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CURRICULUM VITAE

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EMPLOYMENT

2014 – present	Head, Physics Department, Nuclear Research Centre – Negev, Israel.
2013 – 2014	Senior Research Scientist, Physics Department, Nuclear Research Centre – Negev, Israel
2012 – 2013	Visiting Research Scientist, Materials Science and Engineering, Drexel University, Philadelphia PA, USA (On sabbatical leave from the Nuclear Research Centre – Negev, Israel)
2007 - 2012	Head, Laboratory of Experimental Physics, Physics Department, Nuclear Research Centre - Negev, Israel.
2003 - 2007	Researcher in Physics Department, Nuclear Research Centre - Negev, Israel.
2001 - 2003	Postdoctoral position in Materials Science Division, Argonne National Laboratory, Argonne IL, USA. Main subject: "Crystallography and Magnetism of novel oxide materials". Supervisor: Dr. James D. Jorgensen, Argonne National Laboratory, Argonne IL, USA.
2000 - 2001	Researcher in Physics Department, Nuclear Research Centre - Negev, Israel.

ACADEMIC TITLE

2013 – present	Visiting Research Professor, Materials Science and Engineering, Drexel University, Philadelphia PA, USA

EDUCATION

1998 - 2001	Ph.D. in Physics, The Kreitman School of Advanced Graduate Studies, Ben-Gurion University of the Negev, Beer-Sheva, Israel. Thesis: "Magnetism of A atoms in intermetallic compounds, AM_2X_2 (A = lanthanide, U; M = transition metal; X = Ge, Si)". Supervisors: Prof. H. Shaked, Ben-Gurion University of the Negev, Beer-Sheva, and Dr. M. Melamud, Nuclear Research Centre - Negev.
1995 - 1998	MSc. in Physics, Physics Dept., Ben-Gurion University of the Negev, Beer-Sheva, Israel. Research subject: "Magnetism of randomly distributed A atoms in ACo_2Ge_2 (A = $Nd_{1-x}Tb_x$; $U_{1-x}Nd_x$)". Supervisors: Prof. H. Shaked, Ben-Gurion University of the Negev, Beer-Sheva, and Dr. M. Melamud, Nuclear Research Centre - Negev.
1991 - 1995	BSc. in Physics and Materials Engineering, Cum Laude, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

GRANTS

2018-	"Equipment for magnetic properties measurement of MAX/MXene and more", PAZY Foundation equipment grant (with Prof. Amit Keren, Technion).
2014-2017	"A novel liquid-xenon detector concept for combined fast-neutron and gamma imaging", PAZY Foundation research grant (with Prof. Amos Breskin, Weizmann Institute).

AWARDS AND SCHOLARSHIPS

2012	Head of the Nuclear Research Centre – Negev excellence in research award.
2011	Head of the Nuclear Research Centre – Negev note of appreciation on excellent research in annual review.
2008	Head of the Israeli Atomic Energy Commission excellent project award (as a participant in a larger team).
2000	"Katzir" scholarship for excellence in scientific research in governmental institutes, NRCN (given for a period of six years).
1992	Citation of Excellency, 2nd year of undergraduate studies, Ben-Gurion University of the Negev, Beer-Sheva, Israel.
1991	Full year Excellency Scholarship, 1st year of undergraduate studies, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

INVITED TALKS

2018 "*High-temperatures atomic displacement parameters in MAX phase: rattling of A elements*", THERMEC 2018 – Processing & Manufacturing of Advanced Materisl, Paris, France.

2018 "*Understanding the magnetic properties of nano-laminated ternary carbides, nitrides, and norides: the role of neutron scattering*", CIMTEC 2018 – International Ceramic Congress, Perugia, Italy.

2017 "*Texture of EBM and SLM additively manufactured Ti-6Al-4V*", Israeli Physical Societies 2017, Haifa, Israel.

2013 "*Neutron diffraction evidence of IKB formation in textured Ti_2AlC MAX phase*", Materials Science and Engineering, Drexel University, Philadelphia, PA, USA; Materials Science Division, Argonne National Laboratory, Argonne, IL, USA.

2010 "*Did they fought with silver axes 4000 years ago? (Neutron diffraction study of Levantine Middle Bronze Age cast axes*", 1st bilateral workshop of the JRC-IAEC cooperation, Ein-Gedi, Israel; Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

2003 "*Competition among charge- orbital- and spin-ordering in $(Ca_{1-x}Ce_x)MnO_3$: a complementary x-ray synchrotron and TOF neutron diffraction study*", Frontiers in powder diffraction, 2003 NSLS users' meeting, Brookhaven National Laboratoey, NY, USA.

REFEREE OF SCIENTIFIC PUBLICATIONS AND PROPOSALS

Book review *Micromagnetism and the Microstructure of Ferromagnetic Solids*, H. Kronmiiller and M. Fahnle, Materials Research Bulletin 40, 573 (2005).

Papers reviewed for: Physical Review B, Journal of Solid State Chemistry, Materials Research Bulletin, Solid State Communications, Journal of Physics Condensed Matter, Journal of Physics Conference Series, Journal of Instrumentation, Inorganic Chemistry, Materials Research Letters, Journal of the American Ceramic Society, Scientific Reports

Scientific proposals review for the neutron scattering user group of the Bragg Institute, Lucas Heights, NSW, Australia.

MAJOR RESEARCH EXPERIENCE & INTERESTS

Neutron scattering: Investigation of the crystallographic and magnetic structures and interactions of materials; Investigation of pair distribution function of liquids; Non-destructive study of archeological artifacts; Mechanical properties of archaeological artifacts; Investigation of structural properties of biogenic materials; In-situ mechanical properties of

ceramics and metallic compounds, and their dependence of crystal structure. Characterization of AM materials.

Crystallographic, electronic, magnetic, and magnetocaloric properties of advanced ceramics, such as MAX (M=transition metal, A=A group element, X=C, or N), and MAB (B=boron) phases, and possible applications.

Structural, mechanical, and textural properties of additively manufactured (AM) materials. Comparison of different AM methods and among AM and conventional manufacturing methods.

Indirect magnetic interactions via conduction electrons, i.e. the s-f hamiltonian, RKKY interactions and Kondo effect.

Complementary experimental methods, e.g. magnetic susceptibility, SQUID magnetization, X-ray diffraction, Synchrotron X-ray diffraction NMR, etc.

Designing a Multi-detector for neutron diffraction at the IRR-II.

Designing 3 rd generation TOF neutron detector at the IPNS.

Determination of delayed neutrons source time dependence based on in pile kinetic measurements.

Special nuclear materials interrogation using active and passive nuclear methods.

COLLABORATIONS (PAST and CURRENT)

Prof. Martha Greenblatt, Rutgers University, NJ, USA: *Order phenomena in CMR manganites*.

Dr. Lukas Keller, SINQ Facility, Paul Scherrer Institut, Villigen, Switzerland: *Magnetic structure of intermetallic boride compounds*.

Dr. Robert von Dreele, Intense Pulsed Neutron Source, Argonne National Laboratory, Argonne, USA: *Neutron diffraction study of biogenic materials*.

Prof. Emil Zolotoyabko, Faculty of Materials Engineering, Technion, Israel: *crystallographic studies of geological and biological phases*.

Prof. Israel Felner, Racah Institute of Physics, Hebrew University, Jerusalem, Israel: *Magnetic properties of intermetallic materials*.

Profs. Shaul Goren and Hagai Shaked, Physics Department, Ben-Gurion University of the Negev, Beer-Sheva, Israel: *magnetic properties of intermetallic boride compounds*.

Dr. Maxim Avdeev, Bragg Institute, Australia Nuclear Science and Technology Organization, Sydney, Australia: *magnetic structure and properties of intermetallic boride compounds; crystallographic and magnetic properties of complex oxides*.

Dr. Brigitte Beuneu, Laboratoire Leon Brillouin, Saclay, France: *Neutron diffraction study of liquid metals*.

Dr. Raymond Osborn, Intense Pulsed Neutron Source, Argonne National Laboratory, USA: *Inelastic neutron scattering of intermetallic boride compounds*.

Prof. Sariel Shalev, Weizmann Institute & Haifa University, Israel: *Non-destructive study of archaeological artifacts*.

Dr. Bent Pedersen, and Dr. Reinhard Bemdt, PUNITA, IPSC institute, Italy: *Special nuclear material interrogation by active and passive methods*.

Prof. Amos Breskin, Weizmann Institute, Rehovot, Israel: *A novel liquid-xenon detector concept for combined fast-neutron and gamma imaging*

Dr. Sven C. Vogel, Los Alamos National Laboratory, *Characterization of additively manufactured materials*.

Prof. Michel Barsoum, Materials Science and Engineering, Drexel University, USA: *In-situ mechanical properties of ceramic and metallic compounds using neutron scattering. Crystallographic, magnetic, and electronic properties of advanced ceramics.*

Prof. Thierry Cabioc'h, Institut P', Université de Poitiers, Poitiers, France: *Characterization of novel MAX phase ceramics*.

Prof. Johanna Rosen, Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping, Sweden: *Crystallographic, magnetic, and electronic properties of advanced ceramics.*

Prof. Amit Keren, Techion, Haifa, Israel: *Crystallographic, magnetic, and electronic properties of advanced ceramics.*