

**Dr. Abeer Esmat Aly**

**Referee and reviewer**



❖ **Personal Data, Current Position and Address**

**Name: Dr. Abeer Esmat Aly**

Assistance Professor, Physics (Theoretical),

Higher Technological Institute, New Heliopolis, Cairo, Egypt

**Address:** 3 Hamed Abdel Aziz, Amal City, Shubra EL-Khiema, Cairo, Egypt.

**Mobile:** 01227142691 – 01008166968

**E-mail:** [abeerresmat782000@yahoo.com](mailto:abeerresmat782000@yahoo.com)

❖ **Scientific Productivity and Impact**

**ORCID:**

<http://orcid.org/0000-0002-9294-2200>

**Researcher ID:**

<http://www.researcherid.com/rid/R-1561-2018>

**URL publons:**

<https://publons.com/a/1382750>

**Google-scholar:**

[https://scholar.google.com/citations?view\\_op=list\\_works&hl=en&user=WlqKCIIAAAAJ](https://scholar.google.com/citations?view_op=list_works&hl=en&user=WlqKCIIAAAAJ)

**Scopus preview:**

<https://www.scopus.com/authid/detail.uri?authorId=23479587900>

❖ **Academic Qualifications**

**2010**

**Degree:** PhD

**Title of Thesis:** Ab initio calculation of electronic and magnetic properties of  $\text{RCO}_5$  compounds.

**Specialization:** Physics -Theoretical Physics.

**Awarding Institution:**

Physics Dept., Faculty of Science, Mansoura University at Damietta, Damietta, Egypt.

**2005**

**Degree:** M.Sc.

**Title of Thesis:** Electronic structure of material using energy band calculation method.

**Specialization:** Solid-State Physics

**Awarding Institution:**

Physics Dept., Faculty of Science, Helwan University, Cairo, Egypt.

2000

**Degree:** B.Sc.

**Graduation Project in B.Sc:**

- **In Physics:** Magnetic properties of some hard magnetic materials.
- **In Computer:** Information system of pursuance scientific and Administrative activities of teaching staff by Database (Microsoft access).
- **Project grade:** Excellent in Computer and Physics.

**Specialization:**

- Computer Science and Physics.

**Awarding Institution:**

Physics Dept., Faculty of Science, Helwan University, Cairo, Egypt.

### ❖ **Academic Experience**

[2024-present]

Higher Technological Institute, New Heliopolis, Cairo, Egypt.

[2023-2024]

Higher Institute of Engineering, Automotive and Energy Technology, new Heliopolis.

[2022-2023]

Seconded to Higher Institute of Engineering, Physics and Mathematics Engineering Department, El-Shorouk Academy.

[2018-2022]

Head of Basic Science Dept., Higher Institute of Engineering and Technology, El-Salam Institute.

[2013-2018]

**Part Time**, Lecturer of computer science, physics and mathematics, faculty of computer sciences & information system, October 6 university

[2017-2022]

basic science Dept. at higher institute of engineering and technology, el salam institute

[2015-2016]

Editorial manager of scientific journal at modern academy

[2013-2016]

Head of faculty affairs for scientific research at modern academy

[2/2011-2016]

Lecturer of physics and mathematics at faculty of computer sciences and management technology (modern academy) in Maadi.

[2013]

part time, lecturer of computer science, physics and mathematics at faculty of computer sciences & information system-October 6 university.

[2012-2013]

part time, lecturer of computer science, mathematics faculty of sciences, computer science and math Dept.,( Suez Canal University) in Suez.

[2010-2013]

Part time - lecturer of mathematics and physics - computer science dept., at Arab Open University (aou).

[2010-2012]

Full time, lecturer of physics, mathematics and computer science -Computer Science Dept., at Higher Institute of Computer and Administrative Sciences (Thebes Academy).

[2010-2012]

Coordinator of the Computer Science Department, Higher Institute of Computer and Administrative Sciences(Thebes Academy)

[2010-2012]

member in commission follow-up and evaluation of performance-Quality Assurance unit at Higher Institute of Computer and Administrative Sciences

	(Thebes Academy).
[2010-2012]	Chairman of the Education and Distance Education in Inventors Association of Egyptian (IAE). The IAE to finance and implement the ideas and devices invented.
[11/2009-1/2010]	Part-time lecturer of physics at Al-Salam higher institute for Engineering & Technology and I have taught the physics materials (heat and the properties of matter). The materials used in the teaching (Serway 7th Edition).
[2/2007- 7/2009]	Part-time teaching assistant of physics and mathematics at Canadian International College (CIC) Institute, Faculty of Engineering, physics department. The materials used in the teaching (Serway 7th Edition).
[1/2001-11/2004]	Part time Instructor at Helwan University, Faculty of science, physics department.

### ❖ Travel abroad

- Participate of attended international conference in Indian entitled: Fifth International Conference on Nanotechnology for better living, ICNBL-2019 Jointly organized by NIT Srinagar and IIT Kharagpur From from 7-11 April 2019.

### ❖ PhD supervisor

- Supervisor on PhD thesis entitled: “The electronic and optical properties of  $\text{CuAl}_x\text{Ga}_{1-x}\text{Te}_2$  thin films” Experimental and theoretical study  
Kassaa Ammar, Benslim Nouredine<sup>3</sup>, Amara Othmani<sup>1</sup>, Lakhdar Bechiri<sup>3</sup>, Abeer E. Aly<sup>4</sup>, A. Shankar

### ❖ Workshops

- [2024 (ICTP)] participated in and completed online the Workshop on Classical and Quantum Machine Learning for Condensed Matter Physics, 19 - 21 June 2024,ICTP
- [2016] participated Workshop in Nanotechnology revolution of scientific research (knowledge-challenges-applications), (national research center),2024
- [2016] Participation in astrophysical atomic processes, Optacity & Cancer treatment with x-rays (MOA between Cairo university and ohio state university) during between (22 oct to 10 Nov) 2016
- [2010] Completing the workshop on (skillful teaching for transformational learning) during between 26-29 december ,2010
- [2015] Nanotechnology: from physics to applications held at 13 November 2015

- International workshop on computational materials science held at American university in Cairo, 17-20 November 2008

### ❖ Egyptian knowledge bank

- CABI Online Training Session on International Publication, under title “Writing Professional Responses to Editor and Reviewers' Reports”, Tuesday, May 28, 2024
- Attended a general training course on Intellectual Property in Egypt from July 6 to September 6, 2020
- attended entitled: Enhance your research with Elsevier 18 jan 2021.
- attended entitled cell press excellence in publishing: discover, network, and practice-cairo university 24 oct 2019
- Nature Research Academies workshop under titled “Successful Pre-submission Strategies”, (Certificate of Completion)
- Nature Research Academies workshop under titled “Effective Post-submission Strategies”, (Certificate of Completion)
- Nature Research Academies workshop under titled “Effective Academic Writing”, (Certificate of Completion)

### ❖ Participate in scientific projects entitled

- **Book: nanotechnology for infections diseases**  
Chapter 23: improvement of COVID-19 diagnostic tools: Nanobiosensors challenges and perspectives
- **Project Title:** Preparation of a Scalable Alcohol-Free Disinfectant Free of Harmful Substances from Organic and Natural Materials Using Nanotechnology as Antivirals Against the Coronavirus Family (Unfunded)

### ❖ Member of the Advisory Committee in journals

- Certificate of reviewing from journal of Advanced Electronic Materials awarded since April 2024(1 review)
- Certificate of reviewing from journal of physics and chemistry of solids awarded since september 2020(1 review)
- Certificate of reviewing from RSC advances –royal society of chemistry journals awarded since 29 may 2020(2 review)

- Certificate of reviewing from journal of physics: condensed matter(IOP publishing) awarded since 7 december 2016(1 review)
- Certificate of reviewing from journal of physics: condensed matter (IOP publishing) awarded between september 2016 and October 2018(4 review)

### ❖ **Member of the referee in international conferences**

- E-Certificate of participation on International e-conference on recent advances in physics& material science 2020(IC-RAPMS2020) held during 9-10 July 2020
- E-Certificate of participation on International web conference on recent advances in science 2020 (IWCAS 2020) held during 30-31 July 2020

### ❖ **Summer and winter schools**

- Certificate of attended international winter school basic of materials science from 8-10 Feb 2020
- Certificate of participation entitled renewable energy summer school held in Cairo from 6-11 July 2019.

### ❖ **Referee in international journals(online)**

- Meta research press journals (<http://htwww.mypress.org/Meta-research-team.aspx>)
- American Journal of Physics and Applications  
(<https://www.sciencepublishinggroup.com/journal/peerreviewers?journalid=622>)

### ❖ **Training courses**

#### **Cairo University, Center for Measurement and Student Evaluation:**

- Attended a training course on "Data Analysis Using Classical Test Theory (CTT) and Item Response Theory (IRT)" in 2020.
- Attended a training course on "Creating and Operating Question Banks" in 2020.
- Attended a training course on "Achievement Tests (Essay and Objective)" in 2020.

## ❖ **Regarding Academic and Community Activities**

I have participated in numerous activities, including:

- **Attended a workshop** on December 28, 2020, organized by the National Committee for Women in Science under the Academy of Scientific Research and Technology. The workshop's theme was "The Role of Women Scientists in Facing the Coronavirus Pandemic and Its Implications."
- **Participated in the first scientific forum** organized by the Arab City for Science, Technology, and Research. The forum was titled "A Future Vision for the Role of Scientific Research in Achieving Sustainable Development in Light of the 2030 Strategy" and was held under the slogan "Innovation and Application" at the Cairo University Conference Hall on November 12, 2019.
- **Attended a workshop** organized by the Industrial Modernization Center and the Ministry of Trade and Industry on November 3-5, 2019. The workshop focused on "Fundamentals of Manufacturing Solar Thermal Heaters."
- **Participated in the Egyptian Women's Forum** on October 26, 2020.

## ❖ **Quality assurance experience**

[2023-present] Vice Quality Manager at technological institute , New Heliopolis.

[2016-2022] coordinator of quality assurance at el salam institute of engineering and technology

[2013-2015] Head of quality assurance unit at Modern academy

[2010-2012] coordinator of quality assurance at Thebes Academy

## ❖ **The area of Research Interested in:**

- Density Functional Theory (DFT).
- Spin-Polarized and Non Spin-Polarized Calculations.
- The Effect of Spin-Orbit Coupling on Magnetic Materials.
- Nanotechnology
- nanomaterial
- magnetism, solid state
- theoretical physics

## ❖ List of Publications

### Publications in Journal

- 1- B. Thapa, A. Shankar, ***Abeer E. Aly***, P.K. Patra, “Study of the mechanical properties of OsS<sub>2</sub> and its enhanced optoelectronic performance under Fe/Ru doping”, Computational and Theoretical Chemistry, (**Accept Manuscript**), 2024, <https://doi.org/10.1016/j.comptc.2024.114496>.
- 2- A.Kassaa<sup>ab</sup> N.Benslim<sup>c</sup> A.Otmani<sup>a</sup> L.Bechiri<sup>c</sup> A.Shankar<sup>d</sup> Abeer E.Aly<sup>e</sup>, “Experimental and theoretical investigation of electronic and optical properties of CuAl<sub>x</sub>Ga<sub>1-x</sub>Te<sub>2</sub>”, Chemical Physics Letters, Available online 9 October 2022, <https://doi.org/10.1016/j.cplett.2022.140086>
- 3- “Nd<sub>2</sub>Fe<sub>14</sub>B and SmCo<sub>5</sub> a Permanent Magnet for Magnetic Data Storage and Data Transfer Technology”, Book: Advanced Materials and Nano Systems: Theory and Experiment - Part 2, Volume 2, 2022. DOI: 10.2174/9789815049961122020012
- 4- B. Thapa a,b, P.K. Patra a, ***Abeer E. Aly***, M. Das, A. Shankar, “Modulation of the optoelectronic properties of CdSe<sub>2</sub>”, Computational Condensed Matter 33 (2022) e00745. <https://doi.org/10.1016/j.cocom.2022.e00745>
- 5- ***Abeer E. Aly***, H. M. Fahmy, H. H. Medina Chanduvi, A. V. Gil Rebaza, B. Thapa, A. Shanka “Electronic Structures and Optical Properties for Nano Particles: Experimental and Theoretical Calculations”, American Journal of Nano Research and Applications, 10(1), 2022, 9-13. (DOI:10.11648/j.nano.20221001.12 2022).
- 6- H. S. Abbas, ***Abeer E. Aly***, H. M. Mohamed, M. A. Nabil, R. M. M. El Sapagh, D. H. Abou Baker, “Improvement of COVID-19 Diagnostic Tools: Nanobiosensors Challenges and Perspectives, Book: Nanotechnology for Infectious Diseases, 2022. (DOI: 10.1007/978-981-16-9190-4\_23)
- 7- Seham K. Abdel-Aala Abeer E. Aly b H. H. Medina Chanduvic Arles V. Gil Rebaza d, E. Atteiaa, A. Shankare, “Magnetic and optical properties of perovskite-graphene nanocomposites LaFeO<sub>3</sub>-rGO: Experimental and DFT calculations”, <https://doi.org/10.1016/j.chemphys.2020.110874> Get rights and content
- 8- M. Ram, A. Saxen, ***Abeer E. Aly***, Amit Shankar, “Half-metallicity in new Heusler alloys Mn<sub>2</sub>ScZ (Z = Si, Ge, Sn)”, RSC Adv., 2020, 10, 7661, (DOI: 10.1039/c9ra09303f).
- 9- M. Ram, A. Saxena, ***Abeer E. Aly***, A. Shankar, “Study of half metallicity, structural and mechanical properties in inverse Heusler alloy Mn<sub>2</sub>ZnSi<sub>(1-x)</sub>Ge<sub>x</sub> and a superlattice”, RSC Adv., 2019, 9, 36680-36689 (DOI: [10.1039/C9RA06903H](https://doi.org/10.1039/C9RA06903H)). <https://pubs.rsc.org/ko/content/articlehtml/2019/ra/c9ra06903h>

- 10- **Abeer E. Aly**, D. P. Rai, “Spin Density for Intermetallic Compounds”, International Journal of Computational Physics Series, 1(1), (2018), 97-101. (DOI: <https://doi.org/10.29167/A111P97-101>).
- Conference: International Conference on Computational Materials Science and Thermodynamic Systems (CMST-2018) (Cambridge University)
- URL: <https://js.nssel.uk/index.php/ijcps/article/view/26>
- 11- **Abeer E. Aly**, D. P. Rai, “A DFT Study of Electronic and Magnetic Properties of Cr<sub>2</sub>O<sub>3</sub> using Spin-Polarized Approach”, International Journal of Computational Physics Series, 1(1), (2018), 1(1), 91-96 (DOI: <https://doi.org/10.29167/A111P91-96>)
- Conference: International Conference on Computational Materials Science and Thermodynamic Systems (CMST-2018) (CAMBRIDGE UNIVERSITY)
- 12- D. P. Rai<sup>1</sup>, Sandeep, A. Shankar, **Abeer E. Aly**, P. K. Patra and R. K. Thapa, “Electronic and Piezoelectric properties of half-Heusler compounds: A first principles study”, Journal of Physics: Conference Series, 765 (2016) 012005. (DOI: 10.1088/1742-6596/765/1/012005).
- 24th Condensed Matter Days National Conference (CMDAYS2016) 29–31 August 2016, Mizoram, India.
- URL: <http://iopscience.iop.org/journal/1742-6596>
- 13- **Abeer E. Aly**, "The effective valence charge and the spin magnetic moment of Nd<sub>2</sub>Fe<sub>14</sub>B using Spin-orbit coupling", International Journal of Computational Physical Sciences. ISSN 0976-5875 Volume 5, Number 2 (2014), pp. 87-94.
- 14- “Density of states of rare-earth permanent magnet Nd<sub>2</sub>Fe<sub>14</sub>B using spin-orbit coupling” by **Abeer E. Aly**, International Journal of Pure and Applied Physics, Vol 5, No. 3, pp. 215-229, (2009).
- 15- Sherif Yehia, Samy H. Aly, **Abeer E. Aly**, “Electronic band structure and spin-density maps of SmCo<sub>5</sub>”, Computational Materials Science, Vol 41, Issue 4, pp. 482-485, (2008) .
- 16- Sherif Yehia, S. Aly, A. S. Hamid, **Abeer E. Aly**, M. Hammam, “Magnetic properties and band structure Calculation of SmCo<sub>5</sub>”, International Journal of Pure and Applied Physics, Vol 2, No. 3, pp. 205-213, (2006).



### **Publications in Conference and Workshop**

- 17- **Abeer E. Aly**, "The electronic band structure of Nd<sub>2</sub>Fe<sub>14</sub>B from first-principles calculations", 5th International Conference on 'Modern Trend of Physics Research, Physics Dept., Faculty of Science, Cairo University to be held at Cairo University& Luxor 15 to 19 Dec.(2014), Conference Proceedings .
- 18- **Abeer E. Aly**, "Spin and Charge Density Maps of Nd<sub>2</sub>Fe<sub>14</sub>B", 5th International Conference on 'Modern Trend of Physics Research, Physics Dept., Faculty of Science, Cairo University to be held at Cairo University& Luxor to be held at Cairo University& Luxor 15 to 19 Dec. 2014, Conference Proceedings .
- 19- **Abeer E. Aly**, "Electronic structure and magnetic properties of the Nd<sub>2</sub>Fe<sub>14</sub>B intermetallic compound", 4th International Conference on 'Modern Trend of Physics Research' MTPR-010 Physics Dept., Faculty of Science, Cairo University ,12– 16 December (2010) – published (2013), Modern Trends in Physics Research: pp. 155-159., doi: 10.1142/9789814504898\_0021
- 20- **Abeer E. Aly**, "Data Mining Challenges in Anti-Money Laundering", International Conference for Faculty of Computers & Information (ICCI'12), During the period 11-12, December 2012.

### **❖ Published Books**

- Ab initi calculation of electronic and magnetic(scholar press 2018(ISBN-13:978-620-231907-2))
- Electronic structure of material (scholar press 2018(ISBN-13:978-620-2-31879-2))

### **❖ Participations & attended on conferences**

- 1- Attended The National Committee of Physics - Academy of Scientific Research and Technology (NCP-ASRT) in collaboration with Nanotechnology Research Center (NTRC), Centre for Theoretical Physics, and Basic Science Department - Faculty of Engineering at the British University in Egypt ,9th -11th September **2024**
- 2- Certificate of participation on (ICMSAP-2021) from November 22-24,2021 held at Pachhunga university (inside Cairo)
- 3- Certificate on attendance the first international symposium for postgraduate students abroad, online entitled (the effect of emerging technology on future formulation) from 24-25 oct 2020(inside Cairo)
- 4- Certificate of participation on fifth international conference entitled (nanotechnology or better living) from 7-11 April 2019 organized by NIT Srinagar and IIT Kharagpur (outside Cairo).

- 5- The 9th International conference on modern trends in physics research (MTPR-014) (15th - 19th of December 2019), Physics Dept., Faculty of Science, Cairo University.
- 6- The 8th International conference on modern trends in physics research (MTPR-014) (15th - 19th of December 2018), Physics Dept., Faculty of Science, Cairo University.
- 7- The 5th International conference on modern trends in physics research (MTPR-014) (15th - 19th of December 2014), Physics Dept., Faculty of Science, Cairo University.
- 8- The 4th international conference on modern trends in Nanotechnology, Biotechnology and Spectroscopy, Tools of success in the coming era” 1-3 March 2012, Cairo – Egypt
- 9- 1st International Conference for Computing and Informatics ICCI '12 egypt, 11th - 13th of December (2012), Helwan University.
- 10- The 4<sup>th</sup> International conference on modern trends in physics research (MTPR-08) (12th - 16th of December 2010) , Physics Dept., Faculty of Science, Cairo University.
- 11- The 3<sup>th</sup> International conference on modern trends in physics research (MTPR-08) (6th - 10th of April 2008) , Physics Dept., Faculty of Science Cairo University.
- 12- International Workshop on Computational Materials Science from [November 17-20, 2008] at the American university in Cairo.
- 13- The 2<sup>nd</sup> International Conference on Modern Trends in Physics Research Cairo, Egypt, [6 - 11 April 2006] Series: AIP Conference Proceedings , Vol. 888.
- 14- 5th Egyptian-Ukranian Workshop on “Nanomaterials and Nanotechnology” From [29-11-2004/2-12-2004].

#### ❖ **Skills:**

##### ❖ **Languages:**

- Arabic: mother language.
- English: very good written and spoken

##### ❖ **Technical Computer Skills:**

###### **Operating System:**

- Dos.
- MS-Windows [95-98-2000-Me-xp-vesta].
- Linux (Red Hat V.9, Enterprise linux).
- MS-Office [95-98-2000-xp-2003]

## ❖ References

**1- Prof.Dr. Dibya Prakash Rai**

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Department of physics

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**2- Prof.Dr. Amit Shankar**

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Department of physics

Kurseong College, Darjeeling, 734203, India

**3- Prof.Dr. Arles V. Gil Rebaza**

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