



Faculty Name

Adel A. Ghoneim

Location

Shuwaikh Campus: Building 20, 2nd Floor, Office: S-150

Phone Number

(+965) 1806611

Email Address

aa.ghoniem@paaet.edu.kw

Education

PhD.	Physics, Univ. of Wisconsin, USA	1989
MSc.	Physics, Univ. of Alexandria, Egypt	1983
BSc.	Physics, Univ. of Alexandria, Egypt	1976

Academic Experience

2017 – Present	Professor, CTS (PAAET), Kuwait
2005 – 2016	Associate Professor, CTS (PAAET), Kuwait
1997 – 2004	Assistant Professor, CTS (PAAET), Kuwait
1995 – 1997	Associate Professor, Univ. of Alexandria, Egypt
1989 – 1994	Assistant Professor, Univ. of Alexandria, Egypt
1987 – 1989	Honorary Research Fellow, Univ. of Wisconsin, USA
1978 – 1983	Teaching & Research Assistant, Univ. of Alexandria, Egypt

Honors & Awards

- July 1991 – Dec. 1991, & June 1993 – Sept. 1993, Research Fellow, Thermodynamic & Heating Institute (ITW), University of Stuttgart, Germany
- March 1995 – August 1995, Research Fellow, Univ. of Wales, Cardiff, UK

Service Activities

- Attended Global Conference on Global Warming, Istanbul, Turkey 6th – 10th July, 2008.
- Attended International Conference on Neutron and X-ray Scattering 2009 (ICNX 2009), Kuala Lumpur, Malaysia 29th June – 1st July, 2009.
- Attended CISBAT 2013 International Conference, EPFL, Lausanne, Switzerland, 4-6 September, 2013.
- Attended International Conference on Renewable Energy Technology, ICRET 2015, Zurich, Switzerland, 29th -30th July, 2015.
- Kuwait International Nanotechnology Conference & Exhibition (KINCE 2016), Kuwait 9th – 11th February, 2016.

Publications

1. **Ghoneim, A.A.**, "Comparison of Theoretical Models of Phase Change and Sensible Heat Storage for Air and Water Based Solar Heating Systems", *Solar Energy*, Vol. 42, No. 3, pp. 209-220, (1989).
2. **Ghoneim, A.A.**, and Klein, S.A., "The Effect of Phase Change Material Properties on the Performance of Solar Air Based Heating Systems", *Solar Energy*, Vol. 42, No. 6, pp. 441-447, (1989).
3. Ammar, A.S.A., Okaz, A.M., and **Ghoneim, A.A.**, "Investigation of Optimum Parameters for Solar Domestic Hot Water System in Alexandria, Egypt ", *Solar & Wind Technology Journal* , Vol. 6, No. 5, pp. 627-632, (1989).

4. Ammar, A.S.A., Okaz, A.M., Sorour, M.M., and **Ghoneim, A.A.**, "Efficient Collection and Storage of Solar Energy", *Solar & Wind Technology Journal*, Vol. 6, No. 6, pp. 643-652, (1989).
5. Ammar, A.S.A., and **Ghoneim, A.A.**, "Optimization of a Sensible Heat Storage Unit Packed with Spheres of a Local Material", *Renewable Energy Journal*, Vol. 1, No. 1, pp. 91-95, (1991).
6. **Ghoneim, A.A.**, Klein, S.A., and Duffie, J.A., "Analysis of Collector-Storage Building Walls Using Phase-Change Materials", *Solar Energy*, Vol. 47, No. 3, pp. 237-242, (1991).
7. Sorour, M.M., Ammar, A.S.A., and **Ghoneim, A.A.**, "The Performance of Collector Storage Wall in Alexandria, Egypt", *International Journal of Solar Energy*, Vol. 10, pp. 217-227, (1991).
8. Ammar, A.S.A., El-Osairy, M.A., and **Ghoneim, A.A.**, "Comparison of Measured and Predicted Performance of Heat Storage Unit Packed with Spheres of a Local Material", *Renewable Energy Journal*, Vol. 2, No. 1, pp. 73-76, (1992).
9. **Ghoneim, A.A.**, "Analysis of the performance of Direct Gain Systems in Alexandria, Egypt", *Renewable Energy Journal*, Vol. 2, No. 4, pp. 485-488, (1992).
10. **Ghoneim, A.A.**, "Solar Industrial Process Heat Potential in Alexandria, Egypt", *International Journal of Solar Energy*, Vol. 11, pp. 177-184, (1992).
11. **Ghoneim, A.A.**, Fisch, N., Ammar, A.S.A., and Hahne, E., "Design of Solar Water Heating System for Alexandria, Egypt", *Renewable Energy Journal*, Vol. 3, No. 6, pp. 577-583, (1993).
12. El-Kassaby, M.M., and **Ghoneim, A.A.**, "Comparison of Measured and Predicted Performance of Different Heat Storage Systems", *Renewable Energy Journal*, Vol. 3, No. 8, pp. 849-856, (1993).
13. El-Shemi, A.M., **Ghoneim, A.A.**, Abdullah, A.H., "Influence of Outer Shell Vacancies on X-Ray Transition Energies and Emissions Rates for Noble Gases", *AMSE Journal*, Vol. 73, No. 3,4, pp. 41-58 (2000).
14. **Ghoneim, A.A.**, Al-Hasan, A.Y., Abdullah, A.H., "Economic Analysis of Photovoltaic Powered Solar Domestic Hot Water Systems in Kuwait", *Renewable Energy Journal*, Vol. 25, pp. 81-100, (2002).
15. Abdullah, A.H., **Ghoneim, A.A.**, Al-Hasan, A.Y., "Assesment Of Grid Connected Photovoltaic Systems in Kuwait Climate", *Renewable Energy Journal*, Vol. 26, pp. 189, (2002).
16. Abdullah, A.H., Abou-Ziyan, H.Z., **Ghoneim, A.A.**, "Thermal Performance of Flat Plate Solar Collector using Various Arrangements of Compound Honeycomb", *Energy Conversion and Management*, Vol. 44, pp. 3093-3112, (2003).
17. Abdullah, A.H., El-Shemi, A.M., **Ghoneim, A.A.**, "Yields of multiply charged ions produced from inner-shell ionization in neural Ne, Ar and Kr Atoms", *Radiation Physics and Chemistry*, Vol. 68, pp. 697-705, (2003).
18. Al-Hasan, A.Y., **Ghoneim, A.A.**, Abdullah, A.H., "Optimizing Electrical Load Pattern In Kuwait Using Grid Connected Photovoltaic Systems", *Energy Conversion and Management*, Vol. 45, pp. 483-494, (2004).

19. **Ghoneim, A.A.**, " Performance Opimization of Solar Collector Equipped with Different Arrangements of Square-Celled Honeycomb", *International Journal of Thermal Sciences*, Vol. 44, No.1, pp. 95-105, (2005).
20. Al-Hasan, A.Y., **Ghoneim, A.A.**, " A New Correlation between Photovoltaic Panels Efficiency and Amount of Sand Dust Accumulated on Their Surfaces", *International Journal of Sustainable Energy*, Vol. 24, No. 4, pp. 187-197, (2005).
21. **Ghoneim, A.A.**, "Design Optimization of Photovoltaic Powered Water Pumping Systems", *Energy Conversion and Management*, Vol. 47, No. 11-12, pp. 1449-1463, (2006).
22. **Ghoneim, A.A.**, Kandil, K.M., Al-Hasan, A.Y., Altouq, M. S., Al-asaad, A.M., Alshamari, L.M., Shamsaldeen, A.A., "Analysis of Performance Parameters of Amorphous Photovoltaic Modules under Different Environmental Conditions", *Energy Science and Technology*, Vol. 2, No. 1, pp. 43-50, (2011).
23. Kandil, K.M., Altouq, M.S., Al-asaad, A.M., Alshamari, L.M., Kadad, I.M., **Ghoneim, A.A.**, " Investigation of the Performance of CIS Photovoltaic Modules under Different Environmental Conditions, *Smart Grid and Renewable Energy*, Vol. 2, No. 4, pp. 375-387 , (2011).
24. **Ghoneim, A.A.** , Kadad, I.M., Altouq, M.S." Statistical Analysis of Solar UVB and Global Radiation in Kuwait", *Energy Journal*, Vol. 60, pp. 23-34, (2013).
25. **Ghoneim, A. A.**, Mohammedein, A.M. " Parabolic Trough Collector Performance in a Hot Climate" *Journal of Energy Engineering*, Vol. 142, No. 1, 04015008, (2016).
26. Ali AlAjmi, Hosny Abou-Ziyan, **Adel Ghoneim**, "Achieving Annual and Monthly Net-Zero Energy of Existing Building in Hot Climate", *Applied Energy*, Vol. 165, pp. 511-521, (2016).
27. **Ghoneim, A. A.**, Mohammedein, A.M. "Experimental and Numerical Investigation of Combined Photovoltaic-Thermal Solar System in Hot Climate ", *British Journal of Applied Science & Technology*, Vol. 16, No.3, pp. 1-15, (2016).
28. Talal H. Alzanki, T. H., Kandil, M. K., Jeynes, C., Sealy, B. J., Alenezi, M. R., Almeshal, A., Aldukhan, N., **Ghoneim, A. A.**, " High Resolution Medium Energy ion Scattering Analysis for Investigating UltraShallow Junction of Antimony Implanted in Conventional Silicon", *Journal of Materials Science and Engineering*, A 6 (1-2), pp. 17-22, (2016).
29. **Ghoneim, A. A.**, " Performance Optimization of Evacuated Tube Collector for Solar Cooling of a House in Hot Climate", *International Journal of Sustainable Energy*, Vol. 37, No. 2, (2018).
30. **Ghoneim, A. A.** , Kandil, M.K., Alzanki, T.H., Alenezi, M. R. "Performance Analysis of High Concentrated Multi-Junction Solar Cells in Hot Climate", *International Journal of Sustainable Energy*, Vol. 37, No.3, (2018).
31. Adel M. Mohammedein, **Adel A. Ghoneim**, Ashraf H. El-Essawy. Interaction effect on the magnetic properties of synthetically charged boson atoms in 2D deep optical lattice. *Physica B: Condensed Matter*, Volume 550, (2018).
32. **Adel A. Ghoneim**, Haitham A. Alabdulali. " Simulation and performance analysis of reverse osmosis water desalination system operated by a high

concentrated photovoltaic system", Desalination and Water Treatment, Vol. 177, pp. 29-39, 2020.

33. Ibrahim M. Kadad, A. A. Ramadan, Kandil. M. Kandil, **Adel. A. Ghoneim** Relationship between Ultraviolet-B Radiation and Broadband Solar Radiation Under All Sky Conditions in Kuwait Hot Climate. **Energies**, Volume 15, 3130 (2022). <https://doi.org/10.3390/en15093130>.
34. Kandil M. Kandil, Ibrahim M. Kadad, Adel A. Ghoneim, Reem S. Altawash. Analysis of HCPV-LIB integrated hybrid system for renewable energy generation in Kuwait hot climate. Sustainable Energy Technologies and Assessments, Volume 53, Part B, October (2022), 102594.
35. Adel M. Mohammedein, Adel A. Ghoneim, Reem S. Altawash. Superfluidity nature of interacting rotating ultracold boson atoms trapped in an optical potential that overlaps with a harmonic potential. **Physica B: Condensed Matter**, Volume 673, (2024).
36. Kandil M. Kandil, Haitham A. Alabdulali, Ibrahim M. Kadad, **Adel A. Ghoneim**. Electric Vehicle Charging Station Utilizing High Concentrated Photovoltaic System Combined with Lithium-Ion Batteries. **European Journal of Sustainable Development**, Volume 14, (2025).

Professional Development Activities

1. **Project Title:** "Testing Flat Plate Solar Collectors Equipped with Advanced Glazing Materials in Kuwait Climate"
Research Team : Dr. Ali Hussein Abdullah, Dr. Adel Ghoneim
Support Organization: Kuwait Foundation for the Advancement of Sciences (KFAS)
Period : 1999- 2002.
2. **Project Title:** "Performance Analysis of Combined Photovoltaic-Thermal Collector in Kuwait Climate"
Project No.: TS- 06 - 11
Research Team: Dr. Adel Ghoneim, Mr. Modhar Aljanabi, Dr. Adel Mohammedein, Dr. Ahmad Yakoop Al-Hasan.
Support Organization: Public Authority for Applied Education and Training (PAAET)
Period : 2007- 2008.
3. **Project Title:** "Performance Analysis of Crystalline and Amorphous Silicon Solar Modules in Kuwait Climate"
Project No.: TS- 08- 01
Research Team : Mr. Majida Altouq, Asma Al-asaad, Latifa Alshamari, Dr. Kandil Mohamed Kandil, Dr. Adel Ghoneim.
Support Organization: Public Authority for Applied Education and Training (PAAET)
Period : 2008 – 2010.
4. **Project Title:** "Assessment of the Performance of Thin-Film PV Devices in Kuwait Climate"
Project No.: TS- 08- 02



Research Team: Dr. Kandil Mohamed Kandil, Mr. Jasem Elzanki, Dr. Adel Ghoneim, Dr. Ahmad Al-Hasan, Altaf Shamsaldein.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2008 – 2010.

5. **Project Title:** "Study of Atomic Transitions and Production of Charged Ions after Inner-Shell Ionization in Various Atoms"

Project No.: TS- 08- 04

Research Team: Dr. Adel Mohammedein, Dr. Adel Ghoneim, Mr. Jasem Al-Zanki, Mr. Ashraf El-Essawy.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2008 – 2009.

6. **Project Title:** "Experimental and Theoretical Evaluation of Global and Ultraviolet Solar Radiation in the Kuwait Climate"

Project No.: TS–09-12

Research Team: Dr. Ibrahim Kadad, Mr. Majida Altouq, Dr. Adel Ghoneim.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2009 – 2012.

7. **Project Title:** "Assessment of Parabolic Trough Collector Performance in Kuwait Climate"

Project No.: TS- 11- 09

Research Team: Dr. Adel Ghoneim, Dr. Adel Mohammedein.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2012 – 2014.

8. **Project Title:** "Evaluation of Magnetic Properties for the Synthetically Charged Bose Gases Employing Modified Semi-Classical Approximations"

Project No.: TS-17-01

Research Team: Dr. Adel Mohammedein, Dr. Adel Ghoneim, Mr. Ashraf El-Essawy

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2017 – 2018.

9. **Project Title:** "Optimization of Grid Connected High Concentrated Photovoltaic Systems for Peak Load Shaving in Kuwait"

Project No.: TS-17-07

Research Team: Talal Alzanki, Kandil Mohamed Kandil, Mohammad Alenezi, Adel Ghoneim.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2017 – 2018.

10. **Project Title:** "Analysis of Reverse Osmosis Water Desalination System Powered by High Concentrated Photovoltaic System in Kuwait Climate Conditions"

Project No.: TS-18-02

Research Team: Adel Ghoneim, Haitham Alabdulali.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period : 2018 – 2019.

11. **Project Title:** "Analysis of High Concentrated Photovoltaic Modules Integrated with Battery Storage System in Hot Climate"

Project No.: TS-19-04

Research Team: Dr. Kandil M. Kandil, Ibrahim Kadad, Adel Ghoneim, Mrs. Reem Altawash.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2019 – 2020.

12. **Project Title:** "Superfluidity nature of synthetically charged condensate boson atoms in 2D periodic potential"

Project No.: TS-19-06

Research Team: Dr. Adel Mohammedein, Dr. Adel Ghoneim, Mrs. Reem Altawash.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2019 – 2020.

13. **Project Title:** "Thermal properties and superfluidity nature of the three-dimensional optical lattice"

Project No.: TS-22-06

Research Team: Dr. Adel Mohammedein, Dr. Adel Ghoneim, Mrs. Reem Altawash.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2022 – 2023.

14. **Project Title:** "Optimal Electric Vehicle Fast Charging Station Utilizing High Concentrated Photovoltaic System Integrated with Storage Lithium-Ion Battery"

Project No.: TS-23-04

Research Team: Dr. Kandil M. Kandil, Mr. Haitham Alabdulali, Dr. Ibrahim Kadad, Dr. Adel Ghoneim.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2023 – 2024.



15. **Project Title:** "Performance and Economical Analysis of Solar-Assisted Heat Pump Operated by Hybrid High Concentrated Photovoltaic-Thermal Collectors in Hot Climate"

Project No.: TS-24-11

Research Team: Dr. Kandil M. Kandil, Mr. Haitham Alabdulali, Dr. Ibrahim Kadad, Dr. Adel Ghoneim.

Support Organization: Public Authority for Applied Education and Training (PAAET)

Period: 2024 – 2025.

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