

Mohammed S. Gumaan (Assist. prof – UST–Yemen)

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Education

Doctor of Philosophy (Ph.D.) in Physics (Material Science)

Mansoura University

Physics. Dept.

Excellent (Comprehensive Exam Degree)

Mansoura - Egypt

2014-2018

Master in Experimental Physics

Mansoura University

Physics. Dept.

Mansoura - Egypt

2010-2013

Bachelor in Physics

Sana'a University

Physics. Dept.

Sana'a, Yemen

2003-2007

***Professional
Career
Experience***

(Currently)

University of Science and Technology

Faculty of Engineering

Assistant Professor

Teaching the academic education courses for undergraduates, the courses include:

- Physics (All the departments)
- Engineering Mechanics (All the departments) Statics + Dynamics
- Engineering Physics (All the departments)
- Biomaterials (BME Department)

Responsible of the Basic Sciences Unit at the University, and Head of the Discipline Committee at the Faculty of Engineering

(2013/2014)

Amran University

Faculty of Education, Art and Science

Lecturer

Teaching and assisting in the delivery of academic education courses for undergraduates, the courses include:

- Solid state Physics (Physics and Chemistry departments)

**Professional
Career
Experience
(cont.)**

- Classic Mechanic (Physics and Chimestry departments)
- Electronic Circuits (Physics and Chimestry departments)

(2013/ 2014)

University of Science and Technology

Faculty of Engineering

Lecturer

Teaching and assisting in the delivery of academic education courses for undergraduates, the courses include:

- Physics (All the departments)
- Engineering Mechanics (All the departments) Statics + Dynamics

Ph.D. Study

My Ph.D. thesis concentrates on the Pb-free solder alloys to be reliable through working under harsh conditions. The Melt-Spinning Technique was used to solve their mechanical, electrical and thermal problems.

**Published
Papers**

- Chromium improvements on the mechanical performance of a rapidly solidified eutectic Sn–Ag alloy, Journal of Materials Science: Materials in Electronics, <https://link.springer.com/article/10.1007/s10854-020-03623-0>
- “Chromium effects on the microstructural, mechanical and thermal properties of a rapidly solidified eutectic Sn-Ag alloy”, Soldering & Surface Mount Technology, <https://www.emerald.com/insight/content/doi/10.1108/SSMT-04-2019-0017/full/html>
- “Reliable Sn–Ag–Cu lead-free melt-spun material required for high-performance applications”, Zeitschrift für Kristallographie - Crystalline Materials, Volume 234, Issue 11-12, <https://www.degruyter.com/view/j/zkri.2019.234.issue-11-12/zkri-2019-0040/zkri-2019-0040.xml>
- “Nickel effects on the structural and some physical properties of the eutectic Sn-Ag lead-free solder alloy”, Soldering & Surface Mount Technology, <https://doi.org/10.1108/SSMT-03-2018-0009>
- “Copper effects in mechanical, thermal and electrical properties of rapidly solidified eutectic Sn–Ag alloy”, Journal of Materials Science: Materials in Electronics June 2018, Volume 29, Issue 11, pp 8886–8894.
- “Microstructural and mechanical characterization of melt spun process Sn_{3.5}Ag and Sn-3.5Ag-xCu lead-free solders for low cost electronic assembly”, Materials Science & Engineering A 690 (2017) 446–452.

- “Design and Properties of New Lead-Free Solder Joints Using Sn-3.5Ag-Cu Solder,” Silicon Journal September 2018, Volume 10, Issue 5, pp 1861–1871.
- “Improvement of the Mechanical Properties of Sn-Ag-Sb Lead-Free Solders: Effects of Sb addition and rapidly solidified” PCIM Europe 2016, (IEEE Conference).
- “Rapid Quenching of Liquid Lead Base Alloys for High Performance Storage Battery Applications. International Journal of Engineering & Technology IJET-IJENS Vol:12 No:06.
- Using Melt-spinning Technique with Calcium Addition on the Ternary Pb-Sb-Sn Alloys for Storage Battery Grids. International Journal of Modern Applied Physics, 2013, 2(1): 1-14 ISSN: 2168-1139.
- Improvement Some Physical Properties of Egyptian Battery Grids for Industrial Applications: Comparison Study with German Battery Grids. American Journal of Materials Science 2016, 6(3): 79-85.
- Book: “Lead-Antimony-Tin Alloys for Storage Battery Applications” LAMBERT Academic Publishing – 2016.

***Attended
Training
Courses***

- “Training in English Language Study, Oxford Academic Institute - Education sector- Private Education Admin- (2009).
- “Training in Computer - Modern British Institute - Adm. Of Private Education - Sanaa - (2009).
- Training in Computer - The British Symbolic Institute for training &qualifying -Sanaa -(2009).
- “Certificate in English and technology solutions from (GITEX).
- “International of Computing Deriving License (ICDL) - Scientific Computing Center - Mansoura University-(2011).
- “TOEFL Certificate in English language from the English Language Teaching Center - Mansoura University –Egypt.
- “Training in References and Data Management Using Endnote X5 - Faculty of Science - Mansoura University – Egypt.
- “Diploma in English Language Study, The American International Academy - California, USA (2016).
- “Diploma in English” at Harvest Center (Egypt, 2012)
- “English conversation, all levels” at New Horizon Center (Egypt, 2017)
- “TOEFL preparation” at English Language Teaching Center, Mansoura University, (Egypt, 2017)

***Attended
Scientific
Conferences***

- 12th International Conference on Chemistry and its Role Development (ICCRD) in Sharm Al-shakh, Department of chemistry faculty of Science -Mansoura University -Egypt.
- The First Scientific Conference for Researches and Innovations of International Students in Egyptian Universities- Mansoura – Egypt (2016)

- PCIM Europe 2016; International Exhibition and Conference for Power Electronics, Intelligent Motion, Renewable Energy and Energy Management 9 (2016). Germany.
- The 7th International Conference on Optical Spectroscopy, Laser and their Applications, 18-20 October 2016, National Research Center (Egypt).
- 16th International Arab Conference on Materials Science “Material and Society”, 17 December-2016.
- Precipitated in the Activities of Scientific Forum of Challenge in Physics and Energy, 13-15 April 2016, Faculty of Science, Mansoura University, Egypt.
- Chitosan, Silver and Magnetite nanoparticles Practical Synthesis Workshop, 26-28 November, 2016, Naqaa Foundation, Cairo, Egypt.
- Workshop about digital library, 30/10/2016, Quality Assurance Unite, Faculty of Science, Mansoura University, Egypt.

***Scientific
Research
Responsibilities***

currently work as a dependable reviewer for many of respected journals:

- Journal of Materials Chemistry and Physics-Elsevier
- Journal of Materials Science Materials in Electronics-Springer
- Journal of Alloys and Compounds- Elsevier
- Composites part B Engineering- Elsevier
- Journal of Soldering & Surface Mount Technology-Emerald
- journal of Materials Engineering and Performance- Springer
- Metals and Materials International- Springer
- Journal of Engineering
- journal of advances in physics
- SOJ | Materials Science & Engineering

<https://symbiosisonlinepublishing.com/materialsscience-engineering/reviewerboard.php>

and as Member of the editorial team of:

- Global Journal of Physics (GJP) online(<http://gpcpublishing.org/index.php/gjp/about/editorialTeam>)
- SCIREA Journal of Physics <http://www.scirea.org/journal/EditorialBoard?JournalID=14000>
- American Journal of Chemistry <http://onlinesciencepublishing.com/journal/25/editorial-board>
- Journal of Electrical Science & Engineering <https://ojs.bilpublishing.com/index.php/ese/about/editorialTeam>

Awards

- Appreciation certificate from embassy of Yemen in Cairo
- Appreciation certificate from International Student Administration (Mansoura University)

Special Skills

Computer Skills

- Efficiency in using Origin.
- Efficiency in using Mat lab.
- Efficiency in using Windows and Microsoft Office.

Supervision of Thesis:

Ph. D Dissertation:

1. Effects of nanoparticles and compositional dependence of structural, thermal, mechanical and electrical properties for eutectic SAC335 lead-free solder alloys.
2. Effects of Nano-Cr particles on a Ni-Ti alloys for medical applications.
3. Investigation of copper nanoparticles addition on the hardness and hall-petch strength of pre-annealed Al-Si lightweight material.

M. Sc. Dissertations:

1. Microstructural and Creep Characterization of Bi and Ag additions to Sn-0.7Cu Lead-free Solder for Low Cost Electronic Applications.
2. Ni nanoparticles additions to the eutectic Sn-Ag solder alloy.

Languages

- Native speaker of Arabic
- Fluent in English

Personal Data

Date of Birth Jan 1th, 1984
Place of Birth Sada'a, Yemen
Nationality Yemeni

References

- **Prof. Dr. Rizk Mostafa Shalaby**
Physics. Dept, Vice Dean-Faculty of Science- Mansoura University, Egypt.
doctorrizk2@yahoo.com
- **Dr. Abdu Kaid Al amri**
University Requirements Coordinator- University of Science and Technology- Yemen. a.alameri2222@gmail.com
- **Dr. Adel Ahmad Al-Shukairy**
Head of Communications and Electronics Eng. Dep., Faculty of Engineering, Sana'a University, Yemen. ashakiri@yahoo.com

