Dr. Ofer Beeri

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Education

1994-2001	**Ph.D.** (Direct Doctoral Track), Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel. Research supervisors: Prof. Moshe H. Mintz, Prof. Levy Kornblit, Dr. Zamir Gavra. Thesis subject: "Classical and Statistical Thermodynamics of Unstable Intermetallic Hydrides at Hydrogen Pressures Up to 1,000 Atmospheres", Research supervisors: Prof. Moshe H. Mintz, Prof. Levy Kornblit, Dr. Zamir Gavra.
1990-1993	**B.Sc. with excellence,** Department of Materials Engineering (Electronic & Structural Materials), Ben-Gurion University of the Negev, Beer-Sheva, Israel.

Employment

2003-present, 1993-2001	NRCN (Nuclear Research Center Negev), Israel.
2013-2014	Sabbatical at the department of materials engineering, Ben-Gurion university of the Negev, Beer-Sheva, Israel.
2005-2006	Sabbatical at the department of materials science and engineering, northwestern university, USA.
2001-2003	TeraCross LTD. (startup that designed a switch fabric chipset for terabit routers).
1992-1994	Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

Professional and Administrative Activities

2017-present	**Deputy of the Head of Materials Department,** NRCN, Israel.
2016-present	**Head of the Metallurgy Group,** materials department, NRCN. This group is in charge on metallurgical characterization and mechanical testing for the whole organization and also acts as a consultant for materials selection, inspection and characterization as well as on failure analysis.
2014-2016	**Deputy of the Head of Physics Department,** NRCN, Israel.

2013-2014	**Research Fellow**, Sabbatical at the department of materials engineering, Ben-Gurion university of the Negev, Beer-Sheva, Israel. Subjects: Thermoelectricity and especially the correlation between microstructure and transport properties. Host: Prof. Yaniv Gelbstein.
2008-2013	**Head of the Physical-Metallurgy Group**, physics department, NRCN.
2003-2005, 2006-2008	**Researcher**, Physical-metallurgy group, physics department, NRCN. Studying metallurgical behavior of alloys and intermetallics as a function of preparation processes. This includes a variety of phenomena such as phase transitions, microstructure evolution, precipitation thermodynamics and kinetics, etc.
2005-2006	**Visiting Scientist,** Sabbatical at the department of materials science and engineering, Northwestern University, USA. Subjects: 1. Role of impurities on precipitation kinetics of dilute Al-Sc alloys – classical characterization techniques and local electrode atom probe (LEAP) tomography; 2. Internal stress induced plasticity in Pd wire induced by hydrogen charging-discharging. Hosts: Prof. David C. Dunand and Prof. David N. Seidman.
2001-2003	**In Charge of System Simulation and Verification,** TeraCross LTD. (startup that designed a switch fabric chipset for terabit routers). This subject has been totally different then my metallurgical expertise. However, during this period I have been acquainted with communication, computer simulations, hardware testing, algorithm design and system architecture.
1993-2001	**Researcher**, materials R&D department, NRCN. Studying the thermodynamic and kinetic properties of intermetallic hydrides under high pressures and hydrogen-structural materials interactions including diffusion, permeability and embrittlement. Utilizing experimental as well as theoretical methods for the interpretation of the data. Also associated with alloys preparation and characterization.
1992-1994	**Teaching Assistant**, in the physical metallurgy course and diffusivity lab for undergraduate students, Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

Awards and Honors

1993	**B.Sc. with excellence**, Department of Materials Engineering (Electronic & Structural Materials), Ben-Gurion University of the Negev, Beer-Sheva, Israel.
2003-2008	**The Katzir scholarship** to promising Israeli scientists specializing in the fields of engineering, electronics and core sciences.
2013	**Distinguished employee, physics department**, Nuclear Research Center Negev.

Academic Activities

- **Grants:**

  1. Ofer Beeri (PI), Noam Eliaz and Sigalit Ifargane, "Synergism of stress and hydrogen environment on advanced steel", Pazi foundation, grant no. 205, 700,000 NIS (2009-2013).

  2. Arthur Shoihet, Raul Rabinovici and Ofer Beeri (PI), "Development of a system for melting of metal levitated electromagnetically", Pazi foundation, grant no. 242, 355,000 NIS (2011-2015).

- **Review of scientific publications (peer reviewed journals):** About one publication per year since 2005.

- **Referee of the research proposal:** "Light pseudobinary intermetallic compounds with reversible hydrogen storage ability", submitted to the ministry of science and technology for the MOST Israel – Infrastructure program 2011 "Alternative and renewable energy source with emphasis on oil replacement for transportation", September 2011.

- **Referee of M.Sc. thesis:**

  1. Joseph Davidow, "The development of highly efficient thermoelectric materials based on $Pb_{1-x}Ge_xTe$", Ben-Gurion University of the Negev (2014).

  2. Kiril Kiriyevsky, "Phase separation and antisite defects in the thermoelectric TiNiSn half-Heusler alloy", Ben-Gurion University of the Negev (2014).

  3. Lior Weintraub, "Development of thermoelectric materials based on $(GeTe)_x(Bi_2Te_3)_{1-x}$", Ben-Gurion University of the Negev (2015).

  4. Ariel Shaskin, "Defects and interfaces in Ag – alloyed PbTe compounds for thermoelectric applications", Technion (2018).

Educational Activities

Courses taught

1. Since 2017 to present teaching the course "Materials selection in metallurgical research" for graduate students at the department of materials engineering, Ben-Gurion university of the Negev, Beer-Sheva.

Research students

1. Ph.D. thesis

   2014-2020 Oshrat Appel, "Development of highly efficient half-Heusler-based thermoelectric materials" (as official superviser together with Prof. Yaniv Gelbstein).

2. M.Sc. thesis

   2014 Oded Rotem, "Development of a concentrated thermoelectric-photovoltaic hybrid system" (Prof. Yaniv Gelbstein was the official supervisor, I was research advisor).

   2015 Gregory Roizin, "Vertical power MOS transistor as a thermoelectric quasi nano wire" (Prof. Yaniv Gelbstein was the official supervisor, I was research advisor).

2015 Omer Meroz, "Development of highly efficient bismuth telluride based thermoelectric materials" (Prof. Yaniv Gelbstein was the official supervisor, I was research advisor).

2016 Tal Bargig, "Development of advanced Bi-Te based TEG for higher efficiency PV-TE hybrid system: numerical modeling and experimental verification" (as official superviser together with Prof. Yaniv Gelbstein).

3. B.Sc. final project

2014 Tom Shalev, "Investigation of the influence of $MoSe_2$ on the thermoelectric properties of n-type $Bi_2(Te_{0.8}Se_{0.2})_3$" (together with Prof. Yaniv Gelbstein).

2015 Dana Ben-Ayoun, "Enhancement of the thermoelectric properties of n-type $Bi_2(Te_{0.8}Se_{0.2})_3$ by mechanical alloyin" (together with Prof. Yaniv Gelbstein).

2015 Roi Vizel, "Bonding of Bi_2Te_3-based thermoelectric legs to metallic contacts using $Bi_{0.82}Sb_{0.18}$ alloy" (together with Prof. Yaniv Gelbstein).

2015 Ana Ziferat and Niv Vangrovsky, "Bonding of Bi_2Te_3-based thermoelectric legs to Cu bridge using $Sn_{96.5}Ag_3Cu_{0.5}$" (together with Prof. Yaniv Gelbstein).

2018 Tal Zaharoni, "Development of advanced half-Heusler materials for thermoelectric application" (together with Prof. Yaniv Gelbstein and Oshrat Appel).