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❖ Research Summary:

Materials processing in the form of thin films for energy (Lithium Ion Batteries), Biomaterials, and Superconductor applications and their characterization. The utilized techniques for thin film deposition include PLD and spray pyrolysis. The commonly used characterization techniques include XRD, SEM, EDS, EBSD, AFM, and XPS.

❖ Education:

- 2006-2009** Ph.D., University of Birmingham, Birmingham, UK. Department of Metallurgy and Materials Faculty Advisor: John Stuart Abell, Co-advisor: Tim W. Button. Dissertation entitled "Growth and Characterization of Textured Superconducting Tapes," December 2009.
- 2002-2004** M.Sc. (honors) in Metallurgy and Materials, Al-Balqa Applied University, Jordan. Materials and Metallurgical Engineering Department. Faculty Advisor: J. T. Al-Haidary. Thesis entitled "Dental Shape Memory Alloy," September 2004.
- 1997-2002** B.Sc. (honors) in Metallurgy and Materials, Al-Balqa Applied University, Jordan. Materials and Metallurgical Engineering Department. Senior Thesis Adviser: Sami Masadeh. Thesis entitled "Corrosion of Reinforcement Steel in Concrete," February 2002.

❖ Employment:

- 2023 – present** Chair of Materials Engineering Department, Al-Balqa Applied University, Al-Salt, Jordan
- 2017 – present** Adjunct Assistant Professor, University of Utah, Salt Lake City, Utah, United States of America
- 2015 – present** Associate Professor, Materials Engineering, Al-Balqa Applied University, Al-Salt, Jordan
- 2018 – 2021** Chair of Materials Engineering Department, Al-Balqa Applied University, Al-Salt, Jordan
- 2016 – 2018** Postdoctoral Fellow working with Prof. Taylor D. Sparks, University of Utah, Salt Lake City, Utah, United States of America
- 2015 – 2016** Associate Dean for Planning, Development, and Quality Assurance Affairs, Faculty of Engineering, Al-Balqa Applied University, Al-Salt, Jordan
- 2014 – 2015** Chair of Materials Engineering Department, Al-Balqa Applied University, Al-Salt, Jordan
- 2013 – 2014** Postdoctoral Fellow working with Prof. Kevin S. Jones, University of Florida, Gainesville, Florida, United States of America
- 2011 – 2013** Chair of Materials Engineering Department, Al-Balqa Applied University, Al-Salt, Jordan
- 2009 – 2015** Assistant Professor, Materials Engineering, Al-Balqa Applied University, Al-Salt, Jordan
- 2002-2006** Laboratory Supervisor, Materials Engineering, Al-Balqa Applied University, Al-Salt, Jordan
- Summer 2001** Egyptian Iron and Steel CO.: El-Tebbin-Helwan-Egypt

❖ Publications:

Submitted

1. Sami Masadeh, **Shadi Al Khateeb**, Almontaser Bellah Ajlouni. Enhancing pitting corrosion inhibition of AISI 304 stainless steel using a green frankincense-modified ferric chloride solution. under review.
2. Frank Aneke, Shadi M. Hanandeh, **Shadi Al Khateeb**, Ruba A. Alkharabsheh. Efficient Applications of Genetic Algorithms and Neural Network Modelling to Predict Dynamic Modulus of Hot Asphalt Mix. under review.

Published (underlined are undergraduate co-authors)

1. **Al Khateeb S**, Alley MJ, Beck JP, Jeyapalina S, Sparks TD. Crystallinity evolution of spray pyrolyzed fluorapatite thin films by post-deposition treatment. *Thin Solid Films* 2023;784:140082. [\[DOI\]](#)
2. **Al Khateeb S**, Bennett BT, Beck JP, Jeyapalina S, Sparks TD. Exploration of fluorapatite bio-ceramic thin film deposition by ultrasonic spray pyrolysis. *Journal of Materials Research* 2023;38(8):2287-2301. [\[DOI\]](#)
3. **Al Khateeb S**, Sparks TD. Pore-graded and conductor- and binder-free FeS₂ films deposited by spray pyrolysis for high-performance lithium-ion batteries. *Journal of Materials Research* 2019;34(14):2456-2471. [\[DOI\]](#)
4. Nelson I, Ogden TA, **Al Khateeb S**, Graser J, Sparks TD, Abbott JJ, Naleway SE. Freeze-Casting of Surface-Magnetized Iron(II,III) Oxide Particles in a Uniform Static Magnetic Field Generated by a Helmholtz Coil. *Advanced Engineering Materials* 2019;21(3):1801092. [\[DOI\]](#)
5. **Al Khateeb S**, Sparks TD. Spray pyrolysis of conductor- and binder-free porous FeS₂ films for high-performance lithium ion batteries. *Journal of Materials Science* 2019;54(5):4089-4104. [\[DOI\]](#)
6. Santos-Ortiz R, Rojhirunsakool T, Jha JK, **Al Khateeb S**, Banerjee R, Jones KS, Shepherd ND. 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* 2017;303:103-112. [\[DOI\]](#)
7. **Shadi Al-khateeb**, Lind AG, Santos-Ortiz R, Shepherd ND, Jones KS. Effects of Steel Cell Components on Overall Capacity of Pulsed Laser Deposited FeF₂ Thin Film Lithium Ion Batteries. *Journal of The Electrochemical Society* 2015;162(8):A1667-A1674. [\[DOI\]](#)
8. **Shadi Al-khateeb**, Lind AG, Santos-Ortiz R, Shepherd ND, Jones KS. Cycling performance and morphological evolution of pulsed laser-deposited FeF₂ thin film cathodes for Li-ion batteries. *Journal of Materials Science* 2015;50(15):5174-5182. [\[DOI\]](#)
9. **Al Khateeb S**, Dweiri R, *Lebzo A, Al-Sawa'adeh M*. Mechanical failure study of aluminum extrusion dies as affected by the quality of the billets. *Journal of Testing and Evaluation* 2014;42(4):1016-1024. [\[DOI\]](#)
10. **Shadi Al-khateeb**. The suitability of selected austenitic stainless steels and hastelloy C276 alloys as substrates for thin film deposition using spray pyrolysis. *International Journal of Materials Research* 2013;104(3):301-307. [\[DOI\]](#)
11. Ghabeer T, Dweiri R, **Al-Khateeb S**. Thermal and mechanical characterization of polypropylene/eggshell biocomposites. *Journal of Reinforced Plastics and Composites* 2013;32(6):402-409. [\[DOI\]](#)
12. **Al-Khateeb S**, Pavlopoulos D, Button TW, Abell JS. Spray Pyrolysis of MgO Templates on 321-Austenitic Stainless Steel Substrates for YBa₂Cu₃O₇ Deposition by PLD. *Journal of Superconductivity and Novel Magnetism* 2013;26(2):273-280. [\[DOI\]](#)
13. Al Robaidi A, **Al Khateeb S**, DWEIRI R, GAGHBEER T. The Effect of radiation on the thermal expansion of kaolin nano filled-xlpe materials. *International Journal of Metallurgical & Materials Science and Engineering* 2012;2(3):74-84. [\[DOI\]](#)
14. **Al-Khateeb S**, Pavlopoulos D, Button TW, Abell JS. Pulsed Laser Deposition of YBa₂Cu₃O₇ Superconducting Film on MgO Templates Spray Pyrolyzed on Hastelloy C276. *Journal of Superconductivity and Novel Magnetism* 2012;25(6):1823-1827. [\[DOI\]](#)
15. **Al Khateeb S**, Button TW, Abell JS. Spray pyrolysis of MgO templates on Hastelloy C276 and 310-austenitic stainless steel substrates for YBa₂Cu₃O₇ (YBCO) deposition by pulsed laser deposition. *Superconductor Science and Technology* 2010;23(9):095001. [\[DOI\]](#)

16. Al-Haidary JT, **Al-Khatiab S**. Manufacturing and characterization of dental shape memory alloy. Materials Science and Engineering: A 2006;419(1):45-49. [\[DOI\]](#)

❖ **Patents:**

1. "Spray pyrolysis: a thin film deposition technique for functionally graded films for battery electrodes" provision patent filed 10/31/2017.
2. "Lithium ion battery cathodes, methods of making, and methods of use thereof." published February 25 2020 as U.S. Patent No.US-2020- 10573878-B2.

❖ **Conference Proceeding:**

1. Pavlopoulos D, **Khatiab SA**, Button TW, Abell JS. Effort to produce textured CeO₂ and MgO films by the spray pyrolysis technique as buffer layers for coated conductors. Journal of Physics: Conference Series 2008;97(1):012098. [\[DOI\]](#)

❖ **Research Grants:**

1. "RAWABIT travel grant" \$3,740 The U.S.- Jordanian University Cooperation Network, U.S. embassy in Jordan (09/2023).
2. "Thin film deposition by spray pyrolysis of cathode materials for Lithium Ion Battery Applications" \$48,000 Arab Fund for Economic and Social Development - Kuwait, conducted at the University of Utah (09/2016-09/2017)
3. "Development of pulsed laser deposition of novel cathode materials for advanced Li-ion battery application" \$35,000 Scientific and Innovation Support Fund - Jordan, conducted at the University of Florida (10/2013-09/2014)
4. Overseas Research Students Awards Scheme (ORSAS) from the UK government for three years covering Ph.D. tuition fees and a stipend, UK higher education funding bodies, (09/2006-09/2009)

❖ **Conference, Meetings and Workshops:**

07/2023 Introduction to Research Mentoring, University of Utah

06/2023 Attending an informal workshop with U.S. visitors at the Fulbright House (Jordanian American Commission for Educational Exchange), Jordan

06/2023 Attending the launch of RWABIT program: the U.S. -Jordanian University cooperation network under the patronage of His Excellency The American Ambassador at Al- Hussein Technical University, Jordan

06/2023 Attending NSF Responsible & Ethical Conduct of Research & Research Mentoring, University of Utah (Zoom)

11/2022 Attending E-learning/ Bringing Text to Life, JoVE, United Kingdom (Zoom)

08/2022 Attending Proposal writing, BAU, Jordan

11/2020 Course on: Staying Connected with Remote Learning through Microsoft Teams and Office 365 - education.microsoft.com, United States (Zoom)

11/2020 Certified Microsoft Innovative Educator - education.microsoft.com, United States (Zoom)

06/2020 Attending Developing Remote E-learning Skills, BAU, Jordan

11/2018 Attending Erasmus+ workshop (how to write a competitive proposal), Jordan

11/2011 Attending The 7th national Tempus conference, Jordan

10/2010 Attending Green building \ Energy conversation, Jordan

09/2007 Participation in the 8th European conference on applied superconductivity, Belgium

08/2003 Training course: Internal Quality Auditing, Jordan

07/2003 Training course: Technical Aspects of Accreditation, Jordan

07/2003 Training course: Introduction to Quality Management, Jordan

06/2003 Training course: ISO/IEC 17025 implementation, Jordan

❖ **Languages:**

Fluent in Arabic and English (lived in the United Kingdom and in the United States for more than three years each).

❖ **Honors and Awards:**

11/2022 Trusted reviewer, IOP Publishing, UK

09/2021 Thank you letter for serving as the Head of the Materials Engineering Department, Al-Balqa Applied University, Jordan

04/2021 Outstanding Reviewer for Materials Research Express, IOPscience, UK

08/2017 Thank you and appreciation certificate for the efforts made towards scientific research, Al-Balqa Applied University, Jordan

2003 Thank you and appreciation certificate for contributing to the organization and success of the 1st international conference in Materials Science and Engineering at Al-Balqa Applied University, Jordan

09/2002 Superiority certificate from Jordan Engineers Association for winning first place in the BSc graduation project competition "Corrosion of Reinforcement Steel in Concrete"

11/2001 Superiority certificates from Al-Balqa Applied University, Jordan- Outstanding Materials and Metallurgical Engineering student

10/2000 Superiority certificates from Al-Balqa Applied University, Jordan- Outstanding Materials and Metallurgical Engineering student

❖ **Volunteering and Service:**

2013-present Reviewer for Journal of Materials Science, Journal of The Electrochemical Society (ECS), Computational Materials Science, JOM The Journal of The Minerals, Metals & Materials Society (TMS), Materials Research Express, Journal of the American Ceramic Society, RSC advances, Royal Society Open Science, Journal of Materials and Environmental Science, and Jordan Journal of Mechanical and Industrial Engineering

2020-2021 Recording video tutorials about Microsoft Teams and Moodle, the eLearning platforms, for the engineering faculty community during the COVID pandemic, BAU, Jordan

Summer 2011 Participation in Faculty for Factory (FFF) program - Jordan University – Solving industrial problems related to aluminum extrusion at Arab Aluminum Industry Co. Ltd (ARAL)

❖ **University Undergraduate Courses Taught and Mentoring**

Courses: Statics, Crystallography, Metallography, Physical metallurgy, Solution thermodynamics, Phase transformation, Heat treatment, Corrosion and protection of metals, Materials Science 1, Crystallography lab, Corrosion and protection of metals lab., and Materials Engineering Seminar.

Undergraduate Student Researchers: 36 with 5% of publications include undergrad coauthors.

❖ **Administrative experience:**

Member and Chair of different committees at Al-Balqa Applied University, Jordan

2023-current Faculty of Engineering representative in the University Council, Chair of a Committee to obtain ABET accreditation at the Department level, Chair of the Development and Quality Assurance Committee in the Material Engineering Department, Chair of the Study Plan and Materials Equivalency Committee in the Department of Material Engineering, Member of a Committee to study tender offers for furnishing, supplying, installing, operating, and maintaining devices and equipment funded by the Korean International Cooperation Agency (KOICA), Member of the Materials Engineering Department Committee to analyze the results of achieving educational outcomes and make improvements to study plans, Member of a Committee assigned to review a regulation proposal for granting a technical bachelor's degree in the Faculty of Engineering, Member of the Engineering Faculty board, Member of the Advisory

Committee at the Faculty level for obtaining ABET accreditation, Member of the Faculty of Engineering Committee to consider amending the name of the Materials Engineering major and promoting the specialization, Member of the Strategic Plan Committee in the Faculty of Engineering, Member of the Study Plan Committee in the Faculty of Engineering, Member of the Field Training committee in the Faculty of Engineering, Member of the Graduate Studies Committee in the Faculty of Engineering, Member of the planning, Development and Quality Assurance Committee in the Faculty of Engineering, and Member of the committee investigating students' violations and complaints

2021-current Member of the Scientific Research and Graduate Studies committee in the Department of Materials Engineering

2022-2023 Member of the Social Committee and Community Service - Materials Engineering Department

2021-2022 Member of the committee responsible for preparing the hierarchy for the Faculty of Engineering, Member of the Engineering Faculty board, Member of the Follow-up Committee for the required improvements for the Jordanian Quality Assurance Certificate for the Faculty of Engineering, Member of the Development and Quality Assurance Committee in the Material Engineering Department

2020-2021 Member of the Field Training and Industry Liaison Committee in the Materials Engineering Department

2018-2021 Member of the Study Plan and Materials Equivalency Committee in the Department of Material Engineering, Member of the Development and Quality Assurance Committee in the Material Engineering Department

2019-2020 Member of the Investigation Committee of Students' Violations in the Faculty of Engineering, Member of the Field Training Committee in the Faculty of Engineering, Member of the Study Plan Committee in the Faculty of Engineering, Member of the Planning, Development and Quality Assurance Committee in the Faculty of Engineering

2018-2020 Member of the Engineering Faculty board

2014-2015 Member of the study plan and materials equivalency committee in the Department of Material Engineering, Member of the Field Training and Industry Liaison Committee in the Materials Engineering Department

2011-2013 Member of the Engineering Faculty board