



Name: Dr. Ali Al-Zu'bi
Rank: Assistant Professor - Mathematics & Physics

Personal Information

Nationality: German/Jordanian
AU Joining Date: 25.08.2024
E-Mail Address: a.alzubi@au.edu.kw

Professional Information

Education:	• Ph.D., Natural Sciences Jun 2006 – Jun 2010 Technical University of Aachen (RWTH-Aachen) Germany Title: Ab initio investigations of magnetic properties of ultrathin transition-metal films on 4d substrates. • M.Sc., Physics Oct 2003 – Jan 2006 University of Stuttgart Germany Title: Theoretical study of structural defects related to fracture properties of intermetallic Laves phase compounds. • B.Sc., Applied Physics Oct 1998 – Feb 2002 Jordan University of Science & Technology Jordan
Specialization:	Materials Engineering - Computational Modeling & Simulations
Current Academic Position:	Assistant Professor - Mathematics & Physics
Current Professional Positions:	
Previous Administrative Position Held:	
Previous Academic Positions Held:	• Mar 2021 – Aug 2024 American University of Kuwait (AUK) (Assistant Prof.) • Sep 2017 – Jan 2021 PAAET Kuwait (Delegated Lecturer)

	- Sep 2015 – Jun 2017 American University of Middle East (AUM) Kuwait (Assistant Prof.) - Mar 2015 – Aug 2015 Max-Planck Institute for Iron Research (MPIE) Germany (Scientific Guest) - May 2012 – Feb 2015 Forschungszentrum Julich (FZ-Julich) Germany (Postdoc) - Nov 2009 – Oct 2011 Max-Planck Institute for Iron Research (MPIE) Germany (Postdoc)
Fellowships And Honors:	
Teaching Experience:	- Mar 2021 – Aug 2024 American University of Kuwait (AUK) Courses: General Physics I, General Physics II, Introduction to General Physics, Astronomy, Preparatory Mathematics, College Algebra, Calculus II, Differential Equations, Operations Research. - Sep 2017 – Jan 2021 PAAET Kuwait Courses: General Physics I, General Physics II, Physics for Basic Education, Astronomy, Acoustics. - Sep 2015 – Jun 2017 American University of Middle East (AUM) Courses: General Physics I, General Physics II, Calculus I.
Industrial And Technical Experience:	
Research Interest:	- Resistive Switching, Electronic properties of Spintronic materials, and predictive quantum theory of Nano-magnets. - Finite temperature effects: phonons, free energies, and phase diagrams of magnetic shape memory alloys. - Spintronics, Spin filters, Magnetic Semiconductors
Research Grants:	
Research and Publications including Journal and Books:	<u>A. Al-Zubi</u>, G. Bihlmayer and S. Blugel Crystals 9 (11), 580 (2019) DOI: https://doi.org/10.3390/cryst9110580 B. Dutta, A. Cakr, C. Giacobbe, <u>A. Al-Zubi</u>, T. Hickel, M. Acet, J. Neugebauer. Physical Review Letters 116, 025503 (2016) DOI: https://doi.org/10.1103/PhysRevLett.116.025503 T. Ifflander, S. Rolf-Pissarczyk, L. Winking, R. G. Ulbrich, <u>A. Al-Zubi</u>, S. Blugel, and M. Wenderoth Physical Review Letters 114, 146804 (2015) DOI: https://doi.org/10.1103/PhysRevLett.114.146804

	• J. Brede, N. Atodiresei, V. Caciuc, M. Bazarnik, <u>A. Al-Zubi</u>, S. Blugel, R. Wiesendanger. Nature Nanotechnology 9, 1018 (2014) DOI: 10.1038/nnano.2014.235 • J. Millan, S. Sandlöbes, <u>A. Al-Zubi</u>, T. Hickel, P. Choi, J. Neugebauer, D. Ponge, D. Rabe Acta Materialia 76, 94 (2014) DOI: 10.1016/j.actamat.2014.05.016 • T. Hickel, M. Uijtewaal, <u>A. Al-Zubi</u>, B. Dutta, B. Grabowski, and J. Neugebauer. Advanced Engineering Materials 14, 547 (2012) DOI: 10.1002/adem.201200092 • M. Siewert, M. E. Gruner, A. Dannenberg, A. Chakrabarti, H. C. Herper, M. Wuttig, S. R. Barman, S. Singh, <u>A. Al-Zubi</u>, T. Hickel, J. Neugebauer, M. Gillessen, R. Dronskowski, and P. Entel. Applied Physics Letters 99, 191904 (2011) DOI: 10.1063/1.3655905 • <u>A. Al-Zubi</u>, G. Bihlmayer and S. Blugel. Physica Status Solidi (b) 248, 2242 (2011) DOI: 10.1002/pssb.201147090 • <u>Al-Zubi</u>, G. Bihlmayer and S. Blugel. Phys. Rev. B 83, 024407 (2011) DOI: 10.1103/PhysRevB.83.024407 • B. Hardrat, <u>A. Al-Zubi</u>, P. Ferriani, S. Blugel, G. Bihlmayer and S. Heinze. Phys. Rev. B 79, 094411 (2009) DOI: 10.1103/PhysRevB.79.094411
Paper Presentations at Professional Conferences:	• Mar 2014 (Talk): Vacancy-vacancy interaction in SrTiO₃ bulk and surfaces, <u>Annual spring meeting of German Physics Society (DPG)</u> Dresden/Germany • Oct 2013 (Poster): Ab initio study of defects in SrTiO₃ bulk and (100) surfaces <u>Functional oxides for emerging technologies workshop</u> Bremen/Germany • Mar 2013 (Talk): Ab initio study of defects in SrTiO₃ bulk and (100) surfaces <u>Annual spring meeting of German Physics Society (DPG)</u> Regensburg/Germany • Mar 2011 (Talk): Ab initio derivation of chemical trends in the phase temperatures of Ni₂MnGa based shape memory alloys.

	Annual spring meeting of German Physics Society (DPG) Dresden/Germany - Sep 2010 (Talk): Ab initio investigation of temperature dependent effects in magnetic shape memory Heusler alloys. SPP 1239 Convention Tutzing/Germany - Jul 2009 (Poster): Unique playground for non-collinear magnetism: Fe monolayers on hexagonal transition-metal surface. 20th International Colloquium on Magnetic Films and Surfaces Berlin/Germany - Apr 2009 (Poster): Complex magnetism of Fe monolayers on hexagonal substrates. Magnetism in complex systems workshop Vienna/Austria - Mar 2009 (Talk): Ab initio prediction of a novel magnetic phase of Fe on Rh(111). Annual spring meeting of German Physics Society (DPG) Dresden/Germany - Sep 2008 (Poster): Magnetic order and anisotropy of 3d monolayers on Rh(001). Nanomagnetism and Spintronics Prague/Czech Republic - Mar 2008 (Talk): Ultrathin magnetic films on Rh(001) substrate. Annual conference meeting of German Physics Society (DPG) Berlin/Germany - Mar 2007 (Poster): Ultrathin magnetic films on Rhodium substrates. Annual spring meeting of German Physics Society (DPG) Regensburg/Germany
College Service including committee Membership:	2022-2023 (AUK): Environmental Engineering Committee, Library Committee, Research Committee.
National Service:	NA
College Committees:	- Students Appeal and Complaint Committee (Department Committee) - Quality Management Committee (Department Committee) - Curriculum Committee (Department Committee) - Teaching, Learning, Validation & Moderation Committee (Department Committee) - Labs and Workshop Committee (Department Committee) - Research and Faculty Development Committee (Department Committee) - Appointment and Promotion Committee (Department Committee)