

Dr. Shadi Al Khateeb

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I have a Ph.D. in Materials and Metallurgical Engineering from the University of Birmingham-UK. The University of Birmingham is one of the top UK universities and ranked the 64th world wide according to QS university ranking system.

Thesis title: **Growth and characterisation of textured superconducting tapes.**

In the work, thin films of MgO were deposited on metallic substrates of austenitic stainless steel grade AISI 310 and Hastalloy C276 by the chemical route (spray pyrolysis) and the superconducting complex ceramic YBCO was deposited by the physical route (Pulsed Laser Deposition: PLD). The characterisation of the deposited films was carried out using different techniques including SEM, EDX, WDX, AFM, FIB, AC susceptibility, and X-ray characterisation using 2θ scans, ϕ -scan and ω - scan.

I did one research year (Courtesy Visiting Assistant Professor: Postdoc) at the university of Florida-USA which is ranked the 86th according to shanghai ranking (ARWU-2018). The research project title was (**Developing pulsed laser deposition of novel cathode materials for advanced lithium ion battery applications**). FeF₂ films were deposited by pulsed laser deposition for use as cathode materials in lithium ion battery applications. Pouch and coin cell batteries were made inside a glove box with Ar environment. The performance and microstructural evolution of the cycled FeF₂ cathodes were investigated electrochemically through galvanostatic and cyclic voltammetry tests, and transmission electron microscopy, respectively.

I had a two research years at the University of Utah (2016/2017 – 2017/2018). My research is on thin Films deposition of FeS₂ cathodes for Lithium Ion battery applications.

Education



09/2016-09/2018 University of Utah, Salt Lake City / USA
Visiting Scholar-researcher (Li ion batteries)



09/2013-09/2014 University of Florida, Gainesville / USA (ranked 78th over the world according to shanghai ranking system)
Courtesy Visiting Assistant Professor
PostDoctoral researcher (Li-ion batteries)



2006-2009 University of Birmingham / United Kingdom (ranked 64th over the world according to QS ranking system)
Ph.D. of Materials and Metallurgical Engineering
Graduation Date: 11th of December 2009



2002-2004 Al-Balqa' Applied University (BAU), Al-Salt / Jordan
Master of Materials and Metallurgical Engineering
Graduation Date: 15th of September 2004
G.P.A: Excellence (3.88 out of 4.0)



1997-2002 Al-Balqa' Applied University (BAU), Al-Salt / Jordan
Bachelor of Materials and Metallurgical Engineering
Graduation Date: 20th of February 2002
G.P.A: Excellence (3.75 out of 4.0)

Conferences

* 8th European conference on applied superconductivity, 16-20th September 2007, Brussels, Belgium.

Attendee of

- * Annual Midlands SEM users meeting, 2009, University of Birmingham, UK.
- * Annual Midlands SEM users meeting, 2008, University of Birmingham, UK.
- * Annual Midlands SEM users meeting, 27th June 2007, University of Birmingham, UK.
- * 12th European forum of processors of bulk HTS materials, 27-28th April 2007, University of Birmingham, UK.
- * Superconductivity winter school at the Cavendish Laboratory, 8-12th January 2007, University of Cambridge, UK.
- * CNC (Computerized-Numerically Controlled) Mills training course held at "EXCEL Machine Tools", 7-28th September 2004, Coventry, UK.
- * Internal Quality Auditing training course held at BAU by United Group

Consulting and Management from 18-19th August 2003.

* Technical Aspects of Accreditation training course held at BAU by United Group Consulting and Management from 22-24th July 2003.

* Introduction to Quality Management training course held at BAU by United Group Consulting and Management in 9th July 2003.

* Heat Treatment training course held at BAU by JICA (Japan International Cooperation Agency) from 19th September 2002 to 13th March 2003.

Practical experience

* 3/7/2001-28/8/2001

Egyptian Iron and Steel CO.: El-Tebbin-Helwan-Egypt.

Sectors: Sinter Plant, Blast Furnace, Plates and Mill Section, Convertors and continuous casting, Hot and Cold Rolling Mill, Productive Shops, Maintenance and quality Control.

* 2002-2006: Working at Al-Balqa' Applied University conducting experiments for undergraduate students in different fields including Heat treatment, Ceramic Materials, Corrosion and protection of metals, Polymer processing, Manufacturing processes of metals, Crystallography.

* Participating in the *Faculty for Factory* program for solving industrial problems at Arab Aluminium Industry Co. Ltd. (ARAL), Jordan-2011.

Awards received

* The Arab Fund Fellowship-Kuwait for conducting one research year at the University of Utah

* The Scientific Research Support Fund (SRSF) grant for one research year at the University of Florida (PostDoctoral grant)

* Ph.D. Scholarship: Overseas Research Scholarship (ORS) from UK government for three years covering tuition fees: HIGHLY COMPETITIVE, and a scholarship from Al-Balqa Applied University covering living expenses.

* Two Superiority certificates from Al- Balqa' Applied University.

* Superiority certificate from the Jordan Engineers Association awarded for the BSc graduation project: "Corrosion of Reinforcement Steel in Concrete".

Publications

* **Al Khateeb, S.** and T.D. Sparks, 2019 "Pore-graded and conductor and binder free FeS₂ films deposited by spray pyrolysis for high performance lithium ion batteries". Journal of Materials Research, Vol 34, PP 2456-2471. Doi: <https://doi.org/10.1557/jmr.2019.208>(Impact factor: 2.993)

* **Al Khateeb, S.** and T.D. Sparks, 2019 "Spray pyrolysis of conductor- and binder- free porous FeS₂ films for high-performance lithium ion batteries". Journal of Materials Science, Vol 54, PP 4089-4104. Doi: 10.1007/s10853-018-3055-0 (Impact factor: 2.993)

* I. Nelson, T. A. Ogden, **S. Al Khateeb**, J. Graser, T. D. Sparks, J. J. Abbott and S. E. Naleway, 2019 "Freeze-Casting of Surface-Magnetized Iron(II,III) Oxide Particles in a Uniform Static Magnetic Field Generated by a Helmholtz Coil". Advanced Engineering Materials, Vol XX, PP XX-XX. Doi: 10.1002/adem.201801092 (Impact factor: 2.319)

- * Santos-Ortiz, R.; Rojhirunsakool, T.; Jha, J. K.; **Al Khateeb, S.**; Banerjee, R.; Jones, K. S.; Shepherd, N. D., **2017** “Analysis of the structural evolution of the SEI layer in FeF₂ thin-film lithium-ion batteries upon cycling using HRTEM and EELS”. *Solid State Ionics*, Vol 303, PP 103-112. Doi: dx.doi.org/10.1016/j.ssi.2017.02.009 (Impact factor: 2.380)
- * **Shadi Al Khateeb**, Aaron G. Lind, Reinaldo Santos-Ortiz, Nigel D. Shepherd, and K.S. Jones, **2015** “Effects of steel cell components on overall capacity of pulsed laser deposited FeF₂ thin film lithium ion batteries ” *Journal of The Electrochemical Society*, Vol 162 (8), PP. A1667-A1674. Doi: 10.1149/2.0021509jes. (Impact factor: 3.014)
- * **Shadi Al Khateeb**, Aaron G. Lind, Reinaldo Santos-Ortiz, Nigel D. Shepherd, and K.S. Jones, **2015** “Cycling performance and morphological evolution of pulsed laser deposited FeF₂ thin film cathodes for Li-ion batteries” *Journal of Materials Science*, Vol 50 (15), PP. 1-9. Doi: 10.1007/s10853-015-9062-5. (Impact factor: 2.302)
- * **Shadi Al Khateeb**, Amin Al Robaidi, Radwan Dweiri, Ahmad Lebzo, Mahmood Al-Sawa'adeh, **2014** “Mechanical Failure Study of Aluminum Extrusion Dies As Affected By the Quality of The Billets”, *Journal of Testing and Evaluation*, Vol 42 (4), PP. 1016-1024. Doi:10.1520/JTE20120291. (Impact factor: 0.423)
- * **Shadi Al-Khateeb**, D. Pavlopoulos, T. W. Button , JS. Abell, **2013** “Spray pyrolysis of MgO templates on 321-austenitic stainless steel substrates for YBa₂Cu₃O₇ deposition by PLD”, *Journal of Superconductivity and Novel Magnetism* Vol 26 (2), PP. 273-280. Doi: 10.1007/s10948-012-1560-y. (Impact factor: 1.100)
- * **Shadi Al-Khateeb**, **2013** “The suitability of selected austenitic stainless steels and hastelloy C276 alloys as substrates for thin film deposition by spray pyrolysis”, *International Journal of Materials Research*, Vol 104 (3) PP 301-307 DOI 10.3139/146.110855. (Impact factor: 1.240)
- * Tojan Ghabeer, Radwan Dweiri, **Shadi Al Khateeb**, **2013** “Thermal and mechanical characterisation of polypropylene / eggshell biocomposites”, *Journal of Reinforced Plastics and composite*, Vol 32 (6) PP. 402-409. (ISI impact factor: 0.901)
- * **Shadi Al-Khateeb**, D. Pavlopoulos, T.W. Button, and JS. Abell, **2012**, “Pulsed laser deposition of YBa₂Cu₃O₇ superconducting film on MgO templates spray pyrolyzed on Hastelloy C276”, *Journal of Superconductivity and Novel Magnetism* Vol 25(6), PP. 1823-1827. (Impact factor:1:100)
- * Amin Al Robaidi, **Shadi Al Khateeb**, Radwan Dweiri, Tojan Gaghbeer, **2012** “The effect of radiation on the thermal expansion of kaolin nano filled-XLPE materials”, *International Journal of Metallurgical & Materials Science and Engineering*, Vol. 2 issue 3, PP. 74-84. (Impact factor: 0.930)
- * **Shadi Al Khateeb**, Button TW and Abell J S. Abell, **2010**, “Spray pyrolysis of MgO templates on Hastelloy C276 and 310 austenitic stainless steel substrates for

YBa₂Cu₃O₇ (YBCO) deposition by pulsed laser deposition”, IOP, Superconductor Science & Technology Vol 23(9): 095001. (ISI impact factor: 2.717)

* Pavlopoulos D, **Shadi Al-Khatiab**, Button TW, Abell JS, 2008, “Effort to produce textured CeO₂ and MgO films by the spray pyrolysis technique as buffer layers for coated conductors”, IOP, Journal of Physics: Conference Series. Vol. 97:012098.

*J.T. Al-Haidary, **Shadi Al-Khatiab**, 2006, “Manufacturing and characterization of dental shape memory alloy”, ELSEVIER, Materials Science and Engineering A, Vol. 419, PP. 45-49. (SNIP impact factor: 2.625, SJR impact factor: 2.647)

* Sami Masadeh, **Shadi Al-Khateeb**, Ahmad Ashkhaibi, 2002, “Steel reinforcement behavior in simulated concrete solutions contaminated with chlorides by electrochemical impedance spectroscopy”, Proceedings of the viiith international corrosion symposium, Turkey. PP. 520-527.

* Reviewer:

- Journal of The Electrochemical Society (ECS)
- Journal of Materials Science
- International Conference on Superconductivity and Magnetism (ICSM) 2012
- Jordan Journal of Mechanical and Industrial Engineering
- Journal of Materials and Environmental Science
- Materials Research Express

Member of * Jordan Engineer Association

Administration Head of the Materials Engineering department: Al-Balqa Applied University- (16/09/2018-09/2020)

Past Head of the Materials Engineering department: Al-Balqa Applied University- (11/09/2011-14/09/2013)

Dean’s Assistant for Quality assurance (09/2015-09/2016)

Patents US patent No. 10,181,598
Lithium Battery Cathodes, Methods of Making, and Methods of Use Thereof
Serial No.: 62/099,675; Filing Date: January 5, 2015

**Academic
experience**

- * Lecturing at the Department of Materials Engineering- Al-Balqa' Applied University as an Assistant professor since the 15th of December 2009. Promoted to Associate Professor in 12/2015.
- * Classes taught: Solution Thermodynamics, Materials science, Corrosion and protection of metals, Heat treatment, Crystallography, Metallography, Physical metallurgy, Statics, phase transformation.
- * University of Jordan-Industrial Engineering department. Part time job (9/2014-1/2105)
- * Supervised 14 undergraduates for their final year graduation projects.

