**Curriculum Vitae**

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| Designation  | **Professor (Dr.)**  |
| Name | **Ahmed A. Al-Tabbakh** |

**ADDRESSES & CONTACT DETAILS**

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| Permanent Address | Al-Baidha District, Mahalla 323, Avenue 13, House 6/1, Baghdad, Iraq |
| Present Address  | Department of Physics, Al-Nahrain University, Jadiriya P.O.Box 64055, Baghdad, IRAQ  |
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**QUALIFICATIONS**

1. Postdoctoral fellow of the Center for Nanomaterials Research, Universiti Teknologi MARA, Malaysia 2011 – 2013, Lithium Ion Batteries.
2. Ph.D. in Applied Physics, University of Pune, India, May 2009. Thesis title “Development of retarding field analyzer and its applications to study energy distribution of field emitted electrons from ZnO tetrapods and LaB6 emitters”.
3. M.Sc. Physics, Electron Optics, Al Nahrain University, Baghdad, Iraq, 2001.
4. B.Sc. Physics, Baghdad University, Baghdad, Iraq, 1998

**RESEARCH INTERSET**

* Field electron emission, theory and application. Electron emission from metallic and semiconducting nanoemitters, large area field emitters arrays and nanoscaled objects.
* Nanomaterials for energy storage applications (especially Li ion batteries)
* Selective coatings for solar-thermal conversion applications.

**INDICES:** Google Scholar h-index: 8

**Links:**

[**https://www.scopus.com/authid/detail.uri?authorId=16237913800**](https://www.scopus.com/authid/detail.uri?authorId=16237913800)

[**https://scholar.google.com/citations?user=ZD7S-8cAAAAJ&hl=en**](https://scholar.google.com/citations?user=ZD7S-8cAAAAJ&hl=en)

[**https://www.researchgate.net/profile/Ahmed-Al-Tabbakh**](https://www.researchgate.net/profile/Ahmed-Al-Tabbakh)

**EXPERIENCE**

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| --- | --- |
| **7 March 2023** | Professor of Physics / Department of Physics, Al-Nahrain University. |
| **7 April 2014 –****7 March 2023** | Assistant Professor of Physics / Department of Physics, Al-Nahrain University. |
| **2018 – 2020** | Managing Editor of Al-Nahrain Journal of Science (ANJS) |
| **Jan. 2010 – April 2014** | Senior Lecturer at Department of Physics, Al-Nahrain University. |
| Nov.2011 –Oct.2013 | Postdoctoral Research Fellow at the Centre for Nanomaterials Research – Universiti Teknologi MARA |
| **Jun. – Aug. 2008** | Postdoctoral fellow of the Department of Physics – University of Pune – Pune – India. |
| **March - May 2007** | Laboratory Assistant at Physics Department,University of Pune. |
| **Sep. 2002** | Established a laboratory and taught the course for general physics, electricity and mechanics for undergraduate level at Air Defense Academy, Baghdad, Iraq. |
| **Oct. 1999 – Jan. 2001** | Lecturer and Laboratory Assistant at Physics Department, Al-Nahrain University. Laboratories: Mechanics, Electric Circuits and Measurements and Computer Programming. |

**PUBLICATIONS (39)**

1. **Ahmed A. Al-Tabbakh**, Mazen A. Madanat, Marwan S. Mousa, Application of fractional Fowler-Nordheim law on field electron emission from tungsten and lanthanum hexaboride nano-scale emitters, **Philosophical Magazine**, 2023. <https://doi.org/10.1080/14786435.2023.2173366>.
2. Samah A. Al-Heeti, **Ahmed A. Al-Tabbakh**, The Fowler–Nordheim plot behaviour from virtual field emitters arrays of zinc oxide nanorods mixed with carbon nanotubes, **Philosophical Magazine** 2022, <https://doi.org/10.1080/14786435.2022.2051631>.
3. Mazen A. Madanat, **Ahmed A. Al-Tabbakh**, Mohammed Alsa'eed, Hmoud Al-Dmour, Marwan S. Mousa, Application of Murphy – Good Plot Parameters Extraction Method on Electron Emission from Carbon Fibers, **Ultramicroscopy** 234, April 2022, 113479.
4. Samah A. Al-Heeti, **Ahmed A. Al-Tabbakh**, The effect of size distribution and degradation of carbon nanotubes on the Fowler–Nordheim plot behavior, **Ultramicroscopy** 230 (2021) 113373.
5. Ruaa H. Jasim, **Ahmed A. Al-Tabbakh**, Enhancement of the Solar-Thermal Response of Flat-Plate Collector Coated with a Thermal-Resistant Paint, **Jordan Journal of Phyics** 2021.
6. Ruaa Jasim, **Ahmed A. Al-Tabbakh**, Sinan Hasan, Improvement of the Solar-Thermal Characteristics of the Flat-Plate Collector Using a Composite Coating, **Al-Nahrain Journal of Science** 24(1), 24-29, (2021).
7. **Ahmed A. Al-Tabbakh**, The behavior of Fowler-Nordheim plot from carbon nanotubes-based large area field emitters arrays, **Ultramicroscopy 218, (2020) 113087**. <https://doi.org/10.1016/j.ultramic.2020.113087>
8. Aseel B Al Zubaidi, Shatha R Ahmedizat, **Ahmed A Al-Tabbakh**, Recycling wastepaper papercrete to produce green concrete, **IOP Conf. Series: Materials Science and Engineering** 870 (2020) 012138.
9. Layth Al-Gebory, Aseel B Al‐Zubaidi, **Ahmed A Al‐Tabbakh**, Production of Self-Cleaning SiO2/CNT Nanoparticles Substituted Cement Mortar, **Engineering and Technology Journal 38(3A), 335-342, 2020**.
10. Mohsen Elain Hajlaoui, Aida Benchaabane, Zied Benhamed, Nourdine Mahdhi, **Ahmed A. Al-Tabbakh**, Fayçal Koukic, Dielectric properties of poly-(3-octylthiophene) thin films mixed with oleic acid capped cadmium selenide nanoparticles, **RSC Advances 10, 45139–45148, (2020)**.
11. Benchaabane Aida, Hajlaoui Mohsen, Hnainia Nissrine, **Al-Tabbakh Ahmad**, Zeinert Andeas, Bouchriha Habib, Optical properties enhancement of hybrid nanocomposites thin films based on P3HT matrix and ZnO@SiO2 core-shell nanoparticles, **Optical Materials 102, 109829, 2020.**
12. Shatha R Ahmedizat, Aseel B Al-Zubaidi, Ahmed A Al-Tabbakh, Fabrication green concrete by Recycled wastepaper, IOP Conf. Series: Materials Science and Engineering 870 (2020) 012146.
13. Shatha Riyad Ahmedizat, Aseel Basim Al-Zubaidi, **Ahmed A Al-Tabbakh**, Amine Achour, Alaa Abdul Hamead, Comparative study of erosion wear of glass fiber/epoxy composite reinforced with Al2O3 nano and micro particles, **Materials Today: Proceedings 20, 420-427, 2020.**
14. **Ahmed A. Al-Tabbakh**, Principles of electron optics: volume one: basic geometrical optics & volume two: applied geometrical optics, Book Review, **Contemporary Physics 60(1), 103-104, 2019**, DOI:10.1080/00107514.2019.1614675 #
15. **Ahmed A. Al-Tabbakh**, Nilgun Karatepe, Aseel B. Al-Zubaidi, Aida Benchaabane, Natheer B. Mahmood, Crystallite size and lattice strain of lithiated spinel material for rechargeable battery by X‐ray diffraction peak‐ broadening analysis, **International Journal of Energy Research 43(5), 1-9, 2019**. DOI: 10.1002/er.4390. **Impact factor 3.01**
16. **Ahmed A. Al-Tabbakh**, The behavior of the Fowler–Nordheim plot for ZnO–Cu virtual emitter arrays, **Indian Journal of Phys.** **2018**, DOI 10.1007/s12648-018-1276-3.
17. **Ahmed A. Al-Tabbakh**, Field electron emission area revisited: an integrated method for the area extraction model, **Turkish Journal of Physics** 42,27- 32, **2018**. DOI:10.3906/z-1705-7.
18. Adawiya J. Haider, **Ahmed A. Al‑Tabbakh**, Aseel B. Al‑Zubaidi, Rusul A. Rsool, Preparation and characterization of LiCo0.5Ni0.45Ag0.05O2 Cathode material for lithium–ion battery, **Journal of Materials Science: Materials in Electronics 29 (15),** 13277–13285**, 2018**, <https://doi.org/10.1007/s10854-018-9451-z>. **Impact Factor 2.324**
19. Adawiya J. Haider, Rusul Abed Al-Rsool, **Ahmed A. Al-Tabbakh**, Abdul Nasser M. Al-Gebori, Aliaa Mohamed, Structural, morphological and optical properties of LiCo0.5Ni0.45Ag0.05O2 thin films, **AIP Conference Proceedings 1968, 020001, 2018,** doi: 10.1063/1.5039160.
20. **Ahmed A. Al-Tabbakh**, Symmetry in crystallography: understanding the international tables, Book Review, **Contemporary Physics,** 58, 371, **2017**, DOI:10.1080/00107514.2017.1371232
21. **Ahmed A. Al-Tabbakh**, Microscopy: A very short introduction, Book Review, **Contemporary Physics** 58**, 2017**, DOI: 10.1080/00107514.2017.1291721
22. **Ahmed A. Al-Tabbakh**, Norlida Kamarulzaman, An Innovative Method to Observe Rate Capability of Li-Ion Battery Composed of Spinel Cathode Material, **Journal of Energy Storage 3, 36–42, 2015.**
23. **Ahmed A. Al-Tabbakh**, Fowler-Nordheim Plot Characteristics for ZnO Virtual Field Emitter Array, **Philosophical Magazine 95(26)**, 2839 – 2850, 2015. DOI: 10.1080/14786435.2015.1083133. **(2015) Impact Factor 1.825**.
24. **Ahmed A. Al-Tabbakh,** Aseel B. Al-Zubaidi, Norlida Kamarulzaman, “Correlating capacity and Li content in layered material for Li ion battery using XRD and particle size distribution measurements”, **India Journal of Physics 90 (3)**, 297-305, **2016**. DOI 10.1007/s12648-015-0748-y, **(2016)**. **Impact Factor 1.337**.
25. **Ahmed A. Al-Tabbakh**, Norlida Kamarulzaman, Aseel B. Al-Zubaidi, Synthesis and properties of a spinel cathode material for lithium ion battery with flat potential plateau, **Turkish Journal of Physics** 39, 187 – 198**, 2015.**
26. **Ahmed A. Al-Tabbakh** and Norlida Kamarulzaman, “Evaluation of the electrochemical capacity of spinel Li1.0348Mn1.9152Fe0.0494O4 compound from combined X-ray diffraction and particle size distribution measurements, **Journal of Solid State Electrochemistry** 18, 2411 – 2418, **2014**, DOI: 10.1007/s10008-014-2486-z. **Impact Factor: 2.446, 3 Citations.**
27. **Ahmed A. Al-Tabbakh,** M. A. More, Dilip. S. Joag, Imtiaz S. Mulla and Vijayamohanan K. Pillai, “The Fowler – Nordheim Plot Behavior and Mechanism of Field Electron Emission from ZnO Tetrapod Structures”, **ACS NANO** 4 (10), 5585–5590, **2010**. **Impact Factor: 12.03, 52 Citations.**
28. **Ahmed A. Al-Tabbakh,** Mahendra A. More, Dilip S. Joag, Niranjan S. Ramgir, Imtiaz S. Mulla and Vijayamohanan K. Pillai, “Energy Analysis of Field Emitted Electrons from a ZnO Tetrapod” **Applied Physics Letters** 90, 162102, **2007**. **Impact Factor: 3.52, 20 Citations.**
29. Ahmad K. Ahmad, Sabah M. Juma and **Ahmed A. Al-Tabbakh**, “Computer Aided Design of an Electrostatic FIB System”, **Indian Journal of Physics B**, Vol. 76(6), pp 711-714, **2002**. **Impact Factor: 1.785, 4 Citations.**
30. **Ahmed A. Al-Tabbakh,** "A fresh look at thermal field emission from tungsten tip", **Turkish Journal of Physics** **36**, 271-278, **2012**. **1 Citation.**
31. **Ahmed A. AL-Tabbakh,**  M. A. More, D. S. JOAG, " Development and Utilization of a Retarding Analyzer for Field Emission Investigation of LaB6/W Emitter", **Turkish Journal of Physics 37**, 219-228, **2013**.
32. F. Jamali Sheini1, **Ahmed A. Al-Tabbakh**, D. S. Joag, M. A. More, “Field Emission Investigation of as-Synthesized Cu/Zno Nanostructure Films”, **Iranian Physical Journal**, 2-4, 1-5, **2009**.
33. Ahmad K. Ahmad, Fadhil A. Ali, **Ahmed A. Al-Tabbakh,** Sabah M. Juma, Computer aided design of a magnetic lens using a combined dynamic programming and artificial intelligence technique, **Iraqi Journal of Applied Physics** 10(1), 33-37, **2014**.
34. **Ahmed A. Al-Tabbakh**, “Optimization of Ion Beam System Using the Inverse Problem Procedure”, DAE-BRNS-PSI Symposium on Ion Beam Technology and Applications, September 19-20, **2007**, Bhabha Atomic Research Centre, Trombay, Mumbai – 400085, India.
35. Development of Analyzer for Field Electron Energy Spectroscopy; An Integrated Guide for Analyzer Fabrication and Utilization, LAMBERT academic publication, Germany **2013** **(Book Publication)**.
36. Ahmad K. Ahmad, Sabah M. Juma and **Ahmed A. Al-Tabbakh**, “Simulation of an Electrostatic FIB System”, European Simulation Symposium, Marseille, France **2001**.
37. Aseel B. Al-Zubaidi, **Ahmed A. Al-Tabbakh**, Hanaa A. Al-Qaessy, Ragad N. Al-Kaseey, **Engineering and Technology Journal 32(B), 519 – 532, 2013.**
38. Aseel B. Al-Zubaidi, **Ahmed A. Al-Tabbakh**, Ragad O. Abbas, Nazar J. Riza, Mechanical and Thermal Properties of Cockles Shell Cementing Material, **Iraqi Journal of Physics 13(26), 107-111, 2015.**
39. Ahmad K. Ahmad, **Ahmed A. Al-Tabbakh** and Sabah M. Juma, “Optical Properties of Two-Interval Spline Electrostatic Lens Model”, Conference of Arab Science and Technology, Syria **2002**.

**CONFERENCES AND SEMINARS**

* The 1st International Conference for Science and Pharmacy (MSPC1), 26-28 October 2022, Mutah University, Al-Karak, Jordan.
* The 3rd International Conference on Materials Engineering and Science (IConMEAS 2020) 28-30.December.2020, Kuala Lumpur, Malaysia. (Session Chair).
* 1st International conference on engineering and advanced technology, University of Assiut, Egypt, 11-12.February.2020.
* 2nd International Conference on Science of Materials, Laser and Applied Physics (ICSMLAP 2020), Baghdad, Iraq. (Sessions Chair)
* TWAS 14th General Conference and 28th General Meeting, 27 – 29 November 2018, Trieste, Italy. (Poster Presentation)
* First International Conference on Current Nanotechnology and its Applications, Jordan University of Science and Technology, **Irbid, Jordan 10-12 April 2018** (Invited speaker).
* Workshop on Materials Science and Technology, The University of Jordan, **Amman, Jordan, 8-9 April 2018** (Invited speaker and member of review committee of postgraduate studies).
* Workshop on Scientific Refugees: Transnational Resources, **13-17 March 2017, Trieste, Italy** (Invited speaker).
* TWAS 27th General Meeting, 13 – 18 Nov. 2016, **Kigali Rwanda** (Poster presentation).
* Energy Materials Nanotechnology EMN Meeting on Batteries, 21 – 25 February 2016, Orlando, Florida, USA. (**Unattended poster presentation**)
* TWAS 13th General Conference & 26th General Meeting at the Austrian Academy of Sciences (OeAW) 18 – 21 Nov. 2015, **Vienna, Austria**. (Oral and poster presentations).
* The 5th International Scientific Conference on Nanotechnology and Advanced Materials and their Applications (ICNAMA 2015), Nanotechnology and Advanced Materials Research Center, University of Technology, **Baghdad, Iraq**.
* The 1st International Conference on Physics for Sustainable Development, 28 – 30 October 2014, Al-Nahrain University, **Baghdad, Iraq**. (*Oral presentation*)
* Energy Materials and Nanotechnology (EMN) Spring Meeting, 27 Feb. – 2 Mar. 2014, **Las Vegas, USA**. (*Invited talk*)
* The 4th International Scientific Conference on Nanotechnology and Advanced Materials and their Applications (ICNAMA 2013), 3-4 Nov. 2013, University of Technology, **Baghdad, Iraq**. (*Oral presentation*)
* DAE-BRNS-PSI Symposium on Ion Beam Technology and Applications (SIBTA), Power Beam – 07 19-21 Sep. 2007, Multipurpose Hall, Training School Hostel, Anushaktinagar, **Mumbai – 400094, India**.
* National Workshop on Plasma and Laser Processing of Advanced Materials, Department of Physics, University of Pune, **Pune, India**, 7-9 November 2006.
* Poster Presentation “Enhanced Field Emission Characteristics of Novel ZnO Multipod Nanostructures” in absentia, presented by Prof. D.S. Joag at Joint 19th International Vacuum Nanoelectronics Conference and 50th International Field Emission Symposium, Guilin, CHINA, Organized by Sun Yat-sen University, July 17 – 20, 2006
* Raman Memorial Conference, Department of Physics, University of Pune, **Pune, India** 2006.
* National Workshop on Advanced Techniques for Characterization of Nanomaterials (XRD, SEM/EDS, SPM), Department of Physics, University of Pune, **Pune, India**, June 28 – July 2, 2005.
* Raman Memorial Conference, Department of Physics, University of Pune, **Pune, India**, 2005

**AWARDS**

* Al-Nahrain University Prize for Best Published Paper in Pure Sciences **2019**.
* Al-Nahrain University Prize for Best Published Paper in Pure Sciences **2016**.
* The world Academy of Science (TWAS) Young Affiliate Fellow **2015 – 2019**.
* Postdoctoral Position – Centre for Nanomaterials Research – Universiti Teknologi MARA – Malaysia, Nov. 2011 – Oct. **2013**.
* Postdoctoral fellowship (UGC-Dr. D. S. Kothari fellowship – India **2008**.
* Best Paper Award at the DAE-BRNS-PSI Symposium on Ion Beam Technology and Applications, Power Beam 07, BARC, Mumbai, September **2007**.
* Best oral presentation at Raman Memorial Conference 2006, Department of Physics, University of Pune **2006**.
* Indian Council for Cultural Relations (ICCR) Research Scholarship, **2002-2007**.

**SKILLS**

* Synthesis and Characterization of nanomaterials for energy storage applications.
* Working with XRD qualitative and quantitative analysis software.
* Operating SIMION7, 3D Design Package of Electron Optics
* FORTRAN and Qbasic Language Programming

**MEMBERSHIP**

* **The World Academy of Sciences (TWAS ) Young Affiliate 2015 – 2019**
* **The TWAS Young Alumni 2020 – 2024.**
* **Review Editor:** Frontiers, **a community-oriented open-access academic publisher and research network.**
* **Member,** Iraqi Society of Nanotechnology, until 1/12/2014.

**PERSONAL INFORMATION**

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| Date of birth / Nationality  |  13 Feb. 1977 / Iraqi |
| Languages:  | Arabic, English |
| Marital Status:  | Married Having two children (Ibrahim and Maya)  |
| Spouse name, education and profession | Dr. Aseel Basim Al-Zubaidi, Ph.D. in Physics, Professor at Department of Materials Engineering/ University of Technology/Baghdad/Iraq  |

**LIST OF REFERENCES**

**Prof. Dr. Mahendra A. More**

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**Prof. Dr. Marwan S. Mousa**

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**Prof. Dilip S. Joag**

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Pune 411007, Maharashtra, India

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