Personal Information

Name	Ahmed Hammad
Date of birth	13.02.1982
Nationality	Egyptian
Official E-mail	a_hammad@zu.edu.eg
Alternative E-mail	a_hammad_82@yahoo.com
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Education

2017-Present

Associate Professor
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.

08.2013 – 11.2013

Visiting Research
Place: School of materials, Manchester University, UK

2010-2017

Assistant Professor
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.

2007-2010

PhD. degree
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.
Thesis title: **"Effect of Ag, In and Cu additions on the physical properties of Sn-9Zn lead free solder alloys"**.

2004- 2007

Master degree
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.
Thesis title: "**Microstructure and Mechanical Properties of some Lead-Free Solder Alloys in Relation to Thermal Deformation**".

2003- 2004

Advanced premaster studies.
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.
Attended courses:
1- Laser & Nonlinear Optics.
2- Plasma, Atomic and Molecular Spectroscopy.

3- Superconductivity & Magnetism.
4- Quantum Mechanics.
5- Solid State Physics.
6- Electronics.
7- Crystallography.
8- Alloys & Minerals.
9- Semiconductors.

1999- 2003 **Bachelor degree in Physics**
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.
Qualification: very good with honor grade.

Work Experience

10.2017- Present **Associate Professor**
Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.
& College of Engineering, University of business and technology, Kingdom of Saudi Arabia.
Tasks summary:
Scientific and research activity in Material science, Nanotechnology. Publishing Journal Articles & Participating in academic conference, mentoring & teaching practical courses for Bachelor, PhD. and Master students.

09.2019- Present **Associate Professor**
Place: Jeddah International College, Kingdom of Saudi Arabia.
Tasks summary:
Scientific and research activity in Material science, Nanotechnology. Publishing Journal Articles & Participating in academic conference, mentoring & teaching practical courses.

09.2019- Present **Head of General Science department, Head of Academic Affairs and Academic Advising**
Place: Jeddah International College, Kingdom of Saudi Arabia.

10.2017- 09.2019 **Associate Professor**
Place: College of Engineering, University of business and technology, Kingdom of Saudi Arabia.
Tasks summary:
Scientific and research activity in Material science, Nanotechnology. Publishing Journal Articles & Participating in academic conference, mentoring & teaching practical courses.

01.09.2014- 10.2017 **Assistant Professor**

Place: College of Engineering, University of business and technology, Kingdom of Saudi Arabia.

Tasks summary:

Scientific and research activity in Material science, Nanotechnology. Publishing Journal Articles & Participating in academic conference, mentoring & teaching practical courses.

12.2013- 08.2014 **Assistant Professor**

Place: higher institute of engineering and technology, Zagazig, Egypt.

Tasks summary:

Scientific and research activity in Material science, Nanotechnology. Publishing Journal Articles & Participating in academic conference, mentoring & teaching practical courses.

10.2010- 11.2013

Assistant Professor

Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.

Tasks summary:

Scientific and research activity in Material science, Nanotechnology. Publishing Journal Articles & Participating in academic conference, mentoring & teaching practical courses for Bachelor, PhD. and Master students (i.e. Optics, Electronics, Heat, crystallography, Electricity, Research, Magnetism, Statistics, Thermodynamics, Dynamics, Mechanics, Materials Science, Engineering statics, Statics, Advanced electronics, advanced statistics, Quantum Mechanics, Atomic, advanced atomic and Waves).

12.2008- 09.2010

Lecturer

Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.

Tasks summary:

Scientific and research activity in Physics, metallurgy, nanotechnology, soldering, material science, nanosolder alloys, Research and teaching physics practical courses such as (i.e. Optics, Electronics, Heat, crystallography, Electricity, Research, Magnetism, Statistics, statics, Advanced electronics, advanced statistics, Quantum Mechanics, Atomic, advanced atomic and Waves) for undergraduate students.

11.2003-12.2008

Demonstrator

Place: Department of Physics, Faculty of Science, Zagazig University, Zagazig, Egypt.

Tasks summary:

Scientific and research activity in Physics, metallurgy,

nanotechnology, soldering, material science, nanosolder alloys, and teaching physics practical courses such as (i.e. Optics, Electronics, Heat, Electricity, Statistics, Magnetism and Waves) for undergraduate students.

Used Techniques

1- Transmission Electron Microscope (TEM).
2- Scanning Electron Microscope (SEM).
3- Atomic Force Microscopy (AFM).
4- X-ray diffraction (XRD).
5- Differential scanning calorimeter (DSC)
6- Differential thermal analysis (DTA)
7- Force Sensor Measurement set up.
8- Optical Microscope (OM).
9- Tensile-Testing machine.

Skills

Languages
Arabic (Native Speaker).
English (Professional level).
IT SKILLS
1- Origin Lab data analysis.
2- Science Workshop program.
3- Adobe photo-shop program.
4- SPSS Program.
5- Data studio program
6- Latex.
7- Microsoft Office professional (ICDL Certificate).

Publications

1. "Synergistic effect of MWCNT addition on the thermal and elastic properties of Sn-5Sb-0.3Cu alloy"N. A.M. Eid, A. M. Attia, A.A. Ibrahiem, **A.E. Hammad,** Journal of Materials Science: Materials in Electronics (2023), Accepted for publication, DOI: 10.1007/s10854-023-11620-2
2. "Optimization of creep and thermal features of the Sn-Ag-Cu-Zn alloy by the magnetic field" **A. E. Hammad,** Sara El-Molla, M. Ragab, Microelectronics Reliability (2023), https://doi.org/10.1016/j.microrel.2023.114951
3. "Exceptional strength-ductility synergy of Ni and Co-Mg-La ferrite nanoparticles reinforced Sn-1Ag-0.5Cu matrix composite" N. A. Eid, A. A. El-Daly, **A. E. Hammad**, A. A.

Ibrahiem Physica Scripta (2023), https://doi.org/10.1088/1402-4896/acf0ff

4. "Impact of rotating magnetic field on the microstructure, thermal properties, and creep behavior during the solidification of Sn–2.0 Ag–0.5 Cu solder alloy" **A. E. Hammad**, Sara El-Molla, and M. Ragab, Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications (2022), https://doi.org/10.1177/14644207221111453
5. "Progress on microstructure features and creep properties of prospective Tin-Silver-Zinc alloy using a magnetic field" **A. E. Hammad**, Sara El-Molla, A. F. Abd El-Rehim and M. Ragab, Mater. Res. Express 8 (2021) 086506, https://doi.org/10.1088/2053-1591/ac1c35
6. "Achieving microstructure refinement and superior mechanical performance of Sn-2.0 Ag-0.5 Cu-2.0 Zn (SACZ) solder alloy with rotary magnetic field" **A.E. Hammad**, M. Ragab, Microelectronics Reliability 113 (2020) 113932, https://doi.org/10.1016/j.microrel.2020.113932
7. "Advancement solidification microstructure and mechanical properties of Sn–2.0 Ag–0.5 Cu alloy by applying a rotary magnetic field" **A.E. Hammad**, M. Ragab, Journal of Materials Science: Materials in Electronics 30 (2019) 18838-18847, https://doi.org/10.1007/s10854-019-02240-w
8. "Impact of permanent magnet stirring on dendrite growth and elastic properties of Sn–Bi alloys revealed by pulse echo overlap method" A.A. El-Daly, A.A. Ibrahiem, **A.E. Hammad,** Journal of Alloys and Compounds 767 (2018) 464-473, https://doi.org/10.1016/j.jallcom.2018.07.122
9. "Study The Properties of Sintered Al-Composites Matrix Reinforced With Nano-Al Oxide And/Or Carbon Nano Tubes" **A. E. Hammad**, M. Ragab, Yasser M. R. AboelMagd and M. Amin, Journal Of Advances In Physics 14 (2018) 5741 – 5752,

DOI: 10.24297/jap.v14i3.7602

10. "Enhancing the ductility and mechanical behavior of Sn-1.0Ag-0.5Cu lead free solder by adding trace amount of elements Ni and Sb" **A. E. Hammad**, Microelectronics Reliability 87 (2018) 133–141, https://doi.org/10.1016/j.microrel.2018.06.015
11. "Enhancement of Fluorescence and Photostability Based on Interaction of Fluorescent Dyes with Silver Nanoparticles for Luminescent Solar Concentrators" Sara El-Molla, A. F.Mansour, and **A. E. Hammad**, Journal of Nanomaterials 2017 (2017) Article ID 9701251, 13 pages, https://doi.org/10.1155/2017/9701251
12. "Enhancing the microstructure and tensile creep resistance of Sn-3.0Ag-0.5Cu solder alloy by reinforcing nano-sized ZnO particles" **A. E. Hammad**, A. A. Ibrahiem, Microelectronics Reliability 75 (2017) 187–194, http://dx.doi.org/10.1016/j.matdes.2013.06.023
13. "Nano-Lead free solder alloys for electronic packaging and integration" **A. E. Hammad**, Sara El-Molla, International Journal of Materials Engineering and Technology 15 (2016) 23-62, http://dx.doi.org/10.17654/MT015010023
14. "Chapter: Microstructure and mechanical behavior of eutectic Sn–Zn solder alloys" **Ahmed Hammad**, 11/2014; LAP LAMBERT Academic Publishing., ISBN: 978-3-659-63834-3
15. "Mechanical Deformation Behavior of Sn-Ag-Cu Solders with Minor Addition of 0.05 wt.% Ni" **A. E. Hammad**, A. M. El-Taher Journal of Electronic Materials 43 (2014) 4146-4157, DOI: 10.1007/s11664-014-3323-y
16. "Properties enhancement of low Ag-content Sn–Ag–Cu lead-free solders containing small amount of Zn" A. A. El-Daly, **A. E. Hammad**, G.S. Al-Ganainy, M. Ragab, Journal of Alloys and Compounds 614 (2014) 20-28, http://dx.doi.org/10.1016/j.jallcom.2014.06.009
17. "Influence of Zn addition on the microstructure, melt properties

and creep behavior of low Ag-content Sn–Ag–Cu lead-free solders" A.A. El-Daly, **A. E. Hammad**, G.S. Al-Ganainy, M. Ragab, Materials Science and Engineering: A 608 (2014) 130-138, http://dx.doi.org/10.1016/j.msea.2014.04.070

18. "Design of lead-free candidate alloys for low-temperature soldering applications based on the hypoeutectic Sn–6.5 Zn alloy" A.A .El-Daly, **A. E. Hammad**, G.S. Al-Ganainy, A.A. Ibrahiem, Materials & Design 56 (2014) 594-603, http://dx.doi.org/10.1016/j.matdes.2013.11.064
19. "Enhancing mechanical response of hypoeutectic Sn–6.5Zn solder alloy using Ni and Sb additions" A.A. El-Daly, **A. E. Hammad**, G.A. Al-Ganainy, A.A. Ibrahiem, Materials and Design 52 (2013) 966–973, http://dx.doi.org/10.1016/j.matdes.2013.06.023
20. "Evolution of microstructure, thermal and creep properties of Ni-doped Sn–0.5Ag–0.7Cu low-Ag solder alloys for electronic applications" **A. E. Hammad**, Materials and Design 52 (2013) 663-670, http://dx.doi.org/10.1016/j.matdes.2013.05.102
21. "Investigation of microstructure and mechanical properties of novel Sn-0.5Ag-0.7Cu solders containing small amount of Ni" **A. E. Hammad**, Materials and Design 50 (2013) 108–116, https://doi.org/10.1016/j.matdes.2013.03.010
22. "Microstructure, mechanical properties, and deformation behavior of Sn-1.0Ag-0.5Cu solder after Ni and Sb additions" A.A. El-Daly, **A. E. Hammad**, A. Fawzy and D. A. Nasrallh, Materials and Design 43 (2013) 40– 49, http://dx.doi.org/10.1016/j.matdes.2013.03.010
23. "Enhancement of creep resistance and thermal behavior of eutectic Sn-Cu lead-free solder alloy by Ag and In-additions" A. A. El-Daly and **A. E. Hammad**, Materials and Design 40 (2012) 292–298, http://dx.doi.org/10.1016/j.matdes.2012.04.007
24. "Development of high strength Sn–0.7Cu solders with the addition of small amount of Ag and In" A. A. El-Daly and **A.**

E. Hammad, J. Alloys and Compounds 509 (2011) 8554-8560, doi:10.1016/j.jallcom.2011.05.119

25. "Structural and elastic properties of eutectic Sn–Cu lead-free solder alloy containing small amount of Ag and In" A. A. El-Daly, Farid El-Tantawy, **A. E. Hammad**, M. S .Gaafar, E. H. El-Mossalamy, A. A. Al-Ghamdi, J. Alloys and Compounds 509 (2011) 7238-7246, doi:10.1016/j.jallcom.2011.01.062
26. "Elastic properties and thermal behavior of Sn-Zn based lead-free solder alloys" A. A. El-Daly and **A. E. Hammad**, J. Alloys and Compounds 505 (2010) 793-800, doi:10.1016/j.jallcom.2010.06.142
27. "Effects of small addition of Ag and/or Cu on the microstructure and properties of Sn–9Zn lead-free solders" A. A. El-Daly and **A. E. Hammad**, J. Materials Science and Engineering A 527 (2010) 5212–5219, doi:10.1016/j.msea.2010.04.078
28. "Creep properties of Sn–Sb-based lead-free solder alloys" A. A. El-Daly, Y. Swilem, **A. E. Hammad**, J. Alloys and Compounds 471 (2009) 98–104, doi:10.1016/j.jallcom.2008.03.097
29. "Influences of Ag and Au Additions on Structure and Tensile Strength of Sn-5Sb Lead Free Solder Alloy" A. A. El-Daly, Y. Swilem and **A. E. Hammad**, J. Mater. Sci. Technol., 24, (2008) 921-925.

Conferences

1. The 10th Gulf Education and Exhibition Conference " Mega trends in education towards green economy" 24-25 February 2019, College of Engineering, UBT, Jeddah, KSA.
2. The 7th Gulf Education and Exhibition Conference 20-21 February 2018, College of Engineering, UBT, Jeddah, KSA.
3. A conference on Security and safety in the use of laboratory tools, in Faculty of Science, Zagazig University, Egypt, 2004.
4. Conference "Physics in 100 years", Faculty of Science, Zagazig university, Egypt) 2005.
5. 10th International school and workshop of crystallography "The Role of Synchrotron Radiation in Advancement of

Materials Sciences 1-9 February Gulf of Suez (Red Sea), Ain Soukhna, Egypt, 2009

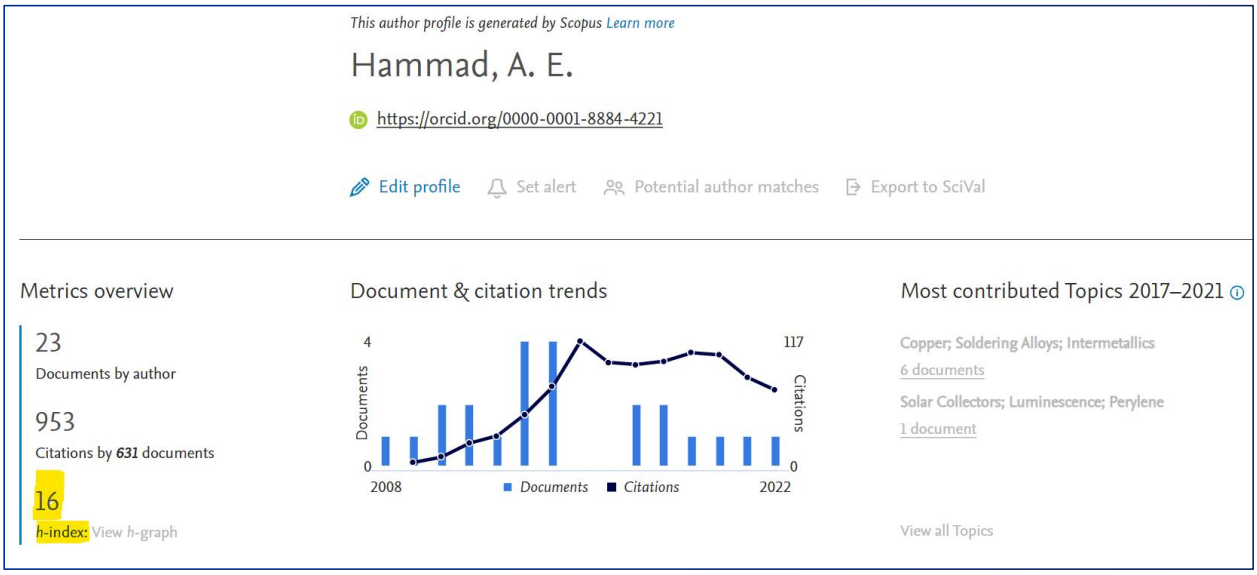
Scientific research activities

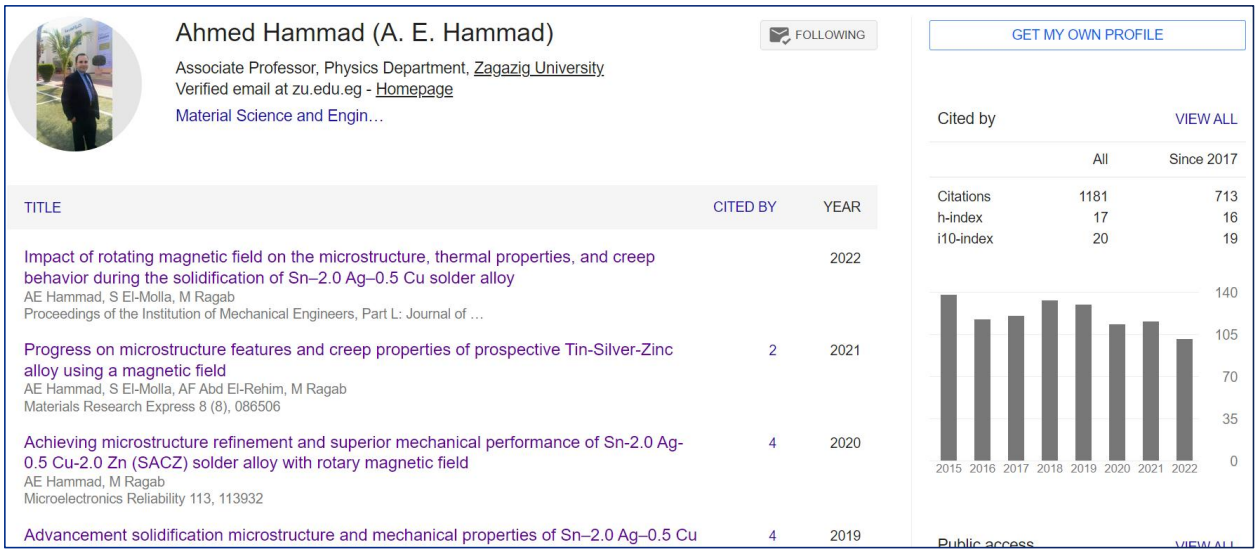
1. **<u>Reviewer in International journals:</u>**
   - ❖ Journal of Electronic Materials (JEMS).
   - ❖ Journal of Alloys and Compound (JALCOM).
   - ❖ Reviewer in 2015 International Conference on Engineering
   - ❖ Science and Management (ESM 2015) September 5-6, 2015, Bangkok, Thailand.
   - ❖ Scientific & Academic Publishing (SAP).
   - ❖ Metallic material journal Slovenia.

2. "Member in the Egyptian Society of Crystallography and its Applications (Esca)".
3. Supervisor 2 PhD. Students and 1 Master students.
4. Editorial board: Universal Journal of Materials Science
5. Listed in the Stanford University (California, USA) "Ranking of the World Scientists: World's Top 2% Scientists". The 2% of the most influential in the world in their scientific career in 2020.

169158	Whittle, Jeff	Medical College of Wisc	usa	136	1990	2021	249,458	642	12	3.9785	10	3	37	45	71	172
169159	Schröder, Leif	Leibniz-Institut für Mole	deu	63	2003	2021	249,470	232	8	4.2290	3	17	14	49	46	158
169160	Revilla-Leon, Marta	University of Washingto	esp	50	2017	2021	249,475	279	10	5.2690	0	0	33	230	47	267
169161	Franceschetti, Massimo	The Electrical and Compu	usa	154	2001	2021	249,481	603	8	4.5595	11	5	40	46	93	198
169162	Mateos, Gonzalo	University of Rochester	usa	83	2007	2021	249,488	474	12	5.2083	0	0	18	144	35	180
169163	Hammad, A. E.	Zagazig University	egy	21	2008	2020	249,489	140	8	5.8333	3	28	7	36	15	96
169164	Achtziger, Wolfgang	Friedrich-Alexander-Uni	deu	27	1992	2013	249,492	100	6	4.7500	8	37	22	100	25	100
169165	Shichibu, Yukatsu	Hokkaido University	jpn	34	2002	2021	249,498	386	12	4.9111	0	0	11	167	13	216
169166	Burke, Robert E.	VA Medical Center	usa	67	2013	2021	249,509	326	11	4.8706	0	0	32	214	48	242
169167	Hara, Noriko	Luddy School of Informa	usa	63	1998	2021	249,519	216	8	4.9167	4	4	30	116	49	211

Citation





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- https://scholar.google.com/citations?hl=en&user=Xz7kzAQAAAAJ&view_op=list_works&sortby=pubdate

- https://www.scopus.com/authid/detail.uri?authorId=24166442600

- https://orcid.org/0000-0001-8884-4221
- https://www.linkedin.com/in/dr-ahmed-hammad-9a675453/?originalSubdomain=de