developing novel room temperature molecular magnets for quantum computing and nanomedicine (highlighted by newsletters such as Phys.org 2023).

September 2017– August 2023 **Assistant Professor of Physics and Director of Nanomagnetics and Biomaterials Lab. (NanoLand)**
Department of Physics, College of Science, University of Texas at El Paso (UTEP), El Paso, TX, USA

Leading the nanomagnetics and biomaterials Laboratory to conduct research on synthesis, characterization, and applications of magnetic nanostructured materials. The aim of the lab. Is to connect fundamental science with experimental to be applicable for various purposes such as MRI, Drug delivery, Hyperthermia treatment for cancer, data storage, magnetic ferrofluid lubricants magnetic refrigeration and energy harvesting. The Lab. setup include chemical, physical, and microbial methods for synthesis of nanoparticles, magnetic properties, and feasibility of hyperthermia measurements techniques.

June 2019 – August 2019 **Visiting Professor**
UT Southwestern Medical centre (UTSW), Dallas, TX, USA

This was my summer sabbatical visit by Building scholar program, funded by NIH, to perform the in vivo experiments of my magnetic nanoparticles for magnetic hyperthermia treatment for cancer. In

collaboration with Prof. Rolf Brekken at UTSW medical centre, I have been trained to do cell culture, cell viability assays to examine the biocompatibility of the magnetic nanoparticles in vitro as well as in vivo.

June 2016 – August 2017 **Senior Scientist (Senior Postdoc),**
Dept. of Mech. & Nuclear Eng., Virginia Commonwealth University (VCU)
Leading the Biomagnetics Laboratory in collaboration with Prof. Hadimani to conduct latest research on synthesis, characterization and applications of magnetic materials and devices in biomedical engineering. Submitted various research proposal to NSF and DOE as Co-PI. Supervising 2 graduate students and 2 undergrads. Research assistants. I am responsible for conduct of research for graduate and undergrad students. I am a treasurer of IEEE on magnetics society Richmond chapter for inviting IEEE distinguished lecturers to the Department of mechanical and nuclear engineering of VCU. One of the lab. duties are focused to find solutions to existing problems such as deep magnetic stimulation on patients that already have implants in collaborations with the Dept. of Neurosurgery of School of Medicine of VCU. The lab. also collaborate with Dept. of Psychiatry to develop new transcranial magnetic stimulation (TMS) treatment procedures for patients with various neurological disorders.

Jan. 2017 – May 2017 **Lecturer of General Physics,**
Dept. of Physics, Virginia Commonwealth University (VCU)
Teaching the general physics course **(PHYS201)** for undergraduate students of physics and astronomy.

August 2016 – December 2016 **Lecturer of Materials science,**
Dept. of Mech. & Nuclear Eng., Virginia Commonwealth University (VCU)
Teaching the material science course **(EGMN309)** for undergraduate students of mechanical and nuclear engineering. I was in charge for teaching 175 students, and I have 3 teaching assistants for the class.

August 2015 – June 2016 **Senior Postdoc Researcher and Manager of Nano-Magnetics lab.,**
Dept. Of Chemistry, Virginia Commonwealth University (VCU)
As a senior postdoc, I was managing and conducting the research of the Magnetics Lab. for Prof. Everett Carpenter, Director of Nano Characterization Centre (NCC) at VCU. Co-advising 2 graduate and 3 undergrad students was part of my responsibilities. Supported various research projects in the department. Development of new magnetic carbide nanomaterials for permanent magnets applications was our focused research. This work was patented and highlighted by the department of energy, US-DOE and scientific newsletters such as Nanowerk, phys.org and AAAS in 2015 through 2016.

July 2015 – March 2016 **Research Scientist and Manager of R&D Dep.**
Nanofoundry, LLC. Ashland, Va 23005, USA
Nanofoundry is a technology spin-off company from Virginia Commonwealth University in Richmond, Virginia. As a research scientist, I oversaw developing the research to enhance the properties of the company's product. I was leading the optimization design and production of magnetic and nonmagnetic nanoparticles. I was focusing on the developing of low cost soft and hard magnetic materials for use in power generation, motors, data storage, and magnetocaloric for magnetic refrigeration. In addition, developing lubricant additives for the automotive industry was one of the main targets for the company. The innovation my work was resulted in 4 provisional patents.

November 2013 – June 2015 **Post-Doctoral Research Associate**
Dept. of Physics and Astronomy, University of Delaware (UD)
I was conducting and innovate new research regarding rare-earth free permanent magnets. I was managing this part of research for Prof. George Hadjipanayis. The research and development supported various research projects in Hadjipanayis's group such as NSF-G8, PNNL, and Siemens. Optimization a novel permanent magnets material that can compete the commercial ones made in china was my target.

Such successful work was published in various prestigious high impact factor journals. Supporting grad students and directing them in research was part of my postdoc duties.

September 2012 – October 2013 **Post-Doctoral Research Associate**
Dept. of Chemistry, Virginia Commonwealth University (VCU)

I was in charge of developing and optimizing the novel magnetic cobalt carbide nanomaterials for Prof. Everett carpenter. I have innovated a novel technique to synthesize the nanoparticles at controllable conditions. I was able too in collaboration with Prof. Shiv Khanna to experimentally achieve his theoretical prediction of presence of CoFeC phase which can be used for data storage applications. My work was the main key to support achieving the research funded by ARPE-e. The work resulted in several prestigious publications and patent that was highlighted worldwide by scientific newsletters.

October 2011– September 2012 **Assistant professor**
Dept. of Nanotechnology and Nanometrology, National Institute for standards, NIS, Egypt

Establishing and leading the nanotechnology and nanometrology at NIS to conduct latest research on synthesis, characterization and applications of nanomaterials and devices for biomedical and industrial applications. The lab. oversees development of the nanomaterials' research and collaboration with all the groups at NIS. One of the lab. research task was optimization of nanomaterials insulation for high voltage cable production. I have supervised one master student and supported other students and faculties to understand nanotechnology as new field at NIS.

October 2011– June 2012 **Assistant professor (part time)**
Faculty of Basic Science and Engineering, Arab Academy of Science, technology and Maritime transport, Egypt.

I taught **electricity, magnetism, thermodynamics, and heat transfer** courses for undergrad engineering students. My task was to make such courses attractive and interesting for engineering students. Most of the students that had my class and followed my advice, have graduated with excellent grades and became successful engineers.

June 2011– September 2011 **Guest Researcher**
Leibniz institute for Solid state research, IFW-Dresden, Germany

I conducted research regarding magnetic nanoparticles for hyperthermia treatment for cancer and for drug delivery. During this work, I collaborated with Prof. Ruediger Klingeler and different groups at IFW resulted in high impact factor prestigious publications.

May 2008 – June 2011 **Research fellow**
Leibniz Institute for Solid State Research, IFW-Dresden, Germany

I conducted research regarding core/shell structure of magnetic/nonmagnetic nanoparticles and their application for hyperthermia treatment for cancer. My task was the synthesis of core/shell magnetic nanoparticles using high pressure CVD to get monodispersed optimized high magnetic particles for magnetic hyperthermia applications. During my stay, I have co-advised new grad students and trained new students for the magnetometers and AC generators that I used to use in my research. My work at IFW resulted in best poster award of my work in 2009 and highlighted by the IFW magazine.

May 2007– April, 2008 **Research fellow**
Faculty of physics, University of Bielefeld, Germany

As research fellow, I had started my research by being trained on all high-tech nano techniques such as clean room, electron lithography, nanoparticles manipulation under microscope, sensors lab. on chip,

and sputtering machine. During this year I have gained much experience with all techniques and trained many of master students to understand how such techniques does work.

Sep. 2006– Dec. 2006 **Guest Researcher**
Thermometry laboratory LNE- INM/Cnam, Paris, France
As a part of national institute for standards, I have visited LNE-INM/Cnam to be trained on standerization and identification of the Kelvin unit. During my stay I have constructed the new laser setup that was used in the definition of Kelvin unit research.

Feb. 2003 – April 2007 **Research Assistant**
National institute for standards NIS, Egypt
I conducted research regarding enhancing the calibration and standerization of thermal properties of materials. I conducted new research in material science by preparing thermal seeds that have strong magnetic properties to be used for local hyperthermia treatment for cancer.

HONORS AND AWARDS

2023	Nominated for The New Voices in Sciences, Engineering, and Medicine 2023, USAID, USA.
2023	Recipient of the ''IAAM Scientist Medal'' award by the International Association of Advanced Materials, USA.
2023	New Grant Award Recognition 2023, by Office of Research and Sponsored Projects, UTEP.
2021	New Grant Award Recognition 2021, by Office of Research and Sponsored Projects, UTEP.
2021	Nominated for The Ross Prize in Molecular Medicine
2021	ACUE Course in Effective Teaching, UT-System
2021	Nominated for The Minnie Stevens Foundation Award
11/2019	Finalist of the President's Community Engaged Scholarship Award, UTEP, USA
11/2019	Nominated for 2020 UT Regents' Outstanding Teaching AWARD (ROTA), TX, USA
10/2019	Nominated for 2019 President's Community Engaged Scholarship Award, UTEP, USA
09/2019	Nominated for the 2020 Sloan Research Fellowship, USA
04/2019	Summer Sabbatical Award (Visiting Professor at UT Southwestern Medical center, Dallas, TX, USA), by Building scholars, NIH, 2019.
12/2018	Nominated for 2019 Blavatnik National Awards for Young Scientists, The New York Academy of Sciences, USA
01/2018	International young scientist award, National science foundation in China (NSFC)
10/2009	Best poster prize at the "Summer school of Nanomagnetism", Mülheim/Ruhr, Germany
4/2007	External scholarship grant (Scholarship No.: 2/2/66/2005) by the Egyptian Ministry of high education and scientific research
8/2002	Prize from the Egyptian Ministry of Youth for Computer interfacing applications.

PEER-REVIEWED PUBLICATIONS (74+)

(https://scholar.google.com/citations?hl=en&user=NaYtdQMAAAAJ&view_op=list_works&sortby=pubdate)

Book

- **A. A. El-Gendy,** R. l. Hadimani and J. M. Barandiaran. Magnetic nanostructured materials: From Lab. To Fab. ELSEVIER 2018

Papers

[1] AM Faramawy, H Elsayed, HM Elsayed, AA Sattar, YW Getahun, **A. A. El-Gendy**, H. Kahil. Unveiling the effect of Gd3+ doping on enriching the structural, magnetic, optical, and dielectric properties of biocompatible hematite nanoparticles. Journal of Alloys and Compounds 974, 172845, 2023.

[2] A. Gasser, W. Ramadan, Y. Getahun, M. Garcia, M. Karim, **A. A. El-Gendy**. Feasibility of superparamagnetic NiFe2O4 and GO-NiFe2O4 nanoparticles for magnetic hyperthermia. Materials Science and Engineering: B 297, 116721, 2023

[3] Y. W. Getahun, F. S. Manciu, M. R. Pederson, **A. A. El-Gendy**. Room temperature colossal superparamagnetic order in aminoferrocene–graphene molecular magnets. Applied Physics Letters 122 (24), 2023 **(Highlighted in newsletters as a breakthrough for Room temperature Quantum computers)**

[4] S. Hunagund, J. Rosenberg, S. M. Harstad, S. Gupta, V. Pecharsky, **A. A. El-Gendy**, R. L. Hadimani. T1, T2 and T2* relaxations in MRI based on Gd5Si4 nanoparticles of varying sizes. Authorea Preprints 2023

[5] M. Badawy, Y. Wang, M. Garcia, S. Biswal, **A. El-Gendy.** Developing Alginate-Based Hydrogels for the Delivery of Magnetic Hyperthermia Nanoparticles. Journal of Biological Chemistry 299 (3), S140, 2023

[6] P. N. Anantharamaiah, H. M. Shashanka, S. Srinivasan, D. Das, **A. A. El-Gendy**, C. V. Ramana. Structural, Magnetic, and Magnetostriction Properties of Flexible, Nanocrystalline CoFe2O4 Films Made by Chemical Processing. ACS omega 7 (48), 43813-43819, 2022

[7] Y. W. Getahun, A. A. El-Gendy. Synthesis of Mn-Based Rare-Earth-Free Permanent Nanomagnets. Handbook of Magnetic Hybrid Nanoalloys and their Nanocomposites, 173-202, 2022

[8] D. Das, Y. Getahun, F. S. Escobar, R. Romero, **A. A. El-Gendy**, C.V. Ramana. Unexpected Superparamagnetic Behavior in Nanocrystalline Niobium-Based High Entropy Alloys. Accepted, Journal of Phys Chem C. 2022.

[9] Y. W. Getahun, J. Gardea-Torresdey, F. S. Manciu, X. Li, **A. A. El-Gendy**. Green synthesized superparamagnetic iron oxide nanoparticles for water treatment with alternative recyclability. Journal of Molecular Liquids 356, 118983, 2022

[10] Y. W. Getahun and **A. A. El-Gendy**. (2022) Synthesis of Mn-Based Rare-Earth-Free Permanent Nanomagnets. In: Thomas S., Rezazadeh Nochehdehi A. (eds) Handbook of Magnetic Hybrid Nanoalloys and their Nanocomposites. Springer, Cham. https://doi.org/10.1007/978-3-030-34007-0_43-1

[11] M. Sanad, B. Meneses, D. Plazer, S. Pourmiri, G. Hadjipanayis, **A. A. El-Gendy**. Superparamagnetic Fe@Au core/shell nanoparticles for hyperthermia treatment of cancer. Applied Sciences 11 (14), 6637, 2021.

[12] N. Masunga, B. B. Mambaa, Y. W. Getahun, **A. A. El-Gendy**, K. K. Kefeni. Synthesis of single-phase superparamagnetic copper ferrite nanoparticles using an optimized coprecipitation method. Materials Science and Engineering: B, 272, 115368, 2021.

[13] D. Blazer, Y. Getahun, **A. A. El-Gendy**. Magnetic Nanoparticles Hyperthermia: The past, The present, and The future. Book Chapter 10, John Wiley & Sons, 2021.

[14] M. K. Hamad, Y. Maswadeh, E. Martinez-Teran, **A. A. El-Gendy**, K. A. Ziq. Structural, magnetic, and critical behavior of CrTe 1-x Sb x alloys. The European Physical Journal Plus 136 (5), 1-14, 2021

[15] Z Boekelheide, S Hunagund, ZA Hussein, JT Miller, **AA El-Gendy**, RL Hadimani. Particle size-dependent magnetic hyperthermia in gadolinium silicide micro-and nanoparticles from calorimetry and AC magnetometry. Journal of Magnetism and Magnetic Materials, 519, 167441, 2021.

[16] BP Meneses-Brassea, CM Cyr, I Martinez, CE Botez, **AA El-Gendy**. Facile synthesis of superparamagnetic Fe3O4 nanoparticles at therapeutic temperature range for magnetic hyperthermia therapy. Journal of Nanoparticle Research (Brief Communications), 22. 1, 2020.

[17] NFA Salem, SS Abouelkheir, AM Yousif, BP Meneses-Brassea, SA Sabry, HA Ghozlan, **AA El-Gendy**. Large scale production of superparamagnetic iron oxide nanoparticles by the haloarchaeon Halobiforma sp. N1 and their potential in localized hyperthermia cancer therapy. Nanotechnology (Letter), 32, 09LT01, 2020.

[18] BP Meneses-Brassea, EA Borrego, D Blazer, M Sanad, S Pourmiri, DA Gutierrez, A Varela-Ramirez, GC Hadjipanayis, **AA El-Gendy**. Ni-Cu Nanoparticles and Their Feasibility for Magnetic Hyperthermia. Nanomaterials, 10, 1988, 2020.

[19] M. Kh. Hamad, E. Martinez-Teran, Y. Maswadeh, R. Hamad, E. G. Al-Nahari, A. A. El-Gendy, Kh. A. Ziq. Near Room Temperature Magnetocaloric effect in CrTe1-xSbx Alloys. J. Mag. Mag. Mater. 514, 167171, 2020.

[20] S. Pourmiri, V. Tzitzios, G. C. Hadjipanayis, B. P. Meneses Brassea and **A. A. El-Gendy**. Magnetic properties and hyperthermia behavior of iron oxide nanoparticle clusters. AIP Advances 9, 125033, 2020

[21] Sh. Malvankar, S. Doke, R. Gahlaut, E. Martinez-Teran, **A. A. El-Gendy**, U. Deshpande, Sh. Mahamuni. Co-Doped SnO2 Nanocrystals: XPS, Raman, and Magnetic Studies. Journal of electronic materials 49 (3), 1872, 2020

[22] E. Martinez, A. Cordiero, **A. A. El-Gendy**. Synthesis of CoxC/Co nanoparticles using supercritical condition of ethanol. JOM, 1-4, 2019

[23] M. A. Ahsan, E. Deemer, O. Fernandez-Delgado, H. Wang, M. L. Curry, **A. A. El-Gendy**, J. C. Noveron. Fe nanoparticles encapsulated in MOF-derived carbon for the reduction of 4-nitrophenol and methyl orange in water. Catalysis Communications 130, 105753, 2019

[24] S. Doke, E. Martinez-Teran, **A. A. El-Gendy**, P. Ganguly, S. Mahamuni. Sustained multiferroicity in liquid crystal induced by core/shell quantum dots. Journal of Molecular Liquids 288, 110836, 2019

[25] M. A. Ahsan, V. Jabbari, **A. A. El-Gendy**, M. L. Curry, J. C. Noveron. Ultrafast catalytic reduction of environmental pollutants in water via MOF-derived cu and magnetic Ni nanoparticles encapsulated in porous carbon. In Press, Applied Surface Science, 143608, 2019

[26] S. M. Harstad, A. A. El-Gendy, S. Gupta, V. K. Pecharsky, R. L. Hadimani. Magnetocaloric Effect of Micro- and Nanoparticles of Gd5Si4. JOM 71(9), 1-5, 2019

[27] S. A Makharza, G. Cirillo, O. Vittorio, E. Valli, A. Farfalla, M. Curcio, F. Iemma, F. P. Nicoletta, **A. A. El-Gendy**, G. F. Goya, S. Hampel. Magnetic Graphene Oxide Nanocarrier for Targeted Delivery of Cisplatin: A Perspective for Glioblastoma Treatment. Pharmaceuticals 12 (2), 76, 2019

[28] M. A. Ahsan, O. Fernandez-Delgado, E. Deemer, H. Wang, **A. A. El-Gendy**, M. L. Curry, J. C Noveron. Carbonization of Co-BDC MOF results in magnetic C@Co nanoparticles that catalyze the reduction of methyl orange and 4-nitrophenol in water. Journal of Molecular Liquids, 290, 111059, 2019

[29] M. A. Gabal, K. M. A. Zeid, **A. A. El-Gendy**, M. S. El-Shall. One-step novel synthesis of CoFe2O4/graphene composites for organic dye removal. Journal of Sol-Gel Science and Technology 89 (3), 743-753, 2019

[30] S. M. Harstad, P. Zhao, N. Soin, **A. A. El-Gendy**, S. Gupta, V. K. Pecharsky, J. Luo, R. L. Hadimani. Gd5Si4-PVDF nanocomposite films and their potential for triboelectric energy harvesting applications. AIP Advances 9 (3), 035116, 2019

[31] R. Madugundo, N. V. R. Rao, A. M. Schönhöbel, D. Salazar, **A. A. El-Gendy.** Recent Developments in Nanostructured Permanent Magnet Materials and Their Processing Methods. Magnetic Nanostructured Materials (Chapter 6), Elseveir 2018, 157-198.

[32] **A. A. El-Gendy.** Core/Shell Magnetic Nanoparticles for Biomedical Applications. Magnetic Nanostructured Materials (Chapter 2), Elseveir 2018, 41-58.

[33] H. S. Nair, **A. A. El-Gendy.** Magnetocaloric Effect in Frustrated Magnetic Systems: From Bulk to Nano. Magnetic Nanostructured Materials (Chapter 8), Elseveir 2018, 245-268.

[34] S. Harstad, S. Hunagund, Z. Boekelheide, Z. A. Hussein, **A. A. El-Gendy**, R. L. Hadimani. Gd-Based Magnetic Nanoparticles for Biomedical Applications. Magnetic Nanostructured Materials, (Chapter 5), Elseveir 2018, 137-155.

[35] Y. F. Shang, Y. T. Cao, E. A. Balfour, H. Fu, X. C. Zhong, **A. A. El-Gendy**, R. L. Hadimani, Y. Luo. The effect of Co substitution on the magnetic and magnetocaloric properties of Gd_3Ru. J. Mag. Mag. Mater. 451, 368-372, 2018.

[36] S. G. Hunagund, S. M. Harstad, **A. A. El-Gendy**, S. Gupta, V. K. Pecharsky, R. L. Hadimani. Investigating phase transition temperatures of size separated gadolinium silicide magnetic nanoparticles. AIP Advances 8 (5), 056428, 2018

[37] E. A. Balfour, Y. Shang, Q. Zheng, Y. T. Cao, Hao Fu, **A. A. El-Gendy**, R. L. Hadimani. Multiphase Ho36Co48Al16 alloy featuring table like magnetocaloric effect. J. Mag. Mag. Mater. 467, 108-113, 2018.

[38] F. Syeda, A. Pandurangi, **A. A. El-Gendy**, R. L. Hadimani. Effect of Transcranial Magnetic Stimulation on Demyelinated Neuron Populations. IEEE Transactions on Magnetics, 53 (11), 1-4, 2017.

[39] Z. Boekelheide, Z. A. Hussein, S. M. Harstad, **A. A. El-Gendy**, and R. L. Hadimani. Gd_5Si_4 micro- and nanoparticles for self-regulated magnetic hyperthermia. IEEE Trans. Magnetics, Volume: 53 Issue: 11, 2017

[40] Z. Boekelheide, Z. A. Hussein, S. M. Harstad, **A. A. El-Gendy**, R. Hadimani. Gd_5Si_4 particles for magnetic hyperthermia. Magnetics Conference (INTERMAG), IEEE International, 1-1, 2017

[41] **A. A. El-Gendy**, S. M. Harstad, V. Vijayaragavan, S. Gupta, V. K. Pecharsky, J. Zweit, and R. L. Hadimani. Room temperature ferromagnetic Gd5Si4 nanoparticles as T2 contrast agents for MRI IEEE Magnetics Letters 8, 1-4, 2017

[42] B. Williams, **A. A. El-Gendy**, and E. E. Carpenter. Exchange bias and enhanced anisotropy in Fe3C/CoO core/shell nanoparticles. J. Mag. Mag. Mater. 444, 332-337, 2017

[43] M. Tsui, D. Dreyer, **A. A. El-Gendy**, and E. E. Carpenter. Enhanced Near Room Temperature Magnetocaloric Effect in La0.6Ca0.4MnO3 for Magnetic Refrigeration Application. RSC Advances 7 (74), 46589, 2017

[44] E. A. Balfour, Y. F. Shang, H. Fu, **A. A. El-Gendy**, R. L. Hadimani, Y. Luo. Suppression of Impurity Phases and the Study of Magnetic and Magnetocaloric Properties of Ho_2Co_2Al Intermetallic Compound. J. Mag. Mag. Mater. 443(1), 79-84, 2017

[45] S. Harstad, N. D'Souza, N. Soin, **A. A. El-Gendy**, S. Gupta, V. K. Pecharsky, T. Shah, E. Siores, R. L. Hadimani. Enhancement of β-phase in PVDF Films Embedded with Ferromagnetic Gd5Si4 Nanoparticles for Piezoelectric Energy Harvesting. AIP Advances 7 (5), 056411, 2017

[46] F. Syeda, K. Holloway, **A. A. El-Gendy**, R. L. Hadimani. Computational analysis of transcranial magnetic stimulation in the presence of deep brain stimulation probes. AIP Advances 7 (5), 056709, 2017

[47] F. Syeda, H. Magsood, E. Lee, **A. A. El-Gendy**, D. Jiles, R. Hadimani. Effect of anatomical variability in brain on transcranial magnetic stimulation treatment. AIP Advances, 7, 056711, 2017

[48] M. Abdeen, S. Sabry, H. Ghozlan, **A. A. El-Gendy**, E. E. Carpenter. Microbial-physical Synthesis of Fe and Fe3O4 Magnetic Nanoparticles Using Aspergillus Niger YESM1 and Supercritical Condition of Ethanol. Journal of Nanomaterials, 1-7, 2016.

[49] **A. A. El-Gendy**, S. Hampel, B. Büchner, Rüdiger Klingeler. Tuneable magnetic properties of carbon-shielded NiPt-nanoalloys. RSC Advances 6 (57), 52427, 2016.

[50] B. Williams, D. Clifford , **A. A. El-Gendy**, E. E. Carpenter. Surfactant Mediated Synthesis of FexC Nanostructures with Phase and Morphology Control. J. Appl. Phys. 120 (3), 033904, 2016

[51] B. Leszczynski, G. C. Hadjipanayis, **A. A El-Gendy**; K. Załęski, Z. Śniadecki, A. Musiał, M. Jarek, S. Jurga, A. Skumiel. The influence of oxidation process on exchange bias in egg-shaped FeO/Fe3O4 core/shell nanoparticles. J. Mag. Mag. Mater. 416, 269, 2016

[52] **A. A. El-Gendy**, G. C. Hadjipanayis. Room Temperature Magnetocaloric Effect in $Mn_{1.25}Fe_{1.75}Ga$ Heusler Alloys. J. Alloys and compounds, 665, 319, 2016

[53] M. A. Nour, S. S. Elmorsy, R. B. Saltout, **A. A. El-Gendy**. Fire Behavior of HDPE Composite Based on Modified Clay with Phenol Formaldehyde Silane Resin. Arabian Journal for Science and Engineering, 42(1), 153–162, 2016

[54] **A. A. El-Gendy**, M. Bertino, M. Qian, D. Clifford, S. Khanna, E.E. Carpenter. Experimental evidence for the formation of $CoFe_2C$ phase with colossal magnetocrystalline anisotropy for data storage technology. Applied Physics Letters 106, 213109, 2015

[55] **A. A. El-Gendy**, G. C. Hadjipanayis. Pure Phase $D0_{22}$-Mn_3Ga Nanostructures with High Coercivity. J. Phys. D: Appl. Phys. 48 125001, 2015

[56] **A. A. El-Gendy**, G. C. Hadjipanayis. Nanostructured $D0_{22}$-Mn_2Ga alloys with high magnetization and coercivity. J. Phys. Chem. C, 119 (16), 8898, 2015

[57] D. Clifford, **A. A El-Gendy**, A. Lu, D. Pestov, E.E. Carpenter. Room temperature synthesis of magnetic cobalt nanoparticles in a microfluidic reactor using Hydrazine as reducing agent. J. flow chemistry 4 (3), 148, (2014).

[58] **A. A. El-Gendy**, G. Hadjipanayis. High Coercivity in MnxGa Alloys with the D022 structure. REPM (2014), p.p. 69

[59] O. E. Gouda, S. F. Mahmoud, **A. A. El-Gendy**, A. S. Haiba. Improving the Dielectric Properties of High-Density Polyethylene by Incorporating Clay-Nanofiller. World Journal of Engineering and Technology, 2 (04), 289, (2014)

[60] **A. A. El-Gendy**, G. Hadjipanayis. High Coercivity in Annealed Melt-Spun Mn-Ga Ribbons. IEEE trans. Magn. 50 (11), 1, (2014).

[61] **A. A. El-Gendy**, M. Qian, Z.J. Huba, S.N. Khana, E.E. Carpenter. Colossal Magnetic Anisotropy in Cobalt-carbide Nanoparticles. Applied Physics Letters 104, 023111 (2014)

[62] R.G Mendes, B. Koch, A. Bachmatiuk, **A. A. El-Gendy**, Y. Krupskaya, A. Springer, R. Klingeler, O. Schmidt, B. Büchner, S. Sanchez, M.H Rümmeli. Synthesis and toxicity characterization of carbon coated iron oxide nanoparticles with highly defined size distributions. Biochimica et Biophysica Acta (BBA)-General Subjects, 1840 (1), 160, (2014)

[63] **A. A. El-Gendy**, T. Almaugateeb, E.E. Carpenter. CoxC nanorod magnets: Highly magnetocrystalline anisotropy with lower Curie temperature for potential applications. Journal of magnetism and magnetic materials 348, 136, (2013).

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[71] **A. A. El-Gendy**, E.M.M. Ibrahim, V.O. Khavrus, Y. Krupskaya, S. Hampel, A. Leonhardt, B. Büchner, R. Klingeler. The synthesis of carbon coated Fe, Co and Ni nanoparticles and an examination of their magnetic properties. Carbon, 47, 2821,(2009)

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[74] **A. A. El-Gendy**. Study of thermal properties for some metallic ferromagnetic thermoseeds. Alexandria University, Alexandria, Egypt: M.Sc. Dissertation 2005.

SUBMITTED/ IN PREPARATION

[75] Y. Getahun, **A. A. El-Gendy**. Functionalized Superparamagnetic Magnetite Nanoparticles and their Potential for Magnetic Hyperthermia. Under Review 2023.

[76] Y. Getahun, **A. A. El-Gendy**. Tunable magnetic properties in Fe@CIT core-shell nanoparticles for magnetic hyperthermia and water treatment. Under Review 2023.

PATENTS

- **A. A. El-Gendy**, C. Li. Plasmonic enhanced magnetic nanoparticles hyperthermia. US20210145867A1, 2022
- H. Magsood, C. Serrate, **A. A. El-Gendy**, and R. Hadimani. Brain Phantom using casting and 3D printing. US2019/0057623A1, 2019
- E.E. Carpenter, **A. A. El-Gendy**, S.N. Khanna. High Anisotropy Nanoparticles. US2016/0159653A1, 2016

PROVISIONAL PATENTS

- **A.A. El-Gendy**, E. E. Carpenter, D. M. Hudgins. Method for large scale production of MnGa rare earth free permanent magnets.US 62/278,228
- **A.A. El-Gendy**, E. E. Carpenter, D. M. Hudgins. Method for generating and tuning Curie temperature of ambient magnetocaloric materials for refrigeration technology. US 62/278, 176
- **A.A. El-Gendy**, E. E. Carpenter, D. M. Hudgins. Method for large scale production of FexNy rare earth free Permanent magnets. US 62/278,169
- D. M. Hudgins, E. E. Carpenter, **A.A. El-Gendy**. Production of stable hydrophobic collids from transition metals as lubricant additives. US 62/278, 164

RESEARCH SUPPORT

- **El-Gendy, A. A. (Co-PI),** Roberts, R. (PI), Shim, Y-P (Co-PI), Pederson, M. (Co-PI), Rumpf, R. (Co-PI), Baruah, T. (Co-PI), Lee, J. (Co-PI), ''ADDITIVE MANUFACTURING FOR DIRECTED ENERGY' Sponsored by AIR FORCE OFFICE OF SCIENTIFIC RESEARCH, $1,284,622. (8-15-2023- 8-14-2026)
- **El-Gendy, A. A. (Co-PI),** Ramana, C. V. (PI), Das, D. (Co-PI), ''NRT-PREM PARTNERSHIP BETWEEN STONY BROOK UNIVERSITY, UNIVERSITY OF TEXAS EL PASO, AND NAVAJO TECHNICAL UNIVERSITY' Sponsored by NATIONAL SCIENCE FOUNDATION, $150,000. (9-1-2023- 8-31-2024)
- **El-Gendy, A. A. (PI),** ''NANOTECHNOLOGY CONVERGENCE FOR SUSTAINABLE ENERGY, ENVIRONMENT, CLIMATE CHANGE AND HEALTH'' Sponsored by NATIONAL SCIENCE FOUNDATION, $119,990, (7-1-2023- 6-30-2025)

- **El-Gendy, A. A. (Co-PI),** Cox, M. (PI), Al-Hilal, T. (Co-PI), Nurunnabi, Md (Co-PI), Roy, S. (Co-PI), Kenney, M. (Co-PI), "UTEP/UTMDACC PARTNERSHIP FOR HISPANIC CANCER DISPARITIES RESEARCH," Sponsored by Cancer Prevention and Research Institute of Texas (CPRIT), Texas Regional Excellence in Cancer Award (TREC), $5,881,734.00. (August 31, 2021 - August 30, 2026).
- **El-Gendy, A. A. (Co-PI),** Ramana, C. (PI), Fortier, A. (Co-PI), Li, C. (Co-PI), Li, X. (Co-PI), Sreenivasan, S. T. (Co-PI), ‘’Prem center for energy and biomaterials’ Sponsored by NSF, $3,315,000 (September 1, 2022 – August 31, 2023).
- **El-Gendy, A. A. (PI),** "Conference: US-North Africa Conference: Nanotechnology Convergence for Sustainable Energy, Environment and Health," Sponsored by CBET - Nanoscale Interactions Program, NSF, $118,729.00. (July 1, 2020 - June 30, 2021).
- **El-Gendy, A. A. (PI)** Association of College and University Educators (ACUE) Course in Effective Teaching Practices funded by the University of Texas System and facilitated by the Center for Faculty Leadership and Development (CFLD) at UTEP. UT-System, USA, $1324. (2021-2022).
- **El-Gendy, A. A. (PI)**, "Summer Sabbatical Award," Sponsored by NIH: Building Scholar program at UTEP, NIH: Building Scholar program at UTEP, $14,000.00. (May 27, 2019 - August 3, 2019).
- **El-Gendy, A. A. (Mentor)**, Jansen, S. (PI), "Annual Research Award for Siria Jansen," Sponsored by University of Texas at El Paso, BUILDING SCHOLARS, $43,932.00. (August 2021 - July 2024).
- **El-Gendy, A. A. (Mentor & Co-PI)**, Andujo, Arturo (PI), "Summer Research in Nanomagnetics and biomaterials Lab. for Arturo Andujo," Sponsored by University of Texas at El Paso, SURPASS, $4,300.00. (June 2021 - August 2021).
- **El-Gendy, A. A. (Mentor & Co-PI),** Shear, E. (PI), "Summer Research in Nanomagnetics and biomaterials Lab. for Edith Shear," Sponsored by University of Texas at El Paso, $4,300.00. (June 2021 - August 2021).
- **El-Gendy, A. A. (Mentor),** Shear, E. (PI), ‘’Participation Summer Research Academy Abroad’ University of Texas System Louis Stokes Alliance for Minority $8000. 2021-2022.
- **El-Gendy, A. A. (Mentor),** Shear, E. (PI), ‘’Zeta Tau Alpha Foundation Inez Bryan white, violet endowed Scholarship’ $1800. 2021
- **El-Gendy, A. A. (Mentor),** Anduji, A. (PI), ‘’UTEP Sharp Cook Scholarship’ $2000. 2021-2022
- **El-Gendy, A. A. (Mentor),** Prez, B. (PI), ‘’Terry Foundation Terry Foundation Scholar’’ $100,000. 2021-2025
- **El-Gendy, A. A. (Mentor),** Erives, V. (PI), ‘’Anita Mochen Loya Anita Mochen Loya Scholarship’ $2000. 2021
- **El-Gendy, A. A. (Mentor & Co-PI),** Cordiero, A. (PI), "Summer research fellowship for Anson Cordiero (UG student)," Sponsored by NIH: Building Scholar summer program at UTEP, NIH: Building Scholar summer program at UTEP, $5,000.00. (June 1, 2018 - August 31, 2018).
- **El-Gendy, A. A. (Mentor & Co-PI)**, Ortega, M. (PI), "Summer research fellowship for Megan Ortega (UG student)," Sponsored by NIH: Building Scholar summer, University of Texas at El Paso, NIH: Building Scholar summer, University of Texas at El Paso, $5,000.00. (June 1, 2018 - August 31, 2018).
- **El-Gendy, A. A (PI),** "Raising Stars, UT system," Sponsored by UT-System, $250,000.00. (September 1, 2017 - December 31, 2019).
- **El-Gendy, A. A. (PI),** "Effect of reducing grain size on table like magnetocaloric effect of multiphase alloys," Sponsored by NSF China, NSF China, $27,532.80. (January 1, 2018 - December 31, 2018).

SCIENTIFIC LEADERSHIP

A. RESEARCH HIGHLIGHTS IN THE NEWS

- Phys.org: ''Physicists create powerful magnets to de-freeze quantum computing''
- The Prospector: ''A look inside UTEP physicists' groundbreaking discoveries''
- EL PASO, Texas (KFOX14/CBS4): ''UTEP physicists develop super magnet that could revolutionize quantum computing''.
- UTEP news: ''UTEP Physicists Create Powerful Magnets to De-Freeze Quantum Computing''.
- UTEP news: '' UTEP Awarded $6.1 Million Grant for Cancer Research and Detection''.
- El Paso, INC: '' $6.1M for cancer research, detection''
- KTSM 9 News: ''UTEP awarded $6.1m grant for cancer research''.
- VCU news: "Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''.
- Phys.Org:'' Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''.
- EREAN-EU FP7 Marie-Curie Initial training Network: '' Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets**''.**
- Microscopy and Analysis: '' Nanorods set to reduce world reliance on China''.
- Green Cars Congress:'' Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''
- AZO nano: '' Novel Magnetic Nanoparticles Could be an Alternative to Rare Earth Magnets''.
- NAILD:'' Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''
- Eurek Alert AAAS: 'Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''
- Science Daily: ''Small and Powerful: Pushing the boundaries of nano-magnets''
- ChemEurope.com:''Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''
- SpaceBattels: ''Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets''
- I'Science: '' A NEW SOURCE OF MAGNETIC NANOPARTICLES?''
- Nanowerk: ''Synthesized magnetic nanoparticles that could offer alternative to rare earth magnets''
- New materials News:''New magnetic material reduces US dependency on China''.
- Renewable Energy News:'' Researchers synthesize magnetic nanoparticles that could offer alternative to rare earth magnets.
- Space Daily: ''Magnetic nanoparticles could offer alternative to rare earth magnets''

B.MEMPERSHIP OF PROFESSIONAL ORGANIZATIONS

- Chair/Organizer ''3rd US-Africa conference of Nanotechnology convergence on Energy, Environment, Climate Change, and Health'' January 14-19, 2024, Cairo, Egypt
- Chair/Organizer ''US-NA conference of Nanotechnology convergence on Energy, Environment and Health'' Virtual meeting April 4-9, 2022
- Research Topic Editor ''Multi-Functional Magnetic Nanostructures for Environmental, Energy and Medical Applications'' for Frontiers in Physics (IF:3.56) and Frontiers in Chemistry (IF: 5.221)
- Editorial Advisory board for Surfaces by MDPI
- Member for MSc and PhD external advisory board Alexandria university, Egypt
- Editor, Associate Editor for Current Chinese Science (Field: Electronic and Crystal Structures)
- Editor, Journal Editor for JOURNAL OF HARMONIZED RESEARCH IN APPLIED SCIENCE
- Topic Editor, Journal Editor for Surfaces, MDPI
- Topic Editor, Journal Editor for MPDI Applied Sciences
- Journal, Manuscript Reviewer for ACS applied nano materials
- Journal, Manuscript Reviewer for Journal of magnetism and magnetic materials
- Journal, Manuscript Reviewer for Journal of Nanoparticle research

- Journal, Manuscript Reviewer for Molecules
- Journal, Manuscript Reviewer for Nanomaterials
- Dissertation external committee member for Shaimaa Farid from Cairo University, Egypt
- Associate Editor of Journal ‘’Current Chinese Science (Field: Electronic and Crystal Structures)’’
- Executive Editor of JOURNAL OF HARMONIZED RESEARCH IN APPLIED SCIENCE,
- Member of American Physical Society (APS)
- Member of IEEE.
- Treasurer of IEEE Joint Magnetics Society and EMBS, Richmond Chapter

C.TEACHING COURSES

Department of Physics, University of Texas at El Paso, TX, USA

Spring 2024	BME 6398 - Dissertation
Spring 2024	BME 6399 - Dissertation
Spring 2024	ESE 6398 - Dissertation
Spring 2024	BME 6194 - Doctoral Research
Spring 2024	BME 6294 - Doctoral Research
Spring 2024	BME 6394 - Doctoral Research
Spring 2024	BME 6494 - Doctoral Research
Spring 2024	BME 6594 - Doctoral Research
Spring 2024	BME 6694 - Doctoral Research
Spring 2024	ESE 6396 - Doctoral Research
Spring 2024	ESE 6396 - Doctoral Research
Spring 2024	PHYS 1403 - General Physics I
Spring 2024	BME 5194 - Graduate Research
Spring 2024	BME 5394 - Graduate Research
Spring 2024	PHYS 5396 - Graduate Research in Physics
Spring 2024	BME 5398 - Thesis
Spring 2024	BME 5399 - Thesis
Spring 2024	PHYS 5399 - Thesis
Spring 2024	RSRC 4033 - Undergraduate Research
Fall 2023	ESE 6396 - Doctoral Research
Fall 2023	ESE 6396 - Doctoral Research
Fall 2023	PHYS 5396 - Graduate Research in Physics
Fall 2023	PSCI 2303 - Physical Science I
Fall 2023	PHYS 5398 - Thesis
Fall 2023	PHYS 5399 - Thesis
Fall 2023	RSRC 4033 - Undergraduate Research
Summer 2023	PHYS 4377 - Undergrad Resrch Probs Physics
Spring 2023	ESE 6396 - Doctoral Research
Spring 2023	PHYS 1403 - General Physics I
Spring 2023	BME 5394 - Graduate Research
Spring 2023	PHYS 5396 - Graduate Research in Physics
Spring 2023	PHYS 5371 - Solid State Physics
Spring 2023	PHYS 5399 - Thesis
Spring 2023	RSRC 4033 - Undergraduate Research
Fall 2022	ESE 6399 - Dissertation
Fall 2022	BME 6494 - Doctoral Research
Fall 2022	ESE 6396 - Doctoral Research
Fall 2022	BME 5394 - Graduate Research
Fall 2022	PHYS 5396 - Graduate Research in Physics
Fall 2022	PSCI 2303 - Physical Science I

Fall 2022	BME 5398 - Thesis 13436
Fall 2022	PHYS 5398 - Thesis
Fall 2022	PHYS 4377 - Undergrad Resrch Probs Physics
Fall 2022	RSRC 4033 - Undergraduate Research
Summer 2022	RSRC 4033 - Undergraduate Research
Spring 2022	ESE 6398 – Dissertation.
Spring 2022	BME 6394 - Doctoral Research
Spring 2022	ESE 6396 - Doctoral Research
Spring 2022	ESE 6396 - Doctoral Research
Spring 2022	PHYS 1403 - General Physics I
Spring 2022	PHYS 5396 - Graduate Research in Physics
Spring 2022	PHYS 5371 - Solid State Physics
Spring 2022	PHYS 5398 - Thesis
Spring 2022	PHYS 5399 - Thesis
Spring 2022	PHYS 4177 - Undergrad Resrch Probs Physics
Spring 2022	PHYS 4277 - Undergrad Resrch Probs Physics
Spring 2022	PHYS 4377 - Undergrad Resrch Probs Physics
Spring 2022	RSRC 4033 - Undergraduate Research
Fall 2021	ESE 6396 - Doctoral Research
Fall 2021	ESE 6396 - Doctoral Research
Fall 2021	PSCI 2303 - Physical Science I
Fall 2021	PSCI 3304 - Physical Science II
Fall 2021	RSRC 4033 - Undergraduate Research
Summer 2021	PHYS 1404 - General Physics II
Summer 2021	RSRC 4033 - Undergraduate Research
Spring 2021	ESE 6396 - Doctoral Research
Spring 2021	PHYS 1403 - General Physics I
Spring 2021	PHYS 1403 - General Physics I
Spring 2021	RSRC 4033 - Undergraduate Research
Fall 2020	ESE 6396 - Doctoral Research
Fall 2020	PHYS 5321 - Mechanics
Fall 2020	PSCI 2303 - Physical Science I
Fall 2020	RSRC 4033 - Undergraduate Research
Summer 2020	PHYS 1404 - General Physics II
Summer 2020	RSRC 4033 - Undergraduate Research
Spring 2020	ESE 6396 - Doctoral Research
Spring 2020	PHYS 1404 - General Physics II
Spring 2020	PHYS 4277 - Undergrad Resrch Probs Physics
Spring 2020	PHYS 4377 - Undergrad Resrch Probs Physics
Spring 2020	RSRC 4033 - Undergraduate Research
Fall 2019	PHYS 5396 - Graduate Research in Physics
Fall 2019	PHYS 4353 - Mathematical Physics Methods
Fall 2019	PSCI 2303 - Physical Science I
Fall 2019	PHYS 5399 - Thesis
Fall 2019	RSRC 4033 - Undergraduate Research
Summer 2019	RSRC 4033 - Undergraduate Research
Spring 2019	PHYS 1404 - General Physics II
Spring 2019	PHYS 5393 - Special Topics in Physics
Spring 2019	PHYS 5398 - Thesis
Spring 2019	RSRC 4033 - Undergraduate Research
Fall 2018	PHYS 5396 - Graduate Research in Physics

Fall 2018 PSCI 2303 - Physical Science I
Fall 2018 PHYS 4393 - Special Topics in Physics
Fall 2018 RSRC 4033 - Undergraduate Research
Summer 2018 PHYS 5396 - Graduate Research in Physics
Summer 2018 RSRC 4033 - Undergraduate Research
Spring 2018 PHYS 1404 - General Physics II.
Fall 2017 PHYS 4353 - Methods of Mathematical Phys.
PHYS 201 General Physics I, Department of Physics, Virginia Commonwealth University, VA, USA
EMGN 309 Materials science for Engineers, Department of Mechanical Engineering, Virginia Commonwealth University, VA, USA
PHYS 101 Electricity and Magnetism, Department of Basic Science, Faculty of Engineering, Arab Academy for Science, Technology and Maritime transport, Egypt
PHYS 102 Thermodynamics, Department of Basic Science, Faculty of Engineering, Arab Academy for Science, Technology and Maritime transport. Egypt

D. PROFESSIONAL ACTIVITIES

- Chair of 3rd US-Africa Conference of Nanotechnology Convergence for Environment, Energy, Climate Change and Health. Funded by NSF, USA. January 14-19, 2024, Cairo, Egypt
- Chair of US-NA Conference of Nanotechnology Convergence for Environment, Energy and Health. Funded by NSF, USA. April 4-8, 2022
- Reviewer for NSF grants
- Chair of sessions in magnetism and magnetic materials conferences
- Reviewer for Scientific Journals:
    - ACS Nano, ACS
    - IEEE Magnetics Letters
    - Chemistry communications, ACS
    - Nano: Brief Reports and Reviews, World scientific
    - Journal of Nanoparticle Research, Springer
    - Materials Research Bulletin, Elsevier
    - Advanced Powder Technology, Elsevier
    - The Journal of Physical Chemistry, ACS
    - Journal Molecules, MDPI
    - Arabian journal for science and engineering, Springer
    - Journal of nanoparticles research, Springer
    - Journal of applied physics, JAP

E. COMMITTIES

- Member of department chair hiring committee.
- Member of new tenure track assistant professors hiring committee.
- Member of external thesis committee
- Member of Graduate Counsil Committee.

INVITED TALKS AND LECTURES

2023 Invited speaker ''Magnetic Nanostructured Materials for Hyperthermia Cancer Therapy and diagnosis using MPI'' Department of Imaging Physics, MD Anderson, July 28th, 2023.
2023 Invited Speaker ''Small is beautiful and powerful: The Power of Nanomagnets in Cancer Therapy'' 38th Annual Meeting of the society for thermal medicine, San Diego, California, USA, April 24 – 27, 2023.
2022 Invited Speaker. Public Talk. Series of Egyptian and Proud. National Research Centre, Egypt.

2022 Chair of the 1st Us-NA Conference on Nanotechnology convergence of energy, environment and health. April 4-9, (2022).

2022 Talk ‘’Green synthesized superparamagnetic iron oxide nanoparticles for water treatment with alternative recyclability’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2022 Talk ‘’Tunable magnetic properties in Fe@CIT core-shell nanoparticles for magnetic hyperthermia and water treatment’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2022 Talk’’In vitro studies of magnetic nanoparticles for breast and prostate cancer therapy’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2022 Poster ‘’Fe@Ag-matrix magnetic nanoparticles for hyperthermia cancer therapy’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2022 Poster ‘’Core/Shell superparamagnetic nanoparticles and their potential for magnetic hyperthermia cancer therapy’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2022 Poster ‘’ CoNi magnetic nanoparticles and their potential for water treatment and magnetic hyperthermia’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2022 Poster ‘’ Fe3O4/FeO for Exchange Bias Applications’’ 1st Us-NA Conference on Nanotechnology convergence of energy, environment, and health. April 4-9, (2022).

2021 Invited Speaker. Magnetic Nanostructured Materials: From Lab. to Fab. International Conference on Materials and Systems for Sustainability (ICMaSS). Nagoya University, Japan.

2021 Keynote Speaker. Innovative Multi-Functional Magnetic Nanoparticles for Water, Energy and Health. The 2nd National Research Centre International Conference on Science & Sustainable Development 2021 under the theme Scientific Research, Technology, Innovation for knowledge creation. National Research Center, Egypt.

2021 Keynote Speaker. Innovative Multi-Functional Magnetic Nanoparticles for Water, Energy and Health. The 2nd National Research Centre International Conference on Science & Sustainable Development 2021 under the theme Scientific Research, Technology, Innovation for knowledge creation. National Research Center, Egypt.

2021 Invited Speaker. Magnetic nanostructured materials from lab. to fab. Faculty meeting of Department of Metallurgical, Materials and Biomedical Engineering, The University of Texas at El Paso, USA.

2021 Invited Speaker. Magnetic nanostructured materials from lab. to fab. Egypt Japan University of Science and Technology, Egypt.

2021 Invited Speaker. Public Talk. How to succeed in Scientific Research Abroad. FITS Science Fits All. Facebook group.

2021 Invited Keynote Speaker: United Conference of Nanotechnology and Medicine, United Journals and Conferences, United Pharma LLC, USA

2020 Invited Talk, "Magnetic nanostructured materials from lab. to fab.," National Institute of Standards, Egypt.

2019 Invited Talk, "Magnetic nanoparticles and their medical and industrial applications," Alexandria University, Egypt

2019 Invited Talk at UTEP Physics Seminar, "’’Magnetic Nanoparticles Hyperthermia: The past, the present and the future’’," University of Texas at El Paso, El Paso, TX, USA.

2019 Invited Talk at PhD Seminar UT Southwestern medical center, "Magnetic Nanoparticles Hyperthermia," UT Southwestern medical center, Dallas, TX, USA. (July 2019).

2019 Plenary talk at US-Africa Forum on Nanotechnology Convergence, South Africa

''Magnetic Nanoparticles Hyperthermia: The past, the present and the future''

2019 Plenary talk at US-Africa Forum on Nanotechnology Convergence, South Africa
''Magnetic Nanostructured Materials for permanent magnets and data storage applications''

2019 Talk at APS march meeting, Boston, USA
''Room temperature ferromagnetic MnCr2O4 spinel chromite nanoparticles''

2019 Talk at APS march meeting, Boston, USA
''Superparamagnetic Fe3O4 magnetic nanoparticles and their potential for hyperthermia treatment for cancer''

2019 Talk at Joint MMM-Intermag Conference, Washington DC, USA
''Colossal Second Order Magnetocaloric Effect at Room and High Temperature in MnFe2 Ga Heusler Alloy for Magnetic Refrigeration''

2019 Poster at Joint MMM-Intermag Conference, Washington DC, USA
''New roots for synthesis of Cobalt carbide nanoparticles for rare earth free permanent magnets''

2019 Poster at Joint MMM-Intermag Conference, Washington DC, USA
''Ferromagnetic Gd5Si4-PVDF composite films for triboelectric energy harvesting applications''.

2019 Poster at Joint MMM-Intermag Conference, Washington DC, USA
''Superparamagnetic Fe3O4 Magnetic Nanoparticles: Examination of their Feasibility for Hyperthermia Treatment for Cancer''

2019 Poster at Joint MMM-Intermag Conference, Washington DC, USA
''Size effect: Effective T2 (T2*) of gadolinium silicide (Gd5Si4) ferromagnetic nanoparticles (NPs) for high magnetic field (21.1 T) MRI''

2018 Invited talk at international conference of magnetism (ICM), San Francisco, USA
''Magnetic Nanostructured Materials for Non-biomedical Applications''

2018 Invited talk at PhD seminar, Department of Physics, University of electronic science and technology in China, Chengdu, China
''Magnetic Nanostructured Materials from Lab. To Fab.''

2018 Invited Talk at PhD seminar, Department of Mechanical Engineering, New Mexico State University, USA
'' Magnetic Nanostructured Materials and their Potential for various Applications''

2018 Poster at ICM, San Francisco, USA
''Magnetocaloric effect of ball milled Gd5Si4''

2018 Poster at ICM, San Francisco, USA
''Additive manufacturing of Gd5Si4 under magnetic field''

2018 Poster at ICM, San Francisco, USA
''Table like Magnetocaloric Effect in Ho36Co48Al16 Multiphase Alloy''

2018 Poster at ICM, San Francisco, USA
''Enhanced near room temperature magnetocaloric effect in La0.6Ca0.4MnO3 for magnetic refrigeration application''.

2017 Invited Talk at IEEE El Paso Chapter, University of Texas at El Paso, USA
''Magnetic Nanoparticles from Lab. To Fab.''

2017 Poster at 28th Rare Earth Research Conference, Ames, Iowa, USA
''Enhanced cooling power of ball milled Gd_5Si_4''

2017 Talk at IEEE international magnetics conference, Dublin, Ireland
''Gd_5Si_4 particles for magnetic hyperthermia''

2017 Poster at IEEE international magnetics conference, Dublin, Ireland
''Room temperature ferromagnetic Gd_5Si_4 nanoparticles as T2 contrast agents for MRI''

2017 Poster at IEEE international magnetics conference, Dublin, Ireland
''Gd_5Si_4-PVDF Nanocomposites-Films for Triboelectric Energy Harvesting''

2017 Poster at IEEE international magnetics conference, Dublin, Ireland
''Effect of Transcranial Magnetic Stimulation on Demyelinated Neuron Populations''

2017 Poster at The American Society of Mechanical Engineers (ASME), Conference on Smart Materials, Adaptive Structures, and Intelligent Systems (SMASIS 2017)
''High Speed Imaging of Plasma-Sprayed Abradable Coating Process''

2017 Invited talk at University of Texas El Paso, El Paso, TX, USA
Candidate Seminar ''Magnetic Nanostructured Materials: From Lab. To Fab.''

2017 Invited talk at Lafayette College, Eston, PA, USA
Ph.D. Seminar ''Nanomagnetism: Lab. To Fab.''

2016 EMN-Magnetocaloric Meeting 2016, Orlando, Florida, USA.
Chair of session ''Magnetocaloric materials III''

2016 Invited talk at EMN-Magnetocaloric Meeting 2016, Orlando, Florida, USA.
''Near Room Temperature Magnetocaloric Nanostructured Materials and Thin films''

2016 Poster at American physical society (APS), Charlottesville, VA, USA
''Enhancement of beta phase in PVDF films embedded with ferromagnetic Gd5Si4 nanoparticles for piezoelectric energy harvesting''.

2016 Poster at American physical society (APS), Charlottesville, VA, USA
''Effect of Anatomical Variability in Brain on Transcranial Magnetic Stimulation Treatment''

2016 Poster at American physical society (APS), Charlottesville, VA, USA
''Room temperature ferromagnetic Gd_5Si_4 nanoparticles as T2 contrast agents for MRI''

2015 Poster at American physical society (APS), San Diego, CA, USA
''Magnetic Properties of $MnFe_2Ga$ Heusler Alloys''

2015 Talk at American physical society (APS), San Deigo, CA, USA
''Nanostructured Mn_2Ga Alloys with High Magnetization and Coercivity''

2014 Poster at REPM 2014, Annapolis, MD, USA:
High Coercivity in Mn_xGa Alloys with the $D0_{22}$ structure.

2014 Talk at IEEE international magnetics conference (Intermag 2014), Dresden, Germany
''High Coercivity after a Phase transformation from a DO19 Mn_xGa microrod-like structure to DO22 Mn_xGa nanosphere-like structure in melt-spun ribbons''

2014 Invited talk at University of Alexandria, Egypt.
"Nanomagnets: from Lab. to Fab."

2014 Talk at IEEE international magnetics conference (Intermag 2014), Dresden, Germany
"High Coercivity in Annealed Melt-Spun Mn-Ga Ribbons "

2014 Invited talk at university of Texas San Antonio (UTSA), Texas, USA.
"Nanomagnets: from Lab. to Fab."

2013 Talk at the American physics society in Baltimore, USA.
"Brilliant CoC nanomagnets: highly magnetocrystalline anisotropy for potential applications".

2013 Attendance of 58th conference of magnetism and magnetic materials in Chicago, USA

2012 Poster at Nanotech 2012 conferrence in California, USA:
"Carbon coated FeRu and CoRu nanomagnets and their potential for medical applications"

2011 Talk at the DPG meeting in Dresden, Germany:
"Carbon coated NiPt, CoPt nanoalloys: size control and magnetic properties".

2010 Talk at the int. workshop "Biomedical applications of carbon nanotubes" at Castle Eckberg, Dresden, Germany: "Carbon coated NiPt, CoPt nanoalloys: size control and magnetic properties".

2010 Talk at the EU-Network CARBIO meeting in Szczecin, Poland
"Structural control and magnetic properties of carbon coated nanomagnets".

2010 Talk at the DPG meeting in Regensburg, Germany:
"Synthesis and magnetic properties of carbon-coated FeRu, CoRu, and NiRu nanoalloys".

2009 Poster at the Nanomagnetism Summer school in Mülheim/Ruhr, Germany

"Carbon coated nanomagnets: Magnetic properties and feasibility for hyperthermia ".

2009 Workshop on "Biomedical applications of nanoparticles" in Oxford, UK.
Soft skill training courses: Project management - leading a team - job and grant application.

2009 Poster at the DPG meeting in Dresden, Germany
"Carbon coated Fe, Co and Ni nanoparticles produced by High Pressure CVD and their potential for medical applications".

2005 Invited scientific visit (1 week) to the thermometry and radiometry department, PTB, Berlin, Germany

2003 Invited participant for radiation safety training (National institute for standards, Egypt) (1 week)

2003 Invited participant for statistical uncertainty analysis training (National institute for standards, Egypt) (1 week)