

## CURRICULUM VITAE AND LIST OF PUBLICATIONS

### **Personal Details:**

Name: **Prof. Yaniv Gelbstein**

Status: **Married plus four children.**

Date and place of birth: **28/04/1971, Jerusalem.**

Regular military service (dates): **Electronics, Air Force (1990-1993)**

Address and telephone number at work:

**Department of Materials Engineering, Ben-Gurion University of the Negev  
84105, Beer-Sheva, Israel. Phone: 972-8-6428753.**

Address and telephone number at home:

**11 Ein-Akev, Lehavim 85338, Israel. Phone: 927-8-6487880.**

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ORCID iD: **0000-0001-8650-0054.**

### **Education:**

**B.Sc. -**

**1994-1997** – Ben-Gurion University – Department of Materials Engineering.

**M.Sc. -**

**1998-2001** - Ben-Gurion University – Department of Materials Engineering.

Name of advisor: Prof. M.P. Dariel.

Title of thesis: Synthesis of a graded *n*-type PbTe by Powder Metallurgy.

**Ph.D. -**

**2002-2006** - Ben-Gurion University – Department of Materials Engineering.

Name of advisors: Prof. M.P. Dariel and Prof. Z. Dashevsky.

Title of thesis: Research and Development of Thermoelectric Highly Efficient Graded Structures Based on  $Pb_{1-x}Sn_xTe$  Using Powder Metallurgy.

### **Employment History:**

- 2017-present** - Professor in the Department of Materials Engineering, Ben-Gurion University of the Negev.
- 2015-** (1<sup>st</sup> of Aug. 2015) Permanency at the Department of Materials Engineering, Ben-Gurion University of the Negev.

3. **2014-2017** – Associate Professor in the Department of Materials Engineering, Ben-Gurion University of the Negev.
4. **2011-2014** – Senior Lecturer in the Department of Materials Engineering, Ben-Gurion University of the Negev.
5. **2010-2011**- Adjunct Lecturer in the Department of Materials Engineering, Ben-Gurion University of the Negev.
6. **2010**- Teacher Part-Time in the Department of Materials Engineering, Ben-Gurion University of the Negev.
7. **1999-2011**- Head of the Group of Materials Development, Laboratory of energy, R&D Division, NRCN.
8. **1997-1999**- Researcher in the Group of Materials Development, Laboratory of energy, R&D Division, NRCN.

### **Professional Activities:**

#### **a. Positions in academic administration**

1. 2021- Elected BGU Senate representative in the University's Board of Governors.
2. 2021- Elected member of the searching committee for the BGU's Rector.
3. 2021- Elected member to the academic committee (Vaada Merakezet) of the BGU's Senate.
4. 2020- Elected member of the Ben Gurion University of the Negev Faculty Association for the period of 2020-2023.
5. 2020- Elected chair of the election committee for the Dean of Engineering for the period of 2020- 2023.
6. 2019- Elected member of the searching committee for the Dean of Engineering for the period of 2020- 2023.
7. 2019-2022- 2<sup>nd</sup> period as the Head of the Department of Materials Engineering, BGU.
8. 2019- Elected BGU Senate representative in the University's Board of Governors.
9. 2019- Incumbent of the Samuel Ayrton Chair in Metallurgy, Ben-Gurion University of the Negev.

10. 2018- Member of the Blechner Center of Industrial Catalysis & Process Development, Ben-Gurion University of the Negev.
11. 2017- Elected member of Ben-Gurion University's Senate.
12. 2016-2019- 1<sup>st</sup> period as the Head of the Department of Materials Engineering, BGU.
13. 2015-2016- Head of the Unit of Energy Engineering, BGU.
14. 2013- Associate Member in the “Laboratory on Direct Energy Conversion and Nano-engineering of Thermoelectric Structures” in St. Petersburg National Research University of Information Technologies, Mechanics and Optics (NRU ITMO).
15. 2011-2016- Head of the Laboratory of Thermoelectrics and Chairman of the Discipline of Electronic Materials in the Department of Materials Engineering, Ben-Gurion University of the Negev.
16. 2011-2015- Chairman of the Graduate Student Committee and leader of the field of Thermoelectrics, in the Unit of Energy Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

**b. Professional functions outside universities/institutions**

1. 2022- Member of the International Advisory Committee of the 12<sup>th</sup> International Conference on Materials Science & Engineering BRAMAT 2022, 9-12 March 2022, Brasov, Romania.
2. 2022- Member of the Israel Science Foundation (ISF) Materials & Nanotechnology professional scientific committee.
3. 2019- Control board member in the Pearls of Wisdom association.
4. 2019- Co-organizer of the symposium EP13- Thermoelectrics – Materials, Methods and Devices, 2019 MRS spring meeting, April 22-26, 2019, Phoenix, Arizona.
5. 2019- Member of the Scientific Committee of the ICT-2019 conference to be held in Gyeong-Ju, Korea, from June 30<sup>th</sup> to July 4<sup>th</sup> 2019.
6. 2019- Chair of the synthetic fuels session of the Winter School on Nanomaterials for Energy Storage and Conversion at Tel-Aviv University, Jan 16<sup>th</sup> 2019.
7. 2018- Member of the Judging Committee for funding of 3D printing proposals by the Israeli Ministry of Science and Technology 2018.

8. 2018- Member of the International Advisory Board of the 16<sup>th</sup> Russian Conference on Thermoelectrics and their Applications (RCT-2018), Sankt-Petersburg, Russia, Oct. 8-11, 2018.
9. 2018- Member of the Israel Vacuum Society (IVS) Award Committee for 2018, July 2018.
10. 2018- Member of the Best Poster Award Committee of the International Conference on Thermoelectrics (ICT2018), Caen, France, 1<sup>st</sup>-5<sup>th</sup> of July 2018.
11. 2018- Member of the Steering Committee of the 18<sup>th</sup> Israel Materials Engineering Conference, IMEC-18, Feb. 2018.
12. 2018- Head of the Best Poster Award Committee of the 18<sup>th</sup> Israel Materials Engineering Conference, IMEC-18, Feb. 2018
13. 2018- Member of the International Advisory Board of symposium FF, Progress in Materials and Devices for Direct Thermal-to-Electric Energy Conversion, of the Forum on New Materials, the 14<sup>th</sup> International Ceramics Congress (June 4-8 2018) and the 8<sup>th</sup> Forum on New Materials (June 10-14 2018), CIMTEC 2018, to be held in Salsomaggiore Terme, Italy.
14. 2017- A member in the reviewing committee of proposals submitted to the Israeli Ministry of Environmental Protection, in the frame of the Alternative Fuels for Transportation call (Sep. 2017)
15. 2017- A member in the reviewing committee of the BEETHOVEN 2 – Polish (Narodowe Centrum Nauki) - German (Deutsch Forschungsgemeinschaft, DFG) Funding Initiative Call for proposals 2016 (Apr. 2017).
16. 2016- General Committee member in the Pearls of Wisdom association.
17. 2016- A member of the reviewing committee of the American Chemical Society (ACS) Petroleum Research Fund (PRF) for reviewing of the thermoelectric related 57619-DNI10 project.
18. 2016- A member of the scientific committee of the EMN (Energy Materials Nanotechnology) Meeting on Thermoelectric Materials (Orlando, FL, February 21-25, 2016).
19. 2016- A member in the reviewing committee of the French National Research Agency (ANR) for reviewing of thermoelectric related

- projects in the frame of the AAP (Appel à projets générique) -2016 call (Jan. 2016).
20. 2016- A member of the scientific committee of the Materials and Systems for Micro-Energy Harvesting and Storage session, in E-MRS Spring meeting (Lille, May 2-6, 2016).
  21. 2015- Sustainability Session chair, The 33<sup>rd</sup> Israel Vacuum Society conference – IVS 2015, September 9, 2015, David Lopatie Conference Center, The Weizmann Institute of Science, Rehovot, Israel.
  22. 2014- Member of the international advisory board of symposium FD "Advances in Materials and Technologies for Efficient Direct Thermal-to-Electrical Energy Conversion" of the Forum on New Materials, the 13<sup>th</sup> International Ceramic Congress (June 8-13 2014) and the 6<sup>th</sup> Forum on New Materials (June 15-20 2014), CIMTEC 2014, Montecatini Terme, Tuscany, Italy.
  23. 2013- Thermoelectrics Symposium Chair, 2<sup>nd</sup> International Conference on Materials for Energy, EnMat II, May 12-16, Karlsruhe Convention Center, Germany.
  24. 2009- A member in the scientific committee of the international conference on thermoelectrics, ICT-09 (Freiburg).
  25. 2008- A member in the scientific committee of the thermoelectric session in EMRS-08 (Strasbourg).

c. Editor or member of editorial board of scientific or professional journal

1. 2021 Guest Editor in *Materials* for the Special Issue “Advances in Thermoelectric Materials-II”
2. 2019 Guest Editor in *Materials* for the Special Issue “Advances in Thermoelectric Materials”
3. 2019 Editorial Board Member of *Materials*, MDPI publishing.
4. 2018 Editorial Board Member for the *International Journal of Materials Science and Research (IJMSR)*.
5. 2017 Guest Editor in *Materials* for the Special Issue “Heusler and Half-Heusler Alloys”
6. 2016 Guest editor of a special issue of *Advances in Condensed Matter Physics*.

7. 2013 Guest editor of the special issue on "Nano-structured based semiconducting materials", *Journal of Nanothermoelectrics*.
8. 2009-2013 Guest editor of the *Journal of Electronic Materials*.

**d. Membership in professional/scientific societies**

1. 2010- Israel Materials and Process Society.
2. 2009- European Microscopy Society.
3. 2006- Israel Society for Microscopy.
4. 1999- International Thermoelectric Society.

**Educational activities**

**a. Courses taught**

1. "Transport phenomena in materials science", an undergraduate course in the Department of Materials Engineering, Ben-Gurion University of the Negev.
2. "Non Destructive Testing", an undergraduate course in the Department of Materials Engineering, Ben-Gurion University of the Negev.
3. "Semiconductors Technology", an undergraduate course in the Department of Materials Engineering, Ben-Gurion University of the Negev.
4. "Alternative Energy Sources B", a graduate course in the Unit of Energy Engineering, Ben-Gurion University of the Negev.
5. "Electronic properties of semiconductors", an undergraduate course in the Department of Materials Engineering, Ben-Gurion University of the Negev.

**b. Research students**

**Ph.D students :**

1. Shlomo Harush (with Prof. Roni Shneck 2013-2017)
2. Yatir Sadia (2014-2020)
3. Oshrat Appel (2014-2020)
4. Omer Meroz (2015-2021)
5. Dana Ben-Ayoun (2017-2021)
6. Chen Churi Barad (2018- estimated to finish at 2022)
7. Kiril Kirievsky (with Prof. David Fuks 2019-2021)

8. Daniel Rabin (with Prof. David Fuks 2019-)
9. Yoav Snir (with Prof. Dan Eliezer and Dr. Alex Landau 2014-)
10. Hagay Hayun (2019-)
11. Meital Cahana (2019-)
12. Asaf Levy (with Dr. Gil Bernstein Toker from Orbotech) (2020-)

**M.Sc students (Thesis):**

13. Boaz Dado (2009-2011)
14. Yoav Rosenberg (2010-2012)
15. Yatir Sadia (2010-2013)
16. Nahum Bomshtein (2010-2012)
17. Oshrat Barzilai-Appel (2011-2014)
18. Joseph Davidow (2011-2014)
19. Eden Hazan (2012-2014)
20. Kiril Kirievsky (2012-2014)
21. Oded Rotem (2012-2014)
22. Lior Weintraub (2012-2015)
23. Sagi Appel (with Dr. Maya Bar-Sadan 2012-2015)
24. Idan Cohen (2013-2015)
25. Omer Meroz (2013-2015)
26. Gregory Roizin (2013-2015)
27. Gilad Guttman (2013-2015)
28. Reuben Gertner (2013- 2018)
29. Gal Shekel (2013-2016)
30. Tal Bargig (2014-2016)
31. Roy Wolf (2014- 2019)
32. Itai Azuelus (2014- 2018)
33. Naor Madar (2014-2016)
34. Dana Ben-Ayoun (2015- 2017)
35. Maor Kaller (2015- 2017)
36. Genady Komisarchik (2015- 2017)
37. Tsvika Zilber (2015- 2018)
38. Doron Granit (2015- 2017)
39. Nir Menachem (2015-2017)

40. Israel (Izel) Maden (with Dr. Guy Ben-Hamu) (2016-2017).
41. Meital Kamilyan (with Prof. Dan Eliezer) (2016-2017).
42. Polina Metalnikov (with Prof. Dan Eliezer and Dr. Guy Benhamou) (2016- 2017)
43. Dimitri Gridchin (with Dr. Magal Saphier) (2016-2018)
44. Hagay Hayun (2016-2018).
45. Guy Elkobi (2017-2020).
46. Chen Churi Barad (2016-2018).
47. Ariel Loutati (2018-2020).
48. Sapir Cohen (2018-2020).
49. Lilach Luzzatto (with Dr. Ilan Pribar) (2017-2020).
50. Emanuel Markman (with Dr. Ilan Pribar) (2019-2021).

## **Awards, Citations, Honors, Fellowships**

### *a.* Honors, Citation Awards

1. 1996- Excellency in 3<sup>rd</sup> year B.Sc. studies, BGU.
2. 1997- Excellency in 4<sup>th</sup> year B.Sc. studies, BGU.
3. 1998- B.Sc graduation Magna Cum Laude, BGU.
4. 2002- M.Sc graduation Summa Cum Laude, BGU.
5. 2006- Appreciation certificate for a great contribution to the teaching in the Department of Materials Engineering, BGU.
6. 2010- Excellent lecturer acknowledgement of the faculty of engineering, Ben-Gurion University of the Negev.
7. 2012- Excellent lecturer acknowledgement of the rector, Ben-Gurion University of the Negev.
8. 2013- "Green Campus" Prize for Excellent Research Studies of Students in the Field of "Green" Environment. Awarded for the work of the B.Sc student Idan Cohen for his engineering project in Development of Thermoelectric Materials for Renewable Energy Applications".
9. 2014-2019 – Acknowledgment of excellency in publications (No. 3 in the Faculty) and research grants (No. 5 in the Faculty) turnouts of the Faculty of Engineering, BGU.
10. 2014- Excellent lecturer acknowledgement of the rector, Ben-Gurion University of the Negev.

11. 2015- Excellent lecturer acknowledgement of the rector, Ben-Gurion University of the Negev.
12. 2016- Excellent lecturer acknowledgement of the rector, Ben-Gurion University of the Negev.
13. 2018- Persistent (at least 3 times out of the past 5 years) excellent lecturer acknowledgement of the rector, Ben-Gurion University of the Negev.
14. 2019- Excellent researcher and lecturer (1 of 6 elected excellent faculty members of the Faculty of Engineering), representing BGU on its 50<sup>th</sup> anniversary.
15. 2020- "Green Campus" Prize for Excellent Research Studies of Students in the Field of "Green" Environment. Awarded for the work of the Ph.D student Hagay Hayun for his research in "Enhancing solid oxide fuel cells using advanced composite ceramics".

## Scientific Publications

### a. Refereed articles and refereed letters in scientific journals

(ISI *h*-index- 44; citations- *total*-3693, *without self citations*-3104)

Index: S-student, C-collaborator, PI- principle investigator.

1. **Y. Gelbstein**<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "High Performance *n*-type PbTe-Based Materials For Thermoelectric Applications", *Physica B*, **363** 196-205 (2005). (*IF*-1.327, *JR*-51/68, *Q3 in Condensed Physics*, 125 citations).
2. **Y. Gelbstein**<sup>PI</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Powder Metallurgical Processing of Graded *p*-Pb<sub>1-x</sub>Sn<sub>x</sub>Te For Thermoelectric Applications", *Physica B*, **391** 256-265 (2007). (*IF*-1.327, *JR*-51/68, *Q3 in Condensed Physics*, 31 citations).
3. **Y. Gelbstein**<sup>PI</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "In-doped Pb<sub>0.5</sub>Sn<sub>0.5</sub>Te *p*-type Samples Prepared by Powder Metallurgical Processing for Thermoelectric Applications", *Physica B*, **396** 16-21 (2007). (*IF*-1.327, *JR*-51/68, *Q3 in Condensed Physics*, 8 citations).
4. O. Ben-Yehuda<sup>S</sup>, **Y. Gelbstein**<sup>C</sup>, Z. Dashevsky<sup>C</sup>, R. Shuker<sup>PI</sup> and M.P. Dariel<sup>PI</sup>, "Highly textured Bi<sub>2</sub>Te<sub>3</sub>-based materials for thermoelectric energy conversion", *Journal of Applied Physics* **101**, 113707 (2007). (*IF*-2.210, *JR*-33/116, *Q1 in Applied Physics*, 25 citations).
5. **Y. Gelbstein**<sup>PI</sup>, Z. Dashevsky<sup>C</sup>, R. Kreizman<sup>S</sup>, Y. George<sup>T</sup>, M. Gelbstein<sup>C</sup> and M.P. Dariel<sup>C</sup>, "Annealing Effects on Powder Metallurgy Based Pb<sub>1-x</sub>Sn<sub>x</sub>Te Materials for

- Thermoelectric Applications", *Key Engineering Materials* Vols. 336-338, pp. 860-863 (2007). (*citations data not available*)
6. **Yaniv Gelbstein<sup>PI</sup>**, Zinovi Dashevsky<sup>C</sup>, Moshe P. Dariel<sup>C</sup>, "Highly Efficient Bismuth Telluride Doped *p*-type  $\text{Pb}_{0.13}\text{Ge}_{0.87}\text{Te}$  for Thermoelectric Applications", *Phys. Stat. Sol. (RRL)* **1**(6) 232-234(2007). (*IF-2.660, JR-41/222, Q1 in Materials, 21 citations*).
  7. **Y. Gelbstein<sup>PI</sup>**, G. Gotesman<sup>S</sup>, Y. Lishzinker<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>C</sup>, "Mechanical Properties of PbTe- Based Thermoelectric Semiconductors", *Scripta Materialia* **58** 251-254 (2008). (*IF-2.086, JR-37/222, Q1 in Materials, 35 citations*).
  8. J. Sariel<sup>C</sup>, I. Dahan<sup>C</sup>, **Y. Gelbstein<sup>PI</sup>**, "Rhombic-Cubic Phase Transition Characterization of (Pb,Ge)Te Using High Temperature XRD", *Powder Diffraction*, **23**(2) 137 (2008). (*IF-0.544, JR-19/32, Q3 in Materials - Characterization, 5 citations*).
  9. **Y. Gelbstein<sup>PI</sup>**, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>C</sup>, "The search for mechanically stable PbTe based thermoelectric materials", *Journal of Applied Physics* **104**, 033702 (2008). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 25 citations*).
  10. **Y. Gelbstein<sup>PI</sup>**, O. Ben-Yehuda<sup>C</sup>, E. Pinhas<sup>S</sup>, T. Edrei<sup>S</sup>, Y. Sadia<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>C</sup>, "Thermoelectric properties of (Pb,Sn,Ge)Te based alloys", *Journal of electronic materials*, **38**(7) 1478 (2009). (*IF-1.390, JR-90/222, Q2 in Materials, 27 citations*).
  11. **Yaniv Gelbstein<sup>PI</sup>**, "Thermoelectric Power and Structural Properties in Two Phase Sn/SnTe Alloys", *Journal of Applied Physics* **105**, 023713 (2009). (*IF-2.210, Q1 in Applied Physics, JR-33/116, 25 citations*).
  12. **Yaniv Gelbstein<sup>PI</sup>**, Ohad Ben-Yehuda<sup>C</sup>, Zinovy Dashevsky<sup>C</sup> and Moshe. P. Dariel<sup>C</sup>, "Phase Transitions of *p*-type (Pb,Sn,Ge)Te Based Alloys for Thermoelectric Applications", *Journal of Crystal Growth* **311** 4289–4292 (2009). (*IF-1.737, Q2 in Crystallography, JR-11/25, 5 citations*).
  13. **Yaniv Gelbstein<sup>PI</sup>**, Boaz Dado<sup>S</sup>, Ohad Ben-Yehuda<sup>C</sup>, Yatir Sadia<sup>S</sup>, Zinovy Dashevsky<sup>C</sup> and Moshe P. Dariel<sup>C</sup>, "High Thermoelectric Figure of Merit and Nanostructuring in Bulk *p*-type  $\text{Ge}_x(\text{Sn}_y\text{Pb}_{1-y})_{1-x}\text{Te}$  Alloys Following a Spinodal Decomposition Reaction", *Chemistry of Materials* **22**(3) (2010), 1054-1058. (*IF-6.397, Q1 in Materials, JR-12/222, 39 citations*).
  14. **Yaniv Gelbstein<sup>PI</sup>**, Boaz Dado<sup>S</sup>, Ohad Ben-Yehuda<sup>C</sup>, Yatir Sadia<sup>S</sup>, Zinovy Dashevsky<sup>C</sup> and Moshe P. Dariel<sup>C</sup>, "Highly Efficient Ge-rich  $\text{Ge}_x\text{Pb}_{1-x}\text{Te}$

- Thermoelectric Alloys", *Journal of Electronic Materials*, **39** (9), 2049 (2010). (*IF-1.390, JR-90/222, Q2 in Materials, 25 citations*).
15. Boaz Dado<sup>S</sup>, Yaniv Gelbstein<sup>PI</sup>, Dimitri Mogilansky<sup>C</sup>, Vladimir Ezersky<sup>C</sup> and Moshe P. Dariel<sup>PI</sup>, "The structural evolution following the spinodal decomposition of the pseudo-ternary (Pb<sub>0.3</sub>Sn<sub>0.1</sub>Ge<sub>0.6</sub>)Te compound", *Journal of Electronic Materials* **39**(9) 2165-2171 (2010). (*IF-1.390, JR-90/222, Q2 in Materials, 6 citations*).
  16. Boaz Dado<sup>S</sup>, Yaniv Gelbstein<sup>PI</sup>, and Moshe. P. Dariel<sup>PI</sup>, "Nucleation of nano-size particles following the spinodal decomposition in the pseudo-ternary Ge<sub>0.6</sub>Sn<sub>0.1</sub>Pb<sub>0.3</sub>Te compound", *Scripta Materialia* **62**(2) 89-92 (2010). (*IF-2.086, JR-37/222, Q1 in Materials, 3 citations*).
  17. Yaniv Gelbstein<sup>PI</sup>, Yoav Rosenberg<sup>S</sup>, Yatir Sadia<sup>S</sup> and Moshe P. Dariel<sup>PI</sup>, "Thermoelectric Properties Evolution of Spark Plasma Sintered (Ge<sub>0.6</sub>Pb<sub>0.3</sub>Sn<sub>0.1</sub>)Te Following a Spinodal Decomposition", *Journal of Physical Chemistry C*, **114**, 13126-13131 (2010). (*IF-4.520, JR-22/222, Q1 in Materials, 24 citations*).
  18. H. Boettner<sup>PI</sup>, J. Yang<sup>C</sup>, D.C. Johnson<sup>C</sup>, L.D. Chen<sup>C</sup>, and Y. Gelbstein<sup>C</sup>, "ICT/ECT Proceedings: Foreward", *Journal of Electronic Materials* 39(9), 1371-1372 (2010). (*IF-1.390, JR-90/222, Q2 in Materials, 0 citations*).
  19. Yaniv Gelbstein<sup>PI</sup>, "Pb<sub>1-x</sub>Sn<sub>x</sub>Te Alloys – Application Considerations", *Journal of Electronic Materials* **40**(5) 533-536 (2011). (*IF-1.390, JR-90/222, Q2 in Materials, 5 citations*).
  20. Y. Gelbstein<sup>PI</sup>, N. Tal<sup>S</sup>, A. Yarmek<sup>S</sup>, Y. Rosenberg<sup>S</sup> and M.P. Dariel<sup>C</sup>, S. Ouardi<sup>S</sup>, B. Balke<sup>C</sup>, C. Felser<sup>PI</sup> and M. Köhne<sup>C</sup>, "Thermoelectric Properties of Spark Plasma Sintered Composites Based on TiNiSn Half Heusler Alloys", *Journal of Materials Research* **26**(15) 1919-1924 (2011). (*IF-1.713, JR-89/222, Q2 in Materials, 20 citations*).
  21. Y. Rosenberg<sup>S</sup>, S. Moisa<sup>C</sup>, Y. Gelbstein<sup>PI</sup> and M.P. Dariel<sup>PI</sup>, "Microstructural Aspects of the Temporal Evolution of the Aging Process in Thermoelectric (Pb,Sn,Ge)Te Compounds", *Metalurgia International* **16**(4) 10-12 (2011). (*IF-0.154, JR-59/74, Q2 in Metallurgy, 0 citations*).
  22. N.Bomshtein<sup>S</sup>, G.Spiridonov<sup>S</sup>, Z.Dashevsky<sup>C</sup> and Y.Gelbstien<sup>PI</sup>, "Thermoelectric, Structural and Mechanical Properties of Spark Plasma Sintered Sub Micro- and Micro- Structured p-type Bi<sub>0.5</sub>Sb<sub>1.5</sub>Te<sub>3</sub>", *Journal of Electronic Materials* **41**(6), 1546-1553 (2012). (*IF-1.390, JR-90/222, Q2 in Materials, 0 citations*).

23. Yatir Sadia<sup>S</sup> and Yaniv Gelbstein<sup>PI</sup>, "Silicon- Rich Higher Manganese Silicides for Thermoelectric Applications", *Journal of Electronic Materials* **41**(6) 1504-1508 (2012). (*IF-1.390, JR-90/222, Q2 in Materials, 23 citations*).
24. G. Rogl<sup>PI</sup>, A. Grytsiv<sup>C</sup>, M. Falmbig<sup>C</sup>, E. Bauer<sup>C</sup>, P. Rogl<sup>C</sup>, M. Zehetbauer<sup>C</sup> and Y. Gelbstein<sup>C</sup>, "Thermoelectric Properties of p-type Didymium (DD) Based Skutterudites  $DD_y(Fe_{1-x}Ni_x)_4Sb_{12}$  ( $0.13 \leq x \leq 0.25$ ,  $0.46 \leq y \leq 0.68$ )", *Journal of Alloys and Compounds* **537**, 242-249 (2012). (*IF-2.289, JR-4/76, Q1 in Metallurgy, 21 citations*).
25. Y. Rosenberg<sup>S</sup>, Y. Gelbstein<sup>PI</sup> and M.P. Dariel<sup>PI</sup>, Phase Separation and Thermoelectric Properties of the  $Pb_{0.25}Sn_{0.25}Ge_{0.5}Te$  Compound, *Journal of Alloys and Compounds*, **526**, 31-38 (2012). (*IF-2.289, JR-4/76, Q1 in Metallurgy, 20 citations*).
26. O. Appel<sup>S</sup>, M. Schwall<sup>S</sup>, M. Kohne<sup>C</sup>, B. Balke<sup>C</sup> and Y. Gelbstein<sup>PI</sup>, Microstructural Evolution Effects of Spark Plasma Sintered  $Ti_{0.3}Zr_{0.35}Hf_{0.35}NiSn$  Half-Heusler Compound on the Thermoelectric Properties, *Journal of Electronic Materials* **42**(7) 1340-1345 (2013). (*IF-1.390, JR-90/222, Q2 in Materials, 4 citations*).
27. Joseph Davidow<sup>S</sup> and Yaniv Gelbstein<sup>PI</sup>, A Comparison Between the Mechanical and Thermoelectric Properties of the Highly Efficient p-type GeTe rich Compositions – TAGS-80, TAGS-85 and 3%  $Bi_2Te_3$  doped  $Ge_{0.87}Pb_{0.13}Te$ . *Journal of Electronic Materials* **42**(7) 1542-1549 (2013). (*IF-1.390, JR-90/222, Q2 in Materials, 17 citations*).
28. Yaniv Gelbstein<sup>PI</sup>, Morphological Effects on the Electronic Transport Properties of Three-Phase Thermoelectric Materials, *J. Appl. Phys.* **112**, 113721 (2012). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 4 citations*).
29. Yaniv Gelbstein<sup>PI</sup>, Phase Morphology Effects on the Thermoelectric Properties of  $Pb_{0.25}Sn_{0.25}Ge_{0.5}Te$ , *Acta Materialia*, **61**(5), 1499-1507 (2013). (*IF-3.755, JR-32/241, Q1 in Materials, 6 citations*).
30. Yatir Sadia<sup>S</sup>, Liron Dinnerman<sup>S</sup> and Yaniv Gelbstein<sup>PI</sup>, Mechanical Alloying and Spark Plasma Sintering of Higher Manganese Silicides for Thermoelectric Application, *Journal of Electronic Materials* **42**(7) 1926-1931 (2013). (*IF-1.390, JR-90/222, Q2 in Materials, 6 citations*).
31. Yaniv Gelbstein<sup>PI</sup>, Joseph Davidow<sup>S</sup>, Steven N. Girard<sup>S</sup>, Duck Young Chung<sup>S</sup>, and Mercuri Kanatzidis<sup>PI</sup>, Controlling Metallurgical Phase Separation Reactions of the  $Ge_{0.87}Pb_{0.13}Te$  Alloy for High Thermoelectric Performance, *Advanced Energy Materials* **3** 815-820 (2013). (*IF-10.043, JR-6/128, Q1 in Physics, 30 citations*).

32. K. Kirievsky<sup>S</sup>, **Y. Gelbstein**<sup>PI</sup>, D. Fuks<sup>PI</sup>, Phase separation and antisite defects possibilities for enhancement the thermoelectric efficiency in TiNiSn half-Heusler alloys, *Journal of Solid State Chemistry* **203** 247-254 (2013). (*IF-2.412, JR-15/44, Q2 in chemistry, 22 citations*).
33. E. Hazan<sup>S</sup>, Y. Sadia<sup>S</sup>, **Y. Gelbstein**<sup>PI</sup>, Characterization of AISI 4340 corrosion products using Raman spectroscopy, *Corrosion Science* **74** 414-418 (2013). (*IF-3.729, JR-2/76, Q1 in Materials, 9 citations*).
34. Yatir Sadia<sup>S</sup>, Mor Elegrably<sup>S</sup>, Oren Ben-Nun<sup>S</sup>, Yossi Marciano<sup>C</sup>, **Yaniv Gelbstein**<sup>PI</sup>, Sub-Micron Features in Higher Manganese Silicide, *Journal of Nanomaterials* **701268** (2013) (*IF-1.547, JR-95/241, Q2 in Materials Science, 3 citations*).
35. **Yaniv Gelbstein**<sup>PI</sup>, Jonathan Tunbridge<sup>C</sup>, Richard Dixon<sup>C</sup>, Mike J. Reece<sup>C</sup>, Huanpo Ning<sup>C</sup>, Robert Gilchrist<sup>C</sup>, Richard Summers<sup>C</sup>, Iñigo Agote<sup>C</sup>, Miguel A. Lagos<sup>C</sup>, Kevin Simpson<sup>C</sup>, Cedric Rouaud<sup>C</sup>, Peter Feulner<sup>C</sup>, Sergio Rivera<sup>C</sup>, Ramon Torrecillas<sup>C</sup>, Mark Husband<sup>C</sup>, Julian Crossley<sup>C</sup> and Ivan Robinson<sup>C</sup>, Physical, Mechanical and Structural Properties of Nano-Structured Highly Efficient *n*- and *p*-Silicides for Practical Thermoelectric Applications, *Journal of Electronic Materials* **43**(6) 1703-1711 (2014) (*IF-1.390, JR-90/222, Q2 in Materials, 0 citations*).
36. O. Appel<sup>S</sup> and **Y. Gelbstein**<sup>PI</sup>, A Comparison Between the Effects of Sb and Bi Doping on the Thermoelectric Properties of the Ti<sub>0.3</sub>Zr<sub>0.35</sub>Hf<sub>0.35</sub>NiSn Half-Heusler Alloy, *Journal of Electronic Materials* **43**(6) 1976-1982 (2014) (*IF-1.390, JR-90/222, Q2 in Materials, 4 citations*).
37. Lior Weintraub<sup>S</sup>, Joseph Davidow<sup>S</sup>, Jonathan Tunbridge<sup>C</sup>, Richard Dixon<sup>C</sup>, Mike Reece<sup>C</sup>, Huanpo Ning<sup>C</sup>, Iñigo Agote<sup>C</sup>, **Yaniv Gelbstein**<sup>PI</sup>, Investigation of the Microstructural and Thermoelectric Properties of the (GeTe)<sub>0.95</sub>(Bi<sub>2</sub>Te<sub>3</sub>)<sub>0.05</sub> Composition for Thermoelectric Power Generation Applications, *Journal of Nanomaterials* **284634** (2014) (*IF-1.547, JR-95/241, Q2 in Materials Science, 0 citations*).
38. **Yaniv Gelbstein**<sup>PI</sup>, Joseph Davidow<sup>S</sup>, Ehud Leshem<sup>S</sup>, Oren Pinshow<sup>S</sup> and Strul Moisa<sup>C</sup>, Significant lattice thermal conductivity reduction following phase separation of the highly efficient Ge<sub>x</sub>Pb<sub>1-x</sub>Te thermoelectric alloys, *Physica Status Solidi B* **251**(7) 1431-1437 (2014). (*IF-1.605, JR-70/516, Q1 in Phys.Chem., 8 citations*).
39. Sagi Appel<sup>S</sup>, Alex Volman<sup>S</sup>, Lothar Houbert<sup>C</sup>, **Yaniv Gelbstein**<sup>C</sup> and Maya Bar Sadan<sup>PI</sup>. Orienting MoS<sub>2</sub> flakes into ordered films, *Journal of Materials Science* **49** 7353-7359 (2014). (*IF-2.305, JR-82/529, Q1 in Materials science, 0 citations*).

40. K. Kirievsky<sup>S</sup>, M. Sclimovich<sup>S</sup>, D. Fuks<sup>PI</sup> and **Y. Gelbstein<sup>PI</sup>**, *Ab initio* study of the thermoelectric enhancement potential in nano grained TiNiSn, *Physical Chemistry and Chemical Physics* **16** 20023 (2014). (*IF-4.198, JR-20/147, Q1 in Physical and theoretical chemistry, 9 citations*).
41. Di Wu<sup>S</sup>, Li-Dong Zhao<sup>S</sup>, Qike Haijun Wu<sup>S</sup>, H. Chi<sup>S</sup>, **Y. Gelbstein<sup>C</sup>**, C. Uher<sup>C</sup>, C. Wolverton<sup>C</sup>, Mercouri Kanatzidis<sup>C</sup> and Jiaqing He<sup>PI</sup>, Origin of the high performance in GeTe-based thermoelectric materials, *Journal of the American Chemical Society* **136** 11412-11419 (2014). (*IF-11.444, JR-7/417, Q1 in chemistry, 28 citations*)
42. **Yaniv Gelbstein<sup>PI</sup>** and Joseph Davidow<sup>S</sup>, Highly efficient functional Ge<sub>x</sub>Pb<sub>1-x</sub>Te based thermoelectric alloys, *Physical Chemistry and Chemical Physics* **16** 20120 (2014). (*IF-4.198, JR-20/147, Q1 in Physical and theoretical chemistry, 8 citations*).
43. Tom Shalev<sup>S</sup>, Omer Meroz<sup>S</sup>, Ofer Beeri<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Investigation of the influence of MoSe<sub>2</sub> on the thermoelectric properties of n-type Bi<sub>2</sub>Te<sub>2.4</sub>Se<sub>0.6</sub>, *Journal of Electronic Materials* **44**(6) 1402 (2015). (*IF-1.390, JR-90/222, Q2 in Materials, 2 citations*)
44. Yatir Sadia<sup>S</sup>, Naor Madar<sup>S</sup>, Ilan Kaler<sup>S</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Thermoelectric properties in the quasi-binary MnSi<sub>1.73</sub>-FeSi<sub>2</sub> system, *Journal of Electronic Materials* **44**(6) 1637 (2015). (*IF-1.390, JR-90/222, Q2 in Materials, 1 citations*).
45. E. Hazan<sup>S</sup>, O. Ben-Yehuda<sup>C</sup>, N. Madar<sup>S</sup> and **Y. Gelbstein<sup>PI</sup>**, Functional Graded Germanium-Lead Chalcogenides-Based Thermoelectric Module for Renewable Energy Applications, *Advanced Energy Materials* **5**(11) 1500272 (2015). (*IF-10.043, JR-6/128, Q1 in Physics, 5 citations*).
46. S. Haroush<sup>S</sup>, E. Priel<sup>C</sup>, D. Moreno<sup>C</sup>, A. Busiba<sup>C</sup>, I. Silverman<sup>C</sup>, A. Turgeman<sup>C</sup>, R. Shneck<sup>PI</sup>, **Y. Gelbstein<sup>PI</sup>**, Evaluation of the mechanical properties of SS-316L thin foils by small punch testing and finite element analysis, *Materials and Design* **83** 75-84 (2015) (*IF- 3.171, JR-43/260, Q1 in Materials, 2 citations*).
47. Gilad M. Guttman<sup>S</sup>, David Dadon<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Electronic tuning of the transport properties of off-stoichiometric Pb<sub>x</sub>Sn<sub>1-x</sub>Te thermoelectric alloys by Bi<sub>2</sub>Te<sub>3</sub> doping, *Journal of Applied Physics* **118** 065102 (2015). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 1 citations*)
48. I. Cohen<sup>S</sup>, M. Kaller<sup>S</sup>, G. Komisarchik<sup>S</sup>, D. Fuks<sup>C</sup> and **Y. Gelbstein<sup>PI</sup>**, Enhancement of the thermoelectric properties of n-type PbTe by Na and Cl co-doping, *Journal of*

- Materials Chemistry C* **3**, 9559 – 9564 (2015). (*IF- 5.066, JR-33/260, Q1 in Materials, 1 citations*).
49. Malki Pinkas<sup>PI</sup>, Oksana Moshka<sup>S</sup>, Shahar Okavi<sup>S</sup>, Mati Shmuelevitsh<sup>S</sup>, **Yaniv Gelbstein<sup>C</sup>**, Natalia Froumin<sup>C</sup>, Louisa Meshi<sup>PI</sup>, The Origin of the Effect of Aging on the Thermoelectric Power of Maraging C250 *Journal of Materials Science* **50**(23) 7698-7704 (2015). (*IF- 2.302, JR-63/260, Q1 in Materials, 0 citations*).
50. E. Hazan<sup>S</sup>, N. Madar<sup>S</sup>, M. Parag<sup>S</sup>, V. Casian<sup>C</sup>, O. Ben-Yehuda<sup>C</sup> and **Y. Gelbstein<sup>PI</sup>**, Effective Electronic Mechanisms for Optimizing the Thermoelectric Properties of GeTe Rich Alloys, *Advanced Electronic Materials* **1**(11) 1500228 (2015). (*new journal – N.A.*)
51. Ofer Beeri<sup>C</sup>, Oded Rotem<sup>S</sup>, Eden Hazan<sup>S</sup>, Eugene A. Katz<sup>C</sup>, Avi Braun<sup>S</sup>, and **Yaniv Gelbstein<sup>PI</sup>**, Hybrid Photovoltaic- Thermoelectric System for Concentrated Solar Energy Conversion: Experimental Realization and Modeling, *Journal of Applied Physics* **118** 115104 (2015). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 2 citations*).
52. O. Appel<sup>S</sup>, T. Zilber<sup>S</sup>, S. Kalabukhov<sup>C</sup>, O. Beeri<sup>C</sup>, **Y. Gelbstein<sup>PI</sup>**, Morphological effects on the thermoelectric properties of  $Ti_{0.3}Zr_{0.35}Hf_{0.35}Ni_{1+\delta}Sn$  alloys following phase separation, *Journal of Materials Chemistry C* **3** 11653-11659 (2015). (*IF- 5.066, JR-33/260, Q1 in Materials, 1 citations*).
53. Roi VizeI<sup>S</sup>, Tal Bargig<sup>S</sup>, Ofer Beeri<sup>C</sup>, **Yaniv Gelbstein<sup>PI</sup>**, Bonding of  $Bi_2Te_3$  based thermoelectric legs to metallic contacts using  $Bi_{0.82}Sb_{0.18}$  alloy", *Journal of Electronic Materials* **45**(3) 1296-1300 (2016). (*IF-1.390, JR-90/222, Q2 in Materials, 1 citations*).
54. Yahir Sadia<sup>S</sup>, Zeev Aminov<sup>S</sup>, Dmitry Mogilyansky<sup>C</sup>, **Yaniv Gelbstein<sup>PI</sup>**, Texture anisotropy of higher manganese silicide following arc-melting and hot-pressing, *Intermetallics* **68** 71-77 (2016). (*IF-2.541, JR-6/73, Q1 in Metallurgy and Metallurgical Engineering, 3 citations*).
55. Omer Meroz<sup>S</sup>, Dana Ben-Ayoun<sup>S</sup>, Ofer Beeri<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Development of  $Bi_2Te_{2.4}Se_{0.6}$  Alloy for Thermoelectric Power Generation Applications, *Journal of Alloys and Compounds* **679** 196-201 (2016). (*IF- 3.014, JR-4/73, Q1 in Metallurgy & Metallurgical Engineering, 0 citations*).
56. D. Fuks<sup>PI</sup>, G. Komisarchik<sup>S</sup>, M. Kaller<sup>S</sup> and **Y. Gelbstein<sup>PI</sup>**, Doping in controlling the type of conductivity in bulk and nanostructured thermoelectric materials, *Journal of Solid State Chemistry* **240** 91-100 (2016). (*IF-2.412, JR-15/44, Q2 in chemistry, 0 citations*).

57. Yatir Sadia<sup>S</sup>, Tsion Ohaion-Raz<sup>C</sup>, Ohad Ben-Yehuda<sup>C</sup>, Meidad Korngold<sup>C</sup> and **Y. Gelbstein<sup>PI</sup>**, Criteria for extending the operation periods of thermoelectric converters based on IV-VI compounds, *Journal of Solid State Chemistry* **241** 79-85 (2016). (*IF-2.412, JR-15/44, Q2 in chemistry, 0 citations*).
58. Naor Madar<sup>S</sup>, Tom Givon<sup>S</sup>, Dmitry Mogilyanski<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, High thermoelectric potential of Bi<sub>2</sub>Te<sub>3</sub> alloyed GeTe- rich phases, *Journal of Applied Physics* **120** (3) 035102 (2016). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 0 citations*).
59. Genady Komisarchik<sup>S</sup>, David Fuks<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, High thermoelectric potential of *n*-type Pb<sub>1-x</sub>Ti<sub>x</sub>Te alloys, *Journal of Applied Physics* **120** (5) 055104 (2016). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 0 citations*).
60. G. Komisarchik<sup>S</sup>, **Y. Gelbstein<sup>PI</sup>** and D. Fuks<sup>PI</sup>, Combined electronic and thermodynamic approaches for enhancing the thermoelectric properties of Ti-doped PbTe, *Physical Chemistry and Chemical Physics* **18**, 32429-32437 (2016). (*IF-4.198, JR-20/147, Q1 in Physical and theoretical chemistry, 0 citations*).
61. Gregory Roizin<sup>S</sup>, Ofer Beeri<sup>C</sup>, Mor Mordechai Peretz<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Vertical power MOS transistor as a thermoelectric quasi-nanowire device, accepted to *Journal of Applied Physics* **120**, 244903 (2016). (*IF-2.210, JR-33/116, Q1 in Applied Physics, 0 citations*).
62. \* Shlomo Haroush<sup>S</sup>, Daniel Moreno<sup>C</sup>, Ido Silverman<sup>C</sup>, Asher Turgeman<sup>C</sup>, Roni Shneck<sup>PI</sup>, **Yaniv Gelbstein<sup>PI</sup>**, The mechanical behavior of HAVAR Foils Using the Small Punch Technique, *Materials* **10** 491 (2017). (*IF-2.728, JR-63/271, Q1 in Materials Science, 0 citations*).
63. \* G. Komisarchik<sup>S</sup>, **Y. Gelbstein<sup>PI</sup>** and D. Fuks<sup>PI</sup>, Solubility of Ti in thermoelectric PbTe compound, *Intermetallics* **89** 16-21 (2017).
64. \* Dana Ben-Ayoun<sup>S</sup>, Yatir Sadia<sup>S</sup>, and **Yaniv Gelbstein<sup>PI</sup>**, High temperature thermoelectric properties evolution of Pb<sub>1-x</sub>Sn<sub>x</sub>Te based alloys, *Journal of Alloys and Compounds* **722** 33-38 (2017). (*IF- 3.014, JR-4/73, Q1 in Metallurgy & Metallurgical Engineering, 0 citations*).
65. \* Yatir Sadia<sup>S</sup>, Dana Ben-Ayoun<sup>S</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Evaporation-condensation effects on the thermoelectric performance of PbTe based couples, *Physical Chemistry and Chemical Physics* **19** 19326-19333 (2017). (*IF-4.198, JR-20/147, Q1 in Physical and theoretical chemistry, 0 citations*).
66. \* Tom Grossfeld<sup>S</sup>, Ariel Sheskin<sup>S</sup>, **Yaniv Gelbstein<sup>PI</sup>**, Yaron Amouyal<sup>PI</sup>, Microstructure evolution of Ag-alloyed PbTe based compounds and implications for

- thermoelectric performance, *Crystals* **7**(9) 281 (2017). (*IF-1.566, Q2 in Metallurgy & Metallurgical Engineering, 0 citations*).
67. \* Maor Kaller<sup>S</sup>, David Fuks<sup>PI</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Sc solubility in *p*-type half Heusler (Ti<sub>1-c</sub>Sc<sub>c</sub>)NiSn thermoelectric alloys, *Journal of Alloys and Compounds* **729** 446-452 (2017). (*IF- 3.014, JR-4/73, Q1 in Metallurgy & Metallurgical Engineering, 0 citations*).
68. \* Chen Barad<sup>S</sup>, Gal Shekel<sup>S</sup>, Michael Shandalov<sup>C</sup>, Hagay Hayun<sup>S</sup>, Giora Kimmel<sup>C</sup>, Dror Shamir<sup>C</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Internal nano voids in yttria stabilized zirconia (YSZ) powder, *Materials* **10**(12) 1440 (2017). (*IF-2.728, JR-63/271, Q1 in Materials Science, 0 citations*)
69. \* E. Priel<sup>C</sup>, B. Mittelman<sup>C</sup>, S. Haroush<sup>S</sup>, A. Turgeman<sup>S</sup>, R. Shneck<sup>PI</sup> and **Y. Gelbstein<sup>PI</sup>**, Estimation of yield and ultimate stress using the small punch test method applied to non-standard specimens: A computational study validated by experiments, *International Journal of Mechanical Sciences* **135** 484-498 (2018). (*IF-3.192, Q1 in Mechanical Science, 0 citations*)
70. \* Omer Meroz<sup>S</sup>, and **Yaniv Gelbstein<sup>PI</sup>**, Thermoelectric Bi<sub>2</sub>Te<sub>3-x</sub>Se<sub>x</sub> alloys for efficient thermal to electrical energy conversion, *Physical Chemistry Chemical Physics* **20**(6) 4092-4099 (2018). (*IF-4.198, JR-20/147, Q1 in Physical and theoretical chemistry, 0 citations*).
71. \* Dana Ben-Ayoun<sup>S</sup>, Yatir Sadia<sup>S</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Compatibility between Co metallized PbTe thermoelectric legs and an Ag-Cu-In brazing alloy, *Materials* **11**(1) 99 (2018). (*IF-2.728, JR-63/271, Q1 in Materials Science, 0 citations*).
72. \* K. Kirievsky, Y. Orr, A. O'Neill, D. Fuks, **Y. Gelbstein**, Peculiarities of doping of nanograined thermoelectric TiNiSn by 3d noble and transition metals, *Intermetallics* **98** 154-160 (2018).
73. \* Gal Shekel, Chen Barad, Hagay Hayun, Yatir Sadia and **Yaniv Gelbstein**, Applying the General Effective Media (GEM) approach for analyzing the thermal conductivity of ZrO<sub>2</sub>-8YSZ composites, *Physical Chemistry and Chemical Physics* **20** 16666-16672 (2018).
74. \* Yaron Amouyal, **Yaniv Gelbstein** and David Fuks, Physical metallurgy inspired nano-features for enhancement of thermoelectric conversion efficiency, *Advanced Theory and Simulations* **1** 1800072 (2018).
75. \* Chen Barad, Giora Kimmel, Hagay Hayun, Dror Shamir, Michael Shandalov, Gal Shekel and **Yaniv Gelbstein**, Influence of galia (Ga<sub>2</sub>O<sub>3</sub>) addition on phase transitions

- and crystal growth of zirconia ( $\text{ZrO}_2$ ), *Journal of Materials Science* **53**(18) 12741-12749 (2018).
76. \* Gilad M. Guttmann, Reuben Gertner, Shmuel Samuha, Dana Ben-Ayoun, Shlomo Haroush, **Yaniv Gelbstein**, Thermoelectric and mechanical properties of Ag and Cu doped  $(\text{GeTe})_{0.96}(\text{Bi}_2\text{Te}_3)_{0.04}$ , *MRS Communications* **8** 1292-1299 (2018).
77. \* Y. Snir, S. Haroush, A. Danon, A. Landau, **Y. Gelbstein**, D. Eliezer. Metallurgical and hydrogen effects on small punch tested mechanical properties of PH-13-8Mo stainless steel, *Materials* **11**(10) 1966 (2018).
78. \* Oshrat Appel, Shai Cohen, Ofer Beeri, Noah Shamir, **Yaniv Gelbstein** and Shimon Zalkind, Surface oxidation of TiNiSn (half-Heusler) alloy by oxygen and water vapor, *Materials* **11** 2296 (2018).
79. \* Tsvika Zilber, Sapir Cohen, David Fuks, **Yaniv Gelbstein**, TiNiSn half-Heusler crystals grown from metallic flux for thermoelectric applications, *Journal of Alloys and Compounds* **781** 1132-1138 (2019).
80. \* Chen Barad, Dror Shamir, Meital Cahana, Michael Shandalov, Hagay Hayun and **Yaniv Gelbstein**, Influence of galia ( $\text{Ga}_2\text{O}_3$ ) addition on the phase evolution and grain growth behavior of voided yttria stabilized zirconia (YSZ) powder, *Journal of Alloys and Compounds* **783** 286-291 (2019).
81. \* Amaia Zuazua-Ros, Cesar Martin-Gomez, Elia Ibanez-Puy, Marina Vidaurre-Arbizu, **Yaniv Gelbstein**, Investigation of the thermoelectric potential for heating, cooling and ventilation in buildings: characterization options and applications, *Renewable Energy* **131** 229-239 (2019).
82. \* Daniel Rabin, David Fuks and **Yaniv Gelbstein**, Al solubility in  $(\text{Ti}_{1-c}\text{Al}_c)\text{NiSn}$  half-Heusler alloy, *Physical Chemistry and Chemical Physics* **21**(14) 7524-7533 (2019).
83. \* Ariel Loutati, Shir Zurets, David Fuks and **Yaniv Gelbstein**, Enhanced thermoelectric properties of *n*-type Ti-doped PbTe, *MRS Advances* **30**(4) 1683-1689 (2019).
84. \* O. Appel, G. Breuer, S. Cohen, O. Beeri, T. Kyratsi, **Y. Gelbstein** and S. Zalkind, The initial stage in oxidation of ZrNiSn (half-Heusler) alloy by oxygen, *Materials* **12** 1509 (2019).
85. \* Dana Ben-Ayoun and **Yaniv Gelbstein**, Co-doping effect on the electronic properties of nonstoichiometric tin telluride, *MRS Advances* **30**(4) 1699-1707 (2019).

86. \* Chen Barad, Giora Kimmel, Dror Shamir, Kachal Hirshberg, **Yaniv Gelbstein**, Lattice variations in nanocrystalline  $Y_2O_3$  confined magnesia (MgO) matrix, *Journal of Alloys and Compounds* **801** 375-380 (2019).
87. \* Y. Snir, S. Haroush, A. Dannon, A. Landau, D. Eliezer, **Y. Gelbstein**, Aging condition and trapped hydrogen effects on the mechanical behavior of a precipitation hardened martensitic stainless steel, *Journal of Alloys and Compounds* **805** 509-516 (2019).
88. \* Oshrat Appel, Tal Zaharoni, Gil Breuer, Ofer Beeri, **Yaniv Gelbstein**, Thermoelectric properties of  $Ti_{0.3}Zr_{0.35}Hf_{0.35}Ni_{1.005}Sn$  half-Heusler alloy, *Journal of Applied Physics* **126** 085110 (2019).
89. \* Yatir Sadia, Dana Ben-Ayoun and **Yaniv Gelbstein**,  $PbO-SiO_2$ - based glass doped with  $B_2O_3$  and  $Na_2O$  for coating of thermoelectric materials, *Journal of Materials Research* **34**(20) 3563-3572 (2019).
90. \* K. Kirievsky, I. Donchev, A. Kiv, D. Fuks and **Y. Gelbstein**, Ion-induced  $n$ -p inversion of conductivity in  $TiNiSn$  compound for thermoelectric applications, *Journal of Applied Physics* **126** 155106 (2019).
91. \* Omer Meroz, Nadav Elkabets and **Yaniv Gelbstein**, Enhanced thermoelectric properties of  $n$ -type  $Bi_2Te_{3-x}Se_x$  alloys following melt-spinning, *ACS Applied Energy Materials* **3** 2090-2095 (2020).
92. \* Daniel Rabin, Theodora Kyratsi, David Fuks and **Yaniv Gelbstein**, Thermoelectric transport properties of  $(Ti_{1-c}Al_c)NiSn$  half-Heusler alloy, *Physical Chemistry Chemical Physics* **22**(3) 1566-1574 (2020).
93. \* Hagay Hayun, Roy Wolf, Chen Barad and **Yaniv Gelbstein**, Thermal shock resistant solid oxide fuel cell ceramic composite electrolytes, *Journal of Alloys and Compounds* **821** 153490 (2020).
94. \* Y. Sadia, I. Koron and **Y. Gelbstein**,  $PbO-SiO_2$  based glass coating of  $PbI_2$  doped  $PbTe$ , *Metals* **10** 284 (2020).
95. \* Meital Cahana and **Yaniv Gelbstein**, Bismuth doping of induction furnace synthesized  $Mg_2Si$ ,  $Mg_2Sn$  and  $Mg_2Ge$  thermoelectric compounds, *Intermetallics* **120** 106767 (2020).
96. \* K. Kirievsky, D. Fuks and **Y. Gelbstein**, Composition conserving defects and their influence on the electronic properties of thermoelectric  $TiNiSn$ , *Physical Chemistry Chemical Physics* **22**(15) 8035-8047 (2020).

97. \* Chen Barad, Giora Kimmel, Hagay Hayun, Dror Shamir, Kachal Hirshberg, **Yaniv Gelbstein**, Phase stability of nanocrystalline grains of rare-earth oxides ( $\text{Sm}_2\text{O}_3$  and  $\text{Eu}_2\text{O}_3$ ) Confined in Magnesia ( $\text{MgO}$ ) Matrix, *Materials* **13**(9) 2201 (2020).
98. \* Y. Snir, D. Moreno, I. Silverman, S. Samuha, Y. Eisen, D. Eliezer, **Y. Gelbstein** and S. Haroush, Mechanical properties of proton bombarded SS316L thin foils using the small punch technique, *Journal of Nuclear Materials* **540** 152340 (2020).
99. \* Yatir Sadia, **Yaniv Gelbstein** and Stephen J. Skinner, Structure, electrical conductivity and electrochemical behavior of  $(\text{La}_{1-x}\text{Sr}_x)_2(\text{Ni}_{0.9}\text{Mn}_{0.1})\text{O}_{4+\delta}$  based compounds, *Journal of Solid State Chemistry* **290** 121556 (2020).
100. \* Polina Metalnikov, Dan Eliezer, Guy Ben-Hamu, Ervin Tal-Gutelmacher, **Yaniv Gelbstein**, Corneliu Munteanu, Hydrogen embrittlement of electron beam melted Ti-6Al-4V, *Journal of Materials Research and Technology – JMR&T* **9**(6) 16126-16134 (2020).
101. \* Ioanna Ioannou, Panagiotis S. Ioannou, Andreas Delimitis, **Yaniv Gelbstein**, Ioannis (John) Giapintzakis, Theodora Kyratsi, High thermoelectric performance of *p*-type half-Heusler (Hf,Ti)Co(Sb,Sn) solid solutions fabricated by mechanical alloying, *Journal of Alloys and Compounds* **858** 158330 (2021).
102. \* Asaf Levy, Gil Bernstein Toker, Shoshana Winter, Sharona S. Cohen, Oleg Ermak, Itay Peled, Zvi Kotler, **Yaniv Gelbstein**, Hybrid structural electronics printing by novel dry film stereolithography and laser induced forward transfer, *nano select* **2**(5) 979-991 (2021).
103. \* Dana Ben-Ayoun and **Yaniv Gelbstein**, Electronic properties of co-doped nonstoichiometric germanium telluride, *Intermetallics* **131** 107118 (2021).
104. \* Daniel Rabin, Aviv Meshulam, David Fuks and **Yaniv Gelbstein**, High entropy on single sub-lattice in  $\text{MNiSn}$  compound: stability and thermoelectric properties, *Journal of Alloys and Compounds* **874** 159940 (2021).
105. \* Oshrat Appel, Shai Cohen, Ofer Beeri, **Yaniv Gelbstein** and Shimon Zalkind, The initial oxidation of HfNiSn half-Heusler alloy by oxygen and water vapor, *Materials* **14** 3942 (2021).
106. \* Chen Barad, Giora Kimmel, Brian A. Rosen, Alla Sahartov, Hagay Hayun, Jacob Zabicky and **Yaniv Gelsbtein**, Lattice variation of cubic  $\text{Y}_2\text{O}_3$  in three dimensions: temperature, pressure and crystal size, *Journal of Alloys and Compounds* **885** 161199(2021).

107. \* Azoulay Itsh'ak, Ory Klonsky, **Yaniv Gelbstein** and Peter Beker, Doping type influence on physical diamond properties, accepted to *Materials Research Express* (2022).

\* **Publications since the last promotion.**

*b. Book Chapters*

1. Yatir Sadia<sup>S</sup>, Ohad Ben-Yehuda<sup>C</sup> and **Yaniv Gelbstein**<sup>PI</sup>, "Highly Efficient Segmented *p*-type Thermoelectric leg", Ch. 5 in *New Materials for Thermoelectric Applications: Theory and Experiment*, NATO Science for Peace and Security Series B: Physics and Biophysics (eds. V. Zlat'ic and A.Hewson), Springer Science and Business Media Dordrecht (2012).
2. **Yaniv Gelbstein**<sup>PI</sup>, Yedidia Haim<sup>C</sup>, Sergei Kalabukhov<sup>C</sup>, Vladimir Kasiyan<sup>C</sup>, S. Hartman<sup>C</sup>, S. Rothe<sup>C</sup> and Nahum Frage<sup>C</sup>, Correlation between thermal and electrical properties of spark plasma sintered (SPS) porous copper, *Sintering* (ISBN 978-953-51-4113-6), In-tech Publ. (Editor: Arunachalam Lakshmanan), 2014.
3. **Yaniv Gelbstein**<sup>PI</sup>, General effective media approach for analyzing and optimizing of thermoelectric materials, *Thermoelectric power generation – advanced materials and devices* (ISBN 978-953-51-4929-3), In-tech Publ. (Editor: Mikhail Nikitin), 2016.
4. **Yaniv Gelbstein**<sup>PI</sup>, Simultaneous of morphological effects on thermoelectric power, thermal and electrical conductivity in multi-phase thermoelectric materials, *Thermoelectric for power generation – a look at trends in the technology* (ISBN 978-953-51-2846-5), In-tech Publ. (Editor: Mikhail Nikitin), 2016.
5. \* **Yaniv Gelbstein**<sup>PI</sup>, Utilizing Phase Separation Reactions for Enhancement of the Thermoelectric Efficiency in IV-VI Alloys, *Thermoelectric Energy Conversion: Basic Concepts and Device Applications* (ISBN: 978-3-527-34071-2), Wiley Publ. (Editor: Diana Davila Pineda et al.), 2017.
6. \* Gilad M. Guttman<sup>S</sup>, **Yaniv Gelbstein**<sup>PI</sup>, Mechanical properties of thermoelectric materials for practical application, *Thermoelectrics* (ISBN: 978-953-51-6058-8), InTech Publ. (Editor: Patricia Aranguren), 2018.
7. \* Dana Ben-Ayoun and **Yaniv Gelbstein**, Bismuth telluride solubility limit and dopant effects on the electronic properties of lead telluride, *Thermoelectrics for*

power generation (ISBN: 978-1-78984-529-7), InTech Publ. (Editor: Saim Memon), 2019.

### c. Refereed Conference Proceedings

1. **Y. Gelbstein**<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Synthesis of n-type PbTe by Powder Metallurgy", Proc. 20<sup>th</sup> International Conference on Thermoelectrics, Beijing, 143(2001).
2. **Y. Gelbstein**<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Transport Properties of PbI<sub>2</sub>-doped PbTe", Proc. 21<sup>st</sup> International Conference on Thermoelectrics, Long-Beach, 13(2002).
3. **Y. Gelbstein**<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Design, Synthesis and Characterization of Graded n-type PbTe", Proc. 21<sup>st</sup> International Conference on Thermoelectrics, Long-Beach, 9(2002).
4. Z. Dashevsky<sup>PI</sup>, **Y. Gelbstein**<sup>S</sup>, I. Edry<sup>S</sup>, I. Drabkin<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Optimization of Thermoelectric Efficiency in Graded Materials" proc. 22<sup>nd</sup> International Conference on Thermoelectrics, La Grande Motte (Herault-France), 421(2003).
5. **Y. Gelbstein**<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Synthesis of Indium Doped PbTe Using Powder Metallurgy", Proc. 23<sup>rd</sup> International Conference on Thermoelectrics (ICT-2004), Adelaide, Australia (2004).
6. **Y. Gelbstein**<sup>S</sup>, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "A Model For Calculating The Figure Of Merit Of PbTe Based Materials Over A wide Temperature Range", Proc. 23<sup>rd</sup> International Conference on Thermoelectrics (ICT-2004), Adelaide, Australia (2004).
7. **Y. Gelbstein**<sup>PI</sup>, Z. Dashevsky<sup>C</sup>, Y. George and M.P. Dariel<sup>PI</sup>, "Development of p-Pb<sub>1-x</sub>Sn<sub>x</sub>Te Functionally Graded Materials", Proc. 25<sup>th</sup> International Conference on Thermoelectrics (ICT-2006), Vienna, Austria.
8. **Y. Gelbstein**<sup>PI</sup>, Z. Dashevsky<sup>C</sup>, Y. George<sup>T</sup> and M.P. Dariel<sup>PI</sup>, "Thermoelectric Properties of p-type In- doped Pb<sub>1-x</sub>Sn<sub>x</sub>Te", Proc. 25<sup>th</sup> International Conference on Thermoelectrics (ICT-2006), Vienna, Austria .
9. C. Long<sup>C</sup>, X. Hou<sup>C</sup>, **Y. Gelbstein**<sup>PI</sup>, Jianzhong Zhang<sup>PI</sup>, B. Ren<sup>C</sup> and Z. Wang<sup>C</sup>, "Preparation and Thermoelectric Properties of n-type PbTe doped with In and PbI<sub>2</sub>", Proc. 25<sup>th</sup> International Conference on Thermoelectrics (ICT-2006), Vienna, Austria

10. O. Ben-Yehuda<sup>C</sup>, **Y. Gelbstein<sup>C</sup>**, Z. Dashevsky<sup>C</sup>, R. Shuker<sup>PI</sup> and M.P. Dariel<sup>PI</sup>, "Improved Power Factor of Bi<sub>0.4</sub>Sb<sub>1.6</sub>Te<sub>3</sub>- Based Materials Prepared by Cold Pressing", Proc. 25<sup>th</sup> International Conference on Thermoelectrics (ICT-2006), Vienna, Austria.
11. **Y. Gelbstein<sup>PI</sup>**, O. Ben-Yehuda<sup>C</sup>, Z. Dashevsky<sup>C</sup>, J.L. Cui<sup>C</sup>, C. Long<sup>C</sup>, Jianzhong Zhang<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Powder Metallurgy Optimization of (Pb,Ge)Te Alloy for Thermoelectric Applications", (ICT-07), Jeju island, South Korea.
12. O. Ben-Yehuda<sup>C</sup>, **Y. Gelbstein<sup>C</sup>**, Z. Dashevsky<sup>C</sup> and M.P. Dariel<sup>PI</sup>, "Functionally graded Bi<sub>2</sub>Te<sub>3</sub> material for above room temperature application", (ICT-07), Jeju islans, South Korea.
13. O. Ben-Yehuda<sup>C</sup>, Y. Sasson<sup>S</sup>, **Y. Gelbstein<sup>S</sup>**, G. Kimmel<sup>C</sup> and Z. Dashevsky<sup>PI</sup>, "Development of Thermoelectric Thin Films Based on Bi<sub>2</sub>Te<sub>3</sub>", Proceedings of the 6<sup>th</sup> European conference on thermoelectrics (ECT-08), July 2-4, 2008, Paris, France.
14. O. Ben-Yehuda<sup>C</sup>, Y. Rosenthal<sup>C</sup>, **Y. Gelbstein<sup>PI</sup>**, Y. Sadia<sup>S</sup>, and A. Turgeman<sup>T</sup>, "Strength and Reliability of Cu-Ni Lead Free Solder Joints", the proceedings of International Brazing and Soldering Conference (IBSC), April 26 - 29, 2009 — Orlando, Florida.
15. I. Agote, M.A. Lagos, J. Tunbridge, R. Dixon, M. Reece, H. Ning, R. Gilchrist, R. Summers, **Y. Gelbstein**, K. Simpson, C. Rouaud, P. Feulner, S. Rivera, R. Torrecillas, M. Husband, J. Crossley and I. Robinson, Thermoelectric Materials for Automotive and Marine Applications, proceedings of EuroPM 2014 Conference, Messezentrum Salzburg in Salzburg, a UNESCO World Heritage Site, 21 – 24 September 2014.
16. S. Haroush<sup>S</sup>, D. Moreno<sup>C</sup>, I. Silverman<sup>C</sup>, A. Turgeman<sup>C</sup>, R. Shneck<sup>PI</sup>, **Y. Gelbstein<sup>PI</sup>**, Mechanical Properties Characterization of Co Based Thin Foils Using the Small Punch Technique, will be published at the proceedings of the 3<sup>rd</sup> International Small Punch Test Techniques (SSTT-2014), 23-25 September, 2014, Castle Seggau, Austria.
17. **Yaniv Gelbstein<sup>PI</sup>**, Methods for thermoelectric efficiency enhancement for power generation applications, Proceedings of the 34<sup>th</sup> Israeli Conference of Mechanical Engineering, Faculty of Mechanical Engineering, Technion I.I.T, Haifa, 21-22 November 2016.
18. Irad Brandys<sup>S</sup>, Yedidia Haim<sup>S</sup> and **Yaniv Gelbstein<sup>PI</sup>**, Simplified Theoretical Performance Model of a Solid Oxide Fuel Cell, proceedings of the ASME's International Mechanical Engineering Congress and Exposition (IMECE), Phoenix Convention Center, Phoenix, AZ, USA, Nov. 11-17, 2016.

## **Lectures and Presentations at Meetings and Invited Seminars not Followed by Published Proceedings**

### **a. Keynote and plenary lectures at conferences/meetings**

1. **Yaniv Gelbstein**, "Practical considerations for thermoelectric power generation using IV-VI compounds", the 1<sup>st</sup> International Conference on Materials for Energy, July 4-8 2010, Karlsruhe/Germany (*Keynote Lecture*).
2. I. Agote, M.A. Lagos, J. Tunbridge, R. Dixon, M. Reece, H. Ning, R. Gilchrist, R. Summers, B. Stirup, K. Simpson, C. Rouaud, P. Feulner, **Y. Gelbstein**, Development of Highly Efficient Thermoelectric Materials for Automotive and Marine Applications, the European Congress and Exhibition on Advanced Materials and Processes (EUROMAT 2013), Sevilla, September 8-13, 2013. (*Keynote*).
3. **Yaniv Gelbstein**, "Practical Considerations for Thermoelectric Materials Development", LET's international Conference organized for the Italian Presidency of the Council of the European Union, has the Patronage of the Italian Ministries of Education, University and Research, of Economic Development, and of Foreign Affairs, and supported by the European Union Funding for Research and Innovation, Bologna (Italy) from Sept. 29 to Oct. 1, 2014. (*Keynote*).
4. **Yaniv Gelbstein**, Toward Higher Thermoelectric Efficiency for Power Generation Applications, Key-note lecture in the session entitled Thermoelectric & Metallurgical Materials in the 17th Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016. (*Keynote*).
5. **Yaniv Gelbstein**, Development of highly efficient thermoelectric materials and devices, The 19th Israel Materials Engineering Conference (IMEC 2021), The international convention centre ICC, Jerusalem, Israel, December 13-14 (2021) (*Plenary*).

### **b. Invited lectures at conferences/meetings**

1. **Y. Gelbstein**, "Development of Highly Efficient Thermoelectric Materials Based on  $Pb_{1-x}Ge_xTe$ ", "Thermopower Symposium CH- Novel Thermoelectric Materials and Applications", 15<sup>th</sup> of May, 2007, EMPA, Dubendorf, Zurich.
2. **Y. Gelbstein**, O. Ben-Yehuda, Z. Dashevsky, Y. George and M.P. Dariel, "Advanced Approaches for Increasing the Thermo-Electrical Efficiency of

- (Pb,Sn,Ge)Te Alloys Processed by Powder Metallurgy", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
3. **Y. Gelbstein**, Z. Dashevsky and M.P. Dariel, "Transport and mechanical properties of  $Pb_{1-x}Sn_xTe$ -based alloys", EMRS-08, Strasbourg, May 2008.
  4. **Yaniv Gelbstein**, "Potential alloys based on IV-VI compounds for thermoelectric power generation", ICT-09 (Freiburg, Germany), July 2009.
  5. **Yaniv Gelbstein**, "IV-VI based alloys for practical thermoelectric applications", the 29th International Conference on Thermoelectrics, May 30 – June 3 2010, Shanghai/China.
  6. **Yaniv Gelbstein**, "The Laser Flash Technique (LFA) in Practical Thermoelectric Applications", Users Meeting for Laser Flash Technique (LFA), October 26-27 2010, Dresden/Germany.
  7. **Yaniv Gelbstein**, "Recent Advances in Thermoelectric Materials Development", ANNA Users' Meeting, October 27<sup>th</sup> 2010, Fondazione Bruno Kessler (FBK), Trento, Italy.
  8. **Yaniv Gelbstein**, "General Trends In Thermoelectrics", Department of Materials Engineering Seminar, Ben-Gurion University of the Negev, Beer-Sheva, Israel, March 10<sup>th</sup> 2011.
  9. **Yaniv Gelbstein**, "Development of Highly Efficient IV-VI Thermoelectric Materials", DPG (German Physical Society) spring meeting, "Nanostructural Thermoelectrics" session, 13-18<sup>th</sup> March 2011, Dresden.
  10. **Yaniv Gelbstein**, "Practical Considerations for Achieving Stable and Highly Efficient IV-VI based Thermoelectric Alloys", 2011 Vila Conference on Energy and Environmental Research (VCEER), April 21<sup>st</sup>-25<sup>th</sup> 2011, Las-Vegas, Nevada.
  11. **Yaniv Gelbstein**, "Nanostructuring in IV-VI Based Thermoelectric Alloys Due to Spinodal Decomposition", E-MRS 2011 Spring & Bilateral Meeting, Nice (France), May 9-13, 2011.
  12. **Yaniv Gelbstein**, "General Trends in Thermoelectrics", ARW Workshop on Thermoelectric Materials, Hvar, Croatia, September 19-25, 2011.
  13. **Yaniv Gelbstein**, "Stability and Efficiency Considerations upon Development of IV-VI based Thermoelectric Alloys", the 9<sup>th</sup> European Conference on Thermoelectrics, ECT2011, September 28-30, 2011 –Thessaloniki, GREECE.
  14. **Yaniv Gelbstein**, "Stability Considerations in Development of Highly Efficient Thermoelectric Alloys", China International Conference on High Performance Ceramics (CICC-7), November 4-7<sup>th</sup> 2011, Xiamen, China.

15. **Yaniv Gelbstein**, "General Trends in Thermoelectrics", Department of Energy Engineering Seminar, Ben-Gurion University of the Negev, Beer-Sheva, Israel, December 13<sup>th</sup> 2011.
16. \* **Yaniv Gelbstein**, "General Trends in Thermoelectrics", Thermoelectricity workshop for future collaborations between the University of Michigan and BGU, Ben-Gurion University of the Negev, Beer-Sheva, Israel, February 22<sup>nd</sup> 2012.
17. **Yaniv Gelbstein**, "Recent Activities in Thermoelectrics", Faculty of Materials Engineering Seminar", Technion, Haifa, Israel, March 29<sup>th</sup>, 2012.
18. **Yaniv Gelbstein**, "Toward Higher Thermoelectric Efficiency for Power Generation Applications", E-MRS Spring 2012, Strasbourg, France, May 14-18, 2012.
19. **Yaniv Gelbstein**, Toward Higher Thermoelectric Efficiency in Power Generation Applications, University of Cyprus, Nicosia, November 28<sup>th</sup> 2012.
20. **Yaniv Gelbstein**, Phase separation in IV-VI alloys - Generation of thermodynamic stable nano-features, 2<sup>nd</sup> Thermoelectric Workshop in KERI (the Korean Electrotechnology Research Institute), Hilton KyungJu, Korea, December 13-14, 2012.
21. **Yaniv Gelbstein**, Novel Approaches in Thermoelectrics at BGU, Visits of Mr. Eric Isaacs, Director of ANL- 22<sup>nd</sup> April 2013 and of Prof. R. Armstrong Director of DOE's Center for Interface Science: Solar Electric Materials – 6<sup>th</sup> May 2013.
22. **Yaniv Gelbstein**, Novel Approaches in Thermoelectrics at BGU, Bundeswehr Wir. Dienen. Deutschland. Delegation / MOD meeting @ BGU, 10<sup>th</sup> of July 2013.
23. **Yaniv Gelbstein**, Recent Developments in Thermoelectric Power Generation, Israel Vacuum society meeting will take place Monday Sep. 30, 2013 in Herzlia.
24. **Yaniv Gelbstein** and Yossi Marciano, *PowerDriver*: an innovative environmentally friendly thermoelectric power generation system for automotive and marine applications that is powered by exhaust waste thermal energy to reduce fuel consumption, 1<sup>st</sup> Workshop – European Nanotechnology for Thermoelectrics Cluster, 17 September 2013, Warsaw University of Technology.
25. **Yaniv Gelbstein**, Nano-energy: thermoelectric materials for energy conversion applications, CNRS and BGU Conference on Nanotechnology November 13, 2013, Paris.

26. **Yaniv Gelbstein**, Recent Thermoelectric Activity at BGU, Riso Meeting in Thermoelectrics, Technical University of Denmark, Roskilde, Denmark, November 20-23, 2013.
27. **Yaniv Gelbstein**, Recent Developments on Thermoelectric Efficiency Enhancement for Power Generation Applications, MRS Fall 2013 Symposium on Thermoelectric Materials, Boston, December 1-6, 2013.
28. **Yaniv Gelbstein**, Methods of Thermoelectric Efficiency Enhancement for Power Generation Applications, Symposium 6 (Thermoelectrics: Defect Chemistry, Doping and Nanoscale Effects) at the 2014 Electronic Materials and Applications Meeting (EMA 2014), January 22-24, 2014 in Orlando Florida.
29. **Yaniv Gelbstein**, Toward Higher Thermoelectric Efficiency for Power Generation Applications, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
30. **Yaniv Gelbstein**, Thermoelectrics as a Direct Energy Conversion Method from Heat to Electricity, Micron Company, Mar. 5<sup>th</sup> 2014, Kiryat-Gat, Israel.
31. **Yaniv Gelbstein**, Advanced Methods of Thermoelectric Efficiency Enhancement, The 4<sup>th</sup> International Nanotechnology Conference (Nano Israel 2014), March 24-25, 2014, Tel Aviv.
32. **Y. Gelbstein**, Highly Efficient IV-VI Thermoelectric Materials, Session FD-2 - Novel materials for high efficiency thermal-to-electrical energy conversion of *Symposium FD "Advances in Materials and Technologies for Efficient Direct Thermal-to-Electrical Energy Conversion"* of the Forum on New Materials (June 15-20, 2014), CIMTEC-2014, Montecatini Terme, Tuscany, Italy.
33. **Y. Gelbstein**, Thermoelectric Efficiency Enhancement in GeTe/PbTe based Materials, the International Conference on Thermoelectrics, ICT2014 in Nashville, TN, July 6-10, 2014.
34. **Y. Gelbstein**, Practical Considerations in *nano* based Thermoelectricity, Israel - Greece Joint Meeting on "Nanotechnology and BioNanoscience" October, 19-21, 2014, Weizmann Institute of Science, Rehovot, Israel.
35. **Y. Gelbstein**, *Nano* based Thermoelectricity, Seminar of the Department of Chemical Engineering, BGU, November, 11, 2014.
36. **Y. Gelbstein**, Thermoelectrics, presentation in front of Haruhiko Habuta, Chief researcher wearable devices research team platform technologies research dept., Device Research Laboratory, Advance Research Division Panasonic Corporation,

Ilse Katz Institute for Nanoscale Science and Technology (7<sup>th</sup> Jan 2015) and presentation in front of Mrs. Yolande Rondot, Director of International Relations, Dr. Isabelle Morelon, the International Department of IFPEN (France) and Mr. Jérémy Devray-Benichou, Head of the Energy Department of Ubifrance Israel, Ambassade De France En Israel, BGU (21<sup>st</sup> Jan 2015).

37. **Yaniv Gelbstein**, Phase Separation in IV-VI Alloys – Generation of Thermodynamically Stable Nano-Features, E-MRS Fall Meeting, Symposium W on "Nanoscale phase separations in spintronic materials, superconductors, and other systems", Warsaw, (Sept. 15-18, 2015).
38. **Yaniv Gelbstein**, Thermoelectric devices – conversion of automotive waste heat into electricity, The 43<sup>rd</sup> event of the Israeli Society of Ecology and Environmental Sciences, The Hebrew University, Jerusalem, Oct. 13, 2015.
39. **Yaniv Gelbstein**, Novel thermoelectric optimization methods, submitted to the Electronic Materials and Applications 2016 (EMA-2016), Jan. 20-22 (2016), Orlando, USA.
40. **Yaniv Gelbstein**, Thermoelectric efficiency of IV-VI and V<sub>2</sub>-VI<sub>3</sub> materials driven near phase transitions, Tyndall National Institute, Cork, Ireland, 14<sup>th</sup>-17<sup>th</sup> of February, 2016.
41. David Fuks and **Yaniv Gelbstein**, Controlling the type of conductivity and figure of merit in narrow band gap semiconductors: Density Functional Theory study, Symposium BB: Defect- induced effects in nanomaterials of the E-MRS 2016 Spring Meeting, The Congress Center in Lille (France) May 2-6, 2016.
42. **Yaniv Gelbstein**, Phase separation in IV-VI alloys: Generation of thermodynamically stable nano-features, the 45<sup>th</sup> International School and Conference on the Physics of Semiconductors, June 24-26, 2016, Szczyrk, Poland.
43. **Yaniv Gelbstein**, Recent developments in thermoelectric materials and applications, Israel Sustainable Energy Society Annual Conference (ISES-2016), Airport city, Israel, April 19, 2016.
44. **Yaniv Gelbstein**, Methods of thermoelectric efficiency enhancement for power generation applications, The 34<sup>th</sup> Israeli Conference on Mechanical Engineering, Technion, Israel, November 22-23, 2016.
45. \***Yaniv Gelbstein**, Highly efficient IV-VI based thermoelectric materials and devices, European Congress and Exhibition on Advanced Materials and Processes, EUROMAT 2017, Thessaloniki, Greece, 17-22 September, 2017.

46. \***Yaniv Gelbstein**, Practical Considerations for Maximizing the Potential of Thermoelectric Materials for Power Generation Applications, invited talk at Symposium 8: Thermoelectric Materials and Devices of the 4<sup>th</sup> International Conference on Advanced Electromaterials (ICAE 2017), to be held at Jeju Island, Korea, from November 21 to 24, 2017.
47. \***Yaniv Gelbstein**, Thermoelectrics for practical power generation applications, Invited Seminar at the Department of Materials Engineering, Faculty of Engineering, Imperial College, London, June 8, 2017.
48. \***Yaniv Gelbstein**, Thermoelectric efficiency of IV-VI and V<sub>2</sub>-VI<sub>3</sub> materials driven near phase transitions, Thermoelectric workshop in Tyndall National Institute, Cork, Ireland, 3<sup>rd</sup>-6<sup>th</sup> of July, 2017.
49. \***Yaniv Gelbstein**, Enhancement of the thermoelectric efficiency for practical applications, The 2018 Spring Materials Research Society Symposium, titled "Thermoelectric Materials, Devices and Applications" to be held in Phoenix, Arizona on April 2-6, 2018.
50. \***Yaniv Gelbstein**, Toward Higher Thermoelectric Efficiency for Power Generation Applications, an Invited seminar in the Department of Materials Engineering, Tel-Aviv University, 5<sup>th</sup> of December, 2017.
51. \***Yaniv Gelbstein**, Practical Thermoelectric Applications –past, present and future, the SAE 2018 Waste Heat Recovery Symposium, Technion – Israel Institute of Technology, Haifa, Israel, May 23-24 (2018).
52. \* **Yaniv Gelbstein**, Considerations for enhancement of the thermoelectric potential of semiconductors, an invited talk at the International Conference on Thermoelectrics (ICT2018) that will take place in Caen, France, from the 1<sup>st</sup> to the 5<sup>th</sup> of July 2018.
53. \* **Yaniv Gelbstein**, Thermoelectric efficiency enhancement by the development of advanced semiconductors, an invited talk at the 4<sup>th</sup> international symposium – Nanotechnology from Academy to Industry (NATI 2018), that will take place on Sunday the 6<sup>th</sup> of May 2018, at the Holon Institute of Technology (HIT), Israel.
54. \* **Yaniv Gelbstein**, Thermoelectric efficiency enhancement approaches, Invited lecture at the Department of Chemistry, Aarhus University, Denmark, 13<sup>th</sup> of March 2018.
55. \* **Yaniv Gelbstein**, Highly efficient telluride based thermoelectric materials, XXXIII Panhellenic Conference on Solid State Physics and Materials Science, 17-19 September 2018, University of Cyprus, Nicosia, Cyprus.

56. \* **Yaniv Gelbstein**, Materials Engineering at BGU with an emphasis on thermoelectrics, Israeli-Danish partner day on advanced materials, Copenhagen and the European Spallation Source (ESS), Lund (Sweden), 7-8 February 2019.
57. \* **Yaniv Gelbstein**, Energy conversion activities at BGU, Israel-Quebec seminar on hydrogen in metals, Technion, 13 March, 2019.
58. \* **Yaniv Gelbstein**, Development of advanced half-Heusler based elements for thermoelectric applications, The European Conference on Thermoelectrics 2019 (ECT2019), Limasol, Cyprus, September 23-25 (2019).
59. \* **Yaniv Gelbstein**, Chalcogenides based thermoelectric materials for power generation, The F-3 Thermoelectric Symposium of MRM2019, December 10-14 2019, Yokohama, Japan.
60. \* **Yaniv Gelbstein**, Metallurgical aspects of thermoelectric materials, Thessaloniki-Israel joint workshop on Materials, Manufacturing and Processes, Israel Innovation Authority, Jerusalem, Israel, May 5 (2019).
61. \* **Yaniv Gelbstein**, Advances in the development of thermoelectric materials for power generation, The 37<sup>th</sup> Annual conference of the Israel vacuum society (IVS-IPSTA 2019), September 3<sup>rd</sup> (2019), Sammy Ofer stadium, Haifa, Israel.
62. \* Omer Meroz and **Yaniv Gelbstein**, Improving the transport properties of  $\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$  alloys by enhancing the preferred orientation via melt-spinning method, 2019 Materials Research Society (MRS) fall meeting, December 1-6 (2019), The Hynes convention center and adjacent Sheraton Boston hotel, Boston, Massachusetts.
63. \* **Y. Gelbstein**, Overview of the energy-related activities at Ben-Gurion University of the Negev, Task 40 (Energy storage and conversion based on hydrogen) IEA Hydrogen experts meeting, 3-6 Nov. 2019, Dan Panorama Haifa Hotel, Haifa, Israel
64. \* **Yaniv Gelbstein**, Novel thermoelectric materials for power generation, the “Alloys and compounds for thermoelectric and solar cell applications VIII” symposium of the 2020 TMS annual meeting at San-Diego, California, February 23-27 (2020).
65. \* **Yaniv Gelbstein**, Mechanical and thermodynamic approaches for stabilizing highly efficient thermoelectric materials, The 39<sup>th</sup> International Conference on Thermoelectrics (ICT-2020), June 28- July 2 2020, Seattle, Washington, USA. – **Postponed due to COVID-19 (coronavirus disease).**

66. \* **Yaniv Gelbstein**, Thermoelectric heat to electricity conversion – from materials to devices, The symposium on “renewable energy: from wishful thinking to reality and from mechanisms to applications” of the International Conference on Drylands, Deserts and Desertification, to be held in Sede Boqer campus of BGU, November 15-19 (2020). **Postponed due to COVID-19 (coronavirus disease)**.
67. \* **Yaniv Gelbstein**, Thermal energy conversion and storage, Dutch Israeli renewable energy conversion and storage mini symposium, 13 Jan. (2021) 11:00-13:00, ZOOM ([https://zoom.us/meeting/register/tJlkc-muqDItGtN8uDoXaiGsK\\_MB-JLRKqtL](https://zoom.us/meeting/register/tJlkc-muqDItGtN8uDoXaiGsK_MB-JLRKqtL)).
68. \* **Yaniv Gelbstein**, Materials for Energy at BGU, BGU-Fraunhofer ISE meeting at Blaustein Institutes for desert research, BGU, Sde-Boker, Israel, July the 5<sup>th</sup> (2021).
69. \* **Yaniv Gelbstein**, Optimization of thermoelectric materials and devices, Alexandre Yersin Department of Solar Energy and Environmental Physics (YDSEEP) graduate students seminar, The Jacob Blaustein Institutes for Desert Research, Oct. 26 (2021).
70. \* **Yaniv Gelbstein**, 17<sup>th</sup> International Union of Materials Research Societies - International Conference on Advanced Materials, IUMRS-ICAM, conference, Cancun, Mexico, Aug. 2022.

c. Presentations at conferences/meetings (oral or poster)

1. **Y. Gelbstein**, Y. Seidman, Y. Eliashevich, N. Frage and M.P. Dariel, "Chemical Interaction in the  $B_4C$ -Ti and  $B_4C$ -Si systems", The 8<sup>th</sup> Israel Materials Engineering Conference, IMEC-8, April 16-17, 1997.
2. **Y. Gelbstein**, Z. Dashevsky and M.P. Dariel, "Synthesis of Graded  $n$ -type PbTe by Powder Metallurgy", IMEC-10 conference, Dead-Sea, Israel, Feb. 2002.
3. **Y. Gelbstein**, Z. Dashevsky and M.P. Dariel, "Synthesis of Thermoelectric Alloys Based on  $[(Pb_xSn_{1-x})_yIn_{1-y}]_{1-z}Te_{1+z}$ ", IMEC-11 conference, Haifa, Israel, Dec. 2003.
4. **Y. Gelbstein**, Z. Dashevsky and M.P. Dariel, "Single Step Compaction of  $n$ -type PbTe with Iron Contacts", IMEC-11 conference, Haifa, Israel, Dec. 2003.
5. G. Gotesman, Y. Lishzinker, Z. Dashevsky, M.P. Dariel and **Y. Gelbstein**, "Mechanical Properties of PbTe- based Thermoelectric Semiconductors", the 1<sup>st</sup> Satellite Symposium on Thermoelectrics, Chengdu, China, Sept. 2005.

6. **Y. Gelbstein**, M. Gelbstein, Z. Dashevsky, Y. George and M.P. Dariel, "Annealing Effects on Functionally Graded  $Pb_{1-x}Sn_xTe$  Materials", The 40<sup>th</sup> Annual Scientific Meeting of the Israel Society for Microscopy, Kibutz Hagoshrim, May 2006.
7. **Y. Gelbstein**, Z. Dashevsky, M.P. Dariel, "Development of  $Pb_{1-x}Sn_xTe$  Materials for Thermoelectric Applications", The 12<sup>th</sup> Israel Materials Engineering Conference, IMEC-12, March 2006.
8. O. Ben-Yehuda, Y. Gelbstein, Z. Dashevsky, R. Shuker and M.P. Dariel, "Development of Thermoelectric Alloys Based on  $(Bi_xSb_{1-x})_2(Te_ySe_{1-y})_3$  Using Powder Metallurgy Approach", The 12<sup>th</sup> Israel Materials Engineering Conference, IMEC-12, March 2006.
9. A. Landau, Y. Snir, **Y. Gelbstein**, E. Abramov, Z. Gavra, D. Eliezer, "Characterization of Metallurgical Processes in Al-Alloys Using Thermoelectric Power (TEP) Measurements", The 12<sup>th</sup> Israel Materials Engineering Conference, IMEC-12, March 2006.
10. **Y. Gelbstein**, M. Gelbstein, O. Ben-Yehuda, Z. Dashevsky, Y. George and M.P. Dariel, "Spark Plasma Sintering (SPS) of  $Pb_{1-x}Ge_xTe$  Alloy, The 41<sup>st</sup> Annual Scientific Meeting of the Israeli Society for Microscopy", Weizmann Institute, May 2007.
11. J. Sariel, **Y. Gelbstein**, I. Dahan, "Rhombohedral-Cubic Phase Transition Characterization of  $(Pb,Ge)Te$  Using Hot Stage XRD, 2007 Denver X-ray conference, 30 July - 3 August, Colorado Springs, Colorado.
12. B. Herrmann, **Y. Gelbstein**, A. Landau, D. Olson, "Study of Aging in Strained Uranium-0.85wt%Ti by Thermoelectric Power Measurement", Review of progress in quantitative NDE, Colorado school of mines, Golden, Colorado, July 22-27, 2007.
13. Y. Snir, **Y. Gelbstein**, A. Landau, "TEP Variations During Aging of Maraging 250", Review of progress in quantitative NDE, Colorado school of mines, Golden, Colorado, July 22-27, 2007.
14. Z. Dashevsky, **Y. Gelbstein** and M.P. Dariel, "High Performance *n*- and *p*- type Functionally Graded Materials (FGM) Based on PbTe for Thermoelectric Applications", 5<sup>th</sup> European Conference on Thermoelectrics, September 10-12, 2007, Odessa (Ukraine).
15. **Y. Gelbstein**, "Development of  $(Pb,Sn,Ge)Te$  Based Compounds for Thermoelectric Applications", Minerva Symposium on Nano-, Macro- and Supra-

- Molecular Materials and Phenomena", September 18-19 2007, Kibbutz Chafetz Haim.
16. M. Pinkas, Y. Snir, **Y. Gelbstein**, O. Yehekel and A. Landau, "A Study of the Aging Behavior in Maraging 250 Using Thermo Electric Power and Ultrasonic Measurements", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  17. B. Herrmann, **Y. Gelbstein**, G. Kimmel, Y. George, O. Yehekel, E. Kahana, A. Landau, "Thermoelectric Power Measurements as a QNDE Tool to Assess Metallurgical State of a Metastable Martensitic Uranium-Titanium Alloy Subjected to Different Thermal Treatments", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  18. O. Ben-Yehuda, **Y. Gelbstein**, Z. Dashevsky, R. Shuker, Y. George and M.P. Dariel, "Development of (Bi,Sb)<sub>2</sub>Te<sub>3</sub> for Thermoelectric Conversion", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  19. **Y. Gelbstein**, Z. Dashevsky and M.P. Dariel, "Electronic Effect on the Mechanical Properties of Pb<sub>1-x</sub>Sn<sub>x</sub>Te Based Alloys", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  20. J. Sariel, **Y. Gelbstein** and I. Dahan, "Phase Transitions in the System (Pb,Ge)Te", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  21. A. Landau, **Y. Gelbstein**, M. Pinkas, B. Herrmann, Y. Snir, D. Olson, "Application of Thermoelectric Power Measurements as NDT Tool to Assess Microstructure Evolution", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  22. Y. Snir, A. Landau, **Y. Gelbstein**, E. Abramov, D. Eliezer, "Precipitation Hardening in Steels Followed By Thermoelectric Power (TEP) Measurements", The 13<sup>th</sup> Israel Materials Engineering Conference, IMEC-13, December 2007.
  23. **Y. Gelbstein**, Z. Dashevsky and M.P. Dariel, "Electronic mechanisms of microhardness enhancement in Pb<sub>1-x</sub>Sn<sub>x</sub>Te based alloys", ECT-08 (Paris), July 2008.
  24. O. Ben-Yehuda, Y. Sasson, **Y. Gelbstein**, G. Kimmel and Z. Dashevsky, "Development of Thermoelectric Thin Films Based on Bi<sub>2</sub>Te<sub>3</sub>", ECT-08 (Paris), July 2008.

25. **Y. Gelbstein**, O. Ben-Yehuda, E. Pinhas, T. Edrei, Z. Dashevsky, Y. George, Y. Sadia, and M.P. Dariel, "Thermoelectric properties of (Pb,Sn,Ge)Te based Alloys", ICT-08 (Corvallis, Oregon), August 2008.
26. S. Ifergane, A. Bussiba, I. Dahan, A. Landau and **Y. Gelbstein**, "Applying TEP Measurement to Assess the Mechanical Properties Response to Long Term Aging of Hastelloy", Review of Progress in Quantitative NDE, Chicago, Illinois, July 2008.
27. **Yaniv Gelbstein**, Ohad Ben-Yehuda, Zinovy Dashevsky, and Moshe. P. Dariel, "Phase Transitions and Transport Properties of *p*-type  $\text{Bi}_2\text{Te}_3$  doped  $\text{Sn}_{1-x}\text{Ge}_x\text{Te}$  and  $\text{Pb}_{1-x}\text{Ge}_x\text{Te}$  Alloys for Thermoelectric Applications", ICT-09 (Freiburg, Germany), July 2009.
28. B. Dado, **Y. Gelbstein**, D. Mogilyansky, V. Ezersky, and M.P. Dariel, "Structural evolution in *p*-type  $\text{Ge}_x(\text{Sn}_y\text{Pb}_{1-y})_{1-x}\text{Te}$  thermoelectric alloys following a spinodal decomposition reaction", ICT-09 (Freiburg, Germany), July 2009.
29. **Y. Gelbstein**, B. Dado, O. Ben-Yehuda, Y. Sadia, Z. Dashevsky, and M.P. Dariel, "Development of Highly Efficient *p*-type Germanium-Lead-Tin Telluride Thermoelectric alloys", ICT-09 (Freiburg, Germany), July 2009.
30. **Yaniv Gelbstein**, "Highly efficient *p*-type  $\text{Ge}_x(\text{Sn}_y\text{Pb}_{1-y})_{1-x}\text{Te}$  thermoelectric alloys", presented at the 2<sup>nd</sup> thermopower symposium CH-2009, EMPA, Dubendorf, Switzerland, July 2009.
31. **Y. Gelbstein**, Y. Rosenberg, O. Ben-Yehuda, Y. Sadia, Y. George, Z. Dashevsky, and M.P. Dariel, "Semiconductors based on  $\text{Ge}_x(\text{Sn}_y\text{Pb}_{1-y})_{1-x}\text{Te}$  for thermoelectric power generation", the 14<sup>th</sup> Israel Materials Engineering Conference, IMEC-14, December 2009.
32. Yoav Rosenberg, **Yaniv Gelbstein** and Moshe Dariel, "Multi-Scale Disproportionation Of The Semiconductor (Pb,Ge,Sn)Te Compound Following A Spinodal Decomposition", the 14<sup>th</sup> Israel Materials Engineering Conference, IMEC-14, December 2009.
33. Malki Pinkas, Mati Shmulevitsh, Isaac Dahan, **Yaniv Gelbstein**, Nahum Frage, "The Effect of Solution Treatment on the Aging Process of Maraging 250 Steels", the 14<sup>th</sup> Israel Materials Engineering Conference, IMEC-14, December 2009.
34. **Y. Gelbstein**, M. Köhne, and C. Felser, "Spark Plasma Sintering of TiNiSn Based Half Heusler Alloys for Thermoelectric Applications", to be given in the 29th International Conference on Thermoelectrics, May 30 – June 3 2010, Shanghai/China.

35. Ori Yehekel, **Yaniv Gelbstein**, Malki Pinkas, Yoav Snir, Alex Landau, "Elastic Moduli Measurements in Metallic Compounds", 1<sup>st</sup> Bilateral Workshop of the JRC-IAEC Cooperation, 2-6 May 2010, Ein-Gedi, Israel.
36. Y. Snir, M. Pinkas, **Y. Gelbstein**, O. Yehekel, A. Landau, "QNDE Tools for the Assessment of Precipitation Hardened High Strength Steels", 1<sup>st</sup> Bilateral Workshop of the JRC-IAEC Cooperation, 2-6 May 2010, Ein-Gedi, Israel.
37. Yoav Rosenberg, **Yaniv Gelbstein** and Moshe. P. Dariel, "Lattice thermal conductivity reduction by nano-structure formation following the spinodal decomposition of semiconductor (Pb,Ge,Sn)Te compounds", Ilse Katz Institute Day, May 11<sup>th</sup> 2010, IKI building, BGU.
38. Yoav Rosenberg, **Yaniv Gelbstein**, Moshe. P. Dariel, "Top-down bulk nanostructure formation in semiconductor (Pb,Ge,Sn)Te compound following a spinodal decomposition", Nano-Israel 2010, The 2<sup>nd</sup> International nanotechnology conference & exhibition, November 8-9 2010, Dan-Panorama Hotel, Tel-Aviv, Israel.
39. Yoav Rosenberg, Strul Moisa, **Yaniv Gelbstein** and Moshe P. Dariel, "Improved thermo-electric efficiency through decreased thermal conductivity due to engineered nanostructures", 7<sup>th</sup> International Conference on Materials Science and Engineering – BRAMAT 2011, Poiana-Brasov, Romania, 24-26 February 2011.
40. Benjamin Balke, Michael Schwall, Claudia Felser and **Yaniv Gelbstein**, "Heusler Compounds for Thermoelectric Applications – A SPS Study", E-MRS 2011 Spring & Bilateral Meeting, Nice (France), May 9-13, 2011.
41. Y. Sadia and **Y. Gelbstein**, "Development of Higher Manganese Silicides for Thermoelectric Applications", 30<sup>th</sup> International Conference on Thermoelectrics (ICT 2011), July 17-21, 2011, Grand Traverse Resort, Traverse City, Michigan USA.
42. Y. Sadia and **Y. Gelbstein**, "Production Techniques for Higher Manganese Silicides", ARW Workshop on Thermoelectric Materials, Hvar, Croatia, September 19-25, 2011.
43. M. Schwall, O. Barzilai, B. Balke, M. Köhne, **Y. Gelbstein** and C. Felser, Spark plasma sintered Half-Heusler compounds with high Figure-of-Merit, the 9<sup>th</sup> European Conference on Thermoelectrics, ECT2011, September 28-30, 2011 – Thessaloniki, GREECE.

44. Nahum Bomshtein, Zinovy Dashevsky and **Yaniv Gelbstein**, Spark Plasma Sintered Nano and Micro Structured  $\text{Bi}_{0.5}\text{Sb}_{1.5}\text{Te}_3$ , The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
45. Joseph Davidow and **Yaniv Gelbstein**, Development of Highly Efficient GeTe Based p-type Thermoelectric Materials – Comparison Between  $\text{Ge}_{0.87}\text{Pb}_{0.13}\text{Te}$  to the State of the Art TAGS 85, The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
46. Oshrat Barzilay-Appel and **Yaniv Gelbstein**, Spark Plasma Sintered Half-Heusler Compounds with High Figure of Merit, The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
47. Eden Hazan, Yatir Sadia and **Yaniv Gelbstein**, Physical-Metallurgical Characterization of AISI 4340 Steel Using Raman Spectroscopy, The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
48. Yatir Sadia, Yossi Marciano, Liron Dinerman and **Yaniv Gelbstein**, Silicon-Rich Higher Manganese Silicide for Thermoelectric Applications, The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
49. Yoav Snir, **Yaniv Gelbstein** and Alex Landau, A Comparative Assessment of the Aging Condition in Precipitation Hardened Steels by Thermoelectric Power (TEP) Measurements, The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
50. Yoav Rosenberg, **Yaniv Gelbstein** and Moshe Dariel, The Structural Evolution in Semiconductor  $(\text{Pb},\text{Ge},\text{Sn})\text{Te}$  Compounds Following a Discontinuous Precipitation Reaction, The 15<sup>th</sup> Israel Materials Engineering Conference (IMEC-15), February 28 – March 1, 2012, Le Meridien Hotel, Dead Sea, Israel.
51. M. Schwall, O. Barzilai, M. Köhne, **Y. Gelbstein** and B. Balke, Highly Thermoelectric Efficient Spark Plasma Sintered Heusler Compounds, E-MRS Spring 2012, Strasbourg, France, May 14-18, 2012.
52. Yatir Sadia, Liron Dineerman and **Yaniv Gelbstein**, Properties of Mechanical Alloyed Spark Plasma Sintered Samples of Higher Manganese Silicides for Thermoelectric Applications, the 31<sup>st</sup> International Conference on Thermoelectrics (ICT 2012), July 9-12, 2012, Aalborg, Denmark.

53. B. Balke, M. Schwall, O. Barzilai, M. Kohne and **Y. Gelbstein**, "Highly efficient Heusler compounds for thermoelectric applications", the 31<sup>st</sup> International Conference on Thermoelectrics (ICT 2012), July 9-12, 2012, Aalborg, Denmark.
54. **Y. Gelbstein**, "Phase Separation in IV-VI Alloys – Generation of Thermodynamically Stable Nano-Features", the 31<sup>st</sup> International Conference on Thermoelectrics (ICT 2012), July 9-12, 2012, Aalborg, Denmark.
55. E. Hazan, Ben-Gurion University, Beer-Sheva/IL; M. Kanatzidis, Northwestern University, Evanston, IL/USA; **Y. Gelbstein**, Ben-Gurion University, Beer-Sheva/IL, "Electronic optimization of the transport properties of n-type PbTe-PbS, following a phase separation reaction on the nanoscale", 2<sup>nd</sup> International Conference on Materials for Energy (ENMAT II), May 12-16 2013, Karlsruhe, Germany.
56. J. Davidow, **Y. Gelbstein**, Ben Gurion University, Beer Sheva/IL, "Characterization of the mechanical and transport properties of highly efficient germanium telluride-based thermoelectric materials", 2<sup>nd</sup> International Conference on Materials for Energy (ENMAT II), May 12-16 2013, Karlsruhe, Germany.
57. O. Appel, **Y. Gelbstein**, Ben Gurion University of the Negev, Beer-Sheva/IL, "The effect of structure and composition on the thermoelectric efficiency of spark plasma sintered half-Heusler compounds", 2<sup>nd</sup> International Conference on Materials for Energy (ENMAT II), May 12-16 2013, Karlsruhe, Germany.
58. **Y. Gelbstein**, Ben-Gurion University of the Negev, Beer-Sheva/IL; J. Tunbridge, R. Dixon, Intrinsic Materials Ltd, Farnborough/UK; M. Reece, H. Ning, Queen Mary University of London/UK; R. Gilchrist, Jaguar Land Rover/UK; R. Summers, Halyard (M&I) Ltd/UK; I. Agote, TECNALIA Research & Innovation, San Sebastian/E; I. Dimitriadou, K. Simpson, European Thermodynamics Ltd/UK; C. Rouaud, Ricardo Ltd/UK; P. Feulner, Ricardo Ltd/D, "Thermoelectrics goes to both marine and automotive applications - goals and agenda of the EC supported PowerDriver project", 2<sup>nd</sup> International Conference on Materials for Energy (ENMAT II), May 12-16 2013, Karlsruhe, Germany.
59. **Yaniv Gelbstein**, Jonathan Tunbridge, Richard Dixon, Mike Reece, Huanpo Ning, Robert Gilchrist, Richard Summers, Iñigo Agote, Ismini Dimitriadou, Kevin Simpson, Cedric Rouaud, Peter Feulner, "Development of Novel Marine and Automotive Thermoelectric Generators in the Frame of the EC Supported *PowerDriver* Project", The 32<sup>nd</sup> International Conference on Thermoelectrics

- (ICT-2013), June 30-July 4 2013, Kobe International Conference Center, Kobe, Japan.
60. Lior Weintraub, Joseph Davidow, Jonathan Tunbridge, Richard Dixon, Mike Reece, Huanpo Ning, Iñigo Agote, **Yaniv Gelbstein**, Improved GeTe based Compounds for Thermoelectric Power Generation Applications, The 32<sup>nd</sup> International Conference on Thermoelectrics (ICT-2013), June 30-July 4 2013, Kobe International Conference Center, Kobe, Japan.
  61. Yatir Sadia, Mor Elegrably, Oren Ben-Nun, Yossi Marciano, **Yaniv Gelbstein**, The presence of sub-micron features in HMS, The 32<sup>nd</sup> International Conference on Thermoelectrics (ICT-2013), June 30-July 4 2013, Kobe International Conference Center, Kobe, Japan.
  62. Benjamin Balke, Elisabeth Rausch, Michael Schwall and **Yaniv Gelbstein**, Phase Separation as the Key to Thermoelectric Highly Efficient Heusler Compounds, The 32<sup>nd</sup> International Conference on Thermoelectrics (ICT-2013), June 30-July 4 2013, Kobe International Conference Center, Kobe, Japan.
  63. Y. Gelbstein, K. Kirievsky, D. Fuks, DFT study of antisite defects and stability of TiNiSn, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
  64. Sagi Appel, Alex Volman, **Yaniv Gelbstein**, Maya Bar-Sadan, The Effects of Mechanical Alloying on the Thermoelectric Properties of MoS<sub>2</sub>, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
  65. Joseph Davidow, **Yaniv Gelbstein**, Characterization of the Transport Properties of Highly Efficient Germanium Telluride-based Thermoelectric Materials, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
  66. Eden Hazan, Ohad Ben-Yehuda, Maya Parag, Yair George, **Yaniv Gelbstein**, Electronic Optimization of the Transport Properties of n-type PbTe-PbS, following a Phase Separation Reaction on the Nanoscale, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
  67. Yatir Sadia, Mor Elegrably, Oren Ben-Nun, Yossi Marciano, **Yaniv Gelbstein**, Nano-Structures Present In Arc Melted and Hot Pressed Higher Manganese Silicide, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.

68. Gabriel Zamir, Shlomo Haroush, **Yaniv Gelbstein**, Roni Shneck, Idoia Orduna, Gorka Alberro, Fernando Legarda, Igor Pedalva, Hydrogen Transport in HAVAR, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
69. Idan Cohen, **Yaniv Gelbstein**, Oren Pinshow, Ehud Leshem, Development of Lead Chalcogenides Based Doped with Chalcogenide Elements for Thermoelectric Applications, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
70. Oshrat Appel, **Yaniv Gelbstein**, A Comparison between the Effects of Sb and Bi Doping on the Thermoelectric Efficiency of Spark Plasma Sintered Half-Heusler Alloy, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
71. Omer Meroz, Tom Shalev, Ofer Beeri, **Yaniv Gelbstein**, Thermoelectric Properties Improvement of n-type  $(\text{Bi}_2\text{Te}_3)_{1-x}(\text{Bi}_2\text{Se}_3)_x (0.2 \leq x \leq 0.4)$  Alloys by Nano-feature Formation, The 16<sup>th</sup> Israel Materials Engineering Conference (IMEC-16), Feb. 23<sup>rd</sup>-25<sup>th</sup> 2014, The Technion-Israel Institute of Technology, Haifa, Israel.
72. D. Fuks, K. Kirievsky, M. Shlimovich, **Y. Gelbstein**, Controlling the Figure of Merit in TiNiSn Half-Heusler Alloy: DFT Study, Symposium RCBJSF-2014 FMNT, Sept 30- Oct. 2 2014, Riga, Latvia.
73. S. Haroush, D. Moreno, I. Silverman, A. Turgeman, R. Shneck, **Y. Gelbstein**, Mechanical Properties Characterization of Co Based Thin Foils Using the Small Punch Technique, The 3<sup>rd</sup> International Small Punch Test Techniques (SSTT-2014), 23-25 September, 2014, Castle Seggau, Austria (Oral).
74. Yatir Sadia, Tsion Ohaion, Ohad Ben-Yehuda, Meidad Korngold, **Yaniv Gelbstein**, Evaporation Rates in PbTe and GeTe Based Thermoelectric Alloys, the International Conference on Thermoelectrics, ICT2014 in Nashville, TN, July 6-10, 2014
75. Yatir Sadia, Naor Madar, Ilan Kaler, **Yaniv Gelbstein**, Additions of Fe in chimney ladder stoichiometry  $\text{MnSi}_{1.73}$  with excess Si, the International Conference on Thermoelectrics, ICT2014 in Nashville, TN, July 6-10, 2014.
76. E. Hazan, O. Ben-Yehuda and **Y. Gelbstein**, Multiphysics Modeling of Thermoelectric System based on Phase Separated Functional Gradient

- Chalcogenides, the International Conference on Thermoelectrics, ICT2014 in Nashville, TN, July 6-10, 2014.
77. Jiaqing He, Di Wu, Lidong Zhao, Shiqiang Hao, Hang Chi, **Yaniv Gelbstein**, Ctirad Uher, Christopher Wolverton, Mercuri G Kanatzidis, Origin of the High Performance in GeTe-based Thermoelectric Materials upon Bi<sub>2</sub>Te<sub>3</sub> Doping, 2015 MRS Spring Meeting, Moscone West Convention Center, San Francisco, California, 10<sup>th</sup> of April 2015.
  78. **Yaniv Gelbstein**, Thermoelectric Efficiency Enhancement in GeTe/PbTe based Materials, 11th International Conference on Ceramic Materials and Components for Energy and Environmental Applications, June 14-19 2015, Hyatt Regency Vancouver.
  79. K. Kirievsky, M. Kaller, G. Komisarchik, I. Cohen, D. Fuks, **Y. Gelbstein**, Alloying and nano-structuring as efficient routes to control the conductivity type of thermoelectric materials, EMRS 2015 - Fall Meeting, Warsaw, September 2015.
  80. Oshrat Appel and **Yaniv Gelbstein**, Development of advanced half-Heusler Ti<sub>0.3</sub>Zr<sub>0.35</sub>Hf<sub>0.35</sub>NiSn for thermoelectric applications, 4<sup>th</sup> International Symposium of Energy Challenges and Mechanics – working on small scales, 11-13 August 2015, Aberdeen, Scotland, UK.
  81. Oshrat Appel and **Yaniv Gelbstein**, The thermoelectric influence of V group dopants on the MNiSn (M = Ti, Zr, Hf) half-Heusler semiconducting compound, The First Northwestern University – Tel Aviv University Workshop: Semiconductors, Electronic Materials, Thin Films and Photonic Materials, Tel-Aviv University, February 22-25, 2015.
  82. Yatir Sadia and **Yaniv Gelbstein**, High temperature stability of thermoelectric tellurides, The Energy and Materials Research Conference, EMR-2015, Madrid, Spain, 25-27 February 2015.
  83. Yatir Sadia, Zeev Aminov, Dimitri Mogiliansk, **Yaniv Gelbstein**, Anisotropic properties of arc melted and hot pressed higher manganese silicide, the 34<sup>th</sup> International Conference on Thermoelectrics, ICT2015 in Dresden, Germany, June 28-July 2, 2015.
  84. Yatir Sadia, Tsion Ohaion-Raz, Ohad Ben-Yehuda, Meidad Korngold, **Yaniv Gelbstein**, Thermoelectric degradation mechanisms in PbTe and GeTe alloys, the 34<sup>th</sup> International Conference on Thermoelectrics, ICT2015 in Dresden, Germany, June 28-July 2, 2015.

85. Daniel Rabin, Gal Shekel, Itay Azuelos, David Dadon, **Yaniv Gelbstein**, Development of a hybrid SOFC-TE system, submitted to the 40<sup>th</sup> International Conference and Exposition on Advanced Ceramics and Composites (ICACC-2016), Jan. 24-29 2016, Daytona Beach, USA.
86. Yatir Sadia, Zeev Aminov and **Yaniv Gelbstein**, Anisotropic properties of higher manganese silicide prepared via arc melting and hot press, submitted to the 40<sup>th</sup> International Conference and Exposition on Advanced Ceramics and Composites (ICACC-2016), Jan. 24-29 2016, Daytona Beach, USA.
87. Yatir Sadia, Tsion Ohaion-Raz, Ohad Ben-Yehuda, **Yaniv Gelbstein**, Evaporation of PbTe and GeTe based thermoelectric materials, Electronic Materials and Applications 2016 (EMA 2016), January 20-22, 2016 at the DoubleTree by Hilton Orlando at Sea World.
88. Omer Meroz, Dana Ben Ayoun, Ofer Beeri and **Yaniv Gelbstein**, The effect of preferred orientation and the optimization of the manufacturing process on the thermoelectric properties of *n*-type  $\text{Bi}_2(\text{Te}_{0.8}\text{Se}_{0.2})_3$ , The 33<sup>rd</sup> Israel Vacuum Society conference – IVS 2015, September 9, 2015, David Lopatie Conference Center, The Weizmann Institute of Science, Rehovot, Israel.
89. O. Meroz, **Y. Gelbstein**, Improving the thermoelectric properties of  $\text{Bi}_2\text{Te}_3$ - $\text{Bi}_2\text{Se}_3$  alloys by improving the preferred orientation, TAU-NU Workshop, Tel-Aviv University, Isreal, Feb. 22-25, 2015.
90. O. Meroz, **Y. Gelbstein**, The improvement of *n*-type  $(\text{Bi}_2\text{Te}_3)_{1-x}(\text{Bi}_2\text{Se}_3)_x$  alloys' thermoelectric properties by increasing the orientation and optimizing the manufacturing process, International Conference for Sustainable Materials Science and Technology (SmatSciTech), Paris, France, July 15-17, 2015.
91. Oshrat Appel, Ofer Beeri and **Yaniv Gelbstein**,  $\text{Ti}_{0.3}\text{Zr}_{0.35}\text{Hf}_{0.35}\text{Ni}_{1+\delta}\text{Sn}$  half-Heusler composite microstructure effect on thermoelectric properties, The 33<sup>rd</sup> Israel Vacuum Society conference – IVS 2015, September 9, 2015, David Lopatie Conference Center, The Weizmann Institute of Science, Rehovot, Israel.
92. David Fuks and **Yaniv Gelbstein**, Controlling the type of conductivity and figure of merit in narrow band gap semiconductors: Density Functional Theory study, E-MRS Spring meeting (Lille, May 2-6, 2016).
93. Shlomo Haroush, Louisa Meshi, Sergey Remenik, Daniel Moreno, Ido Silverman, **Yaniv Gelbstein** and Roni Z. Shneck, The hardening mechanisms of HAVAR Co-based alloy, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.

94. Itay Azuelos, Daniel Rabin, David Dadon and **Yaniv Gelbstein**, Synthesis of YSZ by arc-melting as a solid oxide fuel cell electrolyte, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
95. Tal Feldman, Roi Vizel, Ofer Beeri and **Yaniv Gelbstein**, Development of advanced Bi-Te based TEG for higher efficiency PV-TE hybrid system: numerical modeling and experimental verification, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
96. Kiril Kirievsky, Genady Komisarchik, Maor Kaller, David Fuks and **Yaniv Gelbstein**, Controlling the type of conductivity by alloying and nano-structuring in materials for thermoelectric applications, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
97. Gal Shekel, Chen Churi, Hagay Hayun, Yatir Sadia, Daniel Rabin, David Dadon and **Yaniv Gelbstein**, Effect of powder consolidation parameters on the density and performance of solid oxide fuel cell (SOFC) electrolytes, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
98. Oshrat Appel, Tsvika Zilber, Ofer Beeri and **Yaniv Gelbstein**, The morphological effects of  $\text{Ti}_{0.3}\text{Zr}_{0.35}\text{Hf}_{0.35}\text{Ni}_{1+\square}\text{Sn}$  half-Heusler composite on the thermoelectric properties, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
99. Gilad Mordechai Guttman, David Dadon and **Yaniv Gelbstein**, Electronic tuning of the transport properties of off-stoichiometric  $\text{Pb}_x\text{Sn}_{1-x}\text{Te}$  thermoelectric alloys by  $\text{Bi}_2\text{Te}_3$  doping, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
100. Dana Ben Ayoun, Doron Granit, Effi Tarragan, Francesco Tavano, Eden Hazan, Yatir Sadia and **Yaniv Gelbstein**, Modeling the use of thermoelectric generator on a Caterpillar C7 Engine, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
101. Genady Komisarchik, Maor Kaller, David Fuks and **Yaniv Gelbstein**, High performance n-type PbTe based compounds for thermoelectric applications, the

- 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
102. Naor Madar, **Yaniv Gelbstein** and David Dadon, Development of a new process for achieving optimal anisotropic texture value in  $\text{GeTe}+7\%\text{Bi}_2\text{Te}_3$  alloy, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
103. Omer Meroz, Dana Ben-Ayoun, Anna Basevich, Niv Vengerovsky, Ofer Beeri and **Yaniv Gelbstein**, Development of  $\text{Bi}_2\text{Te}_{2.4}\text{Se}_{0.6}$  alloy for thermoelectric power generation applications, the 17<sup>th</sup> Israel Materials Engineering Conference (IMEC-17), to be held at the Wohl conference center, Bar-Ilan University on February 1-2, 2016.
104. O. Meroz, **Y. Gelbstein**, Development of  $\text{Bi}_2\text{Te}_{2.4}\text{Se}_{0.6}$  alloy for thermoelectric power generation applications and optimization of the figure of merit, European Materials Research Society – EMRS spring 2016, Lille, France, May 2-6, 2016.
105. Irad Brandys, Yedidia Haim, **Yaniv Gelbstein**, Simplified SOFC performance prediction model, the 12<sup>th</sup> European SOFC and SOEC Forum, 5-8 July 2016, Luzern, Switzerland.
106. S. Haroush, R. Remennik, V. Ezersky, D. Moreno, I. Silverman, **Y. Gelbstein** and R.Z. Shneck, Microstructure evolution of HAVAR alloy during cold work, The 50<sup>th</sup> Israel Society for Microscopy (ISM) meeting, May 31-June 2 2016, Haifa, Israel.
107. Dana Ben-Ayoun, Yatir Sadia, **Yaniv Gelbstein**, Thermal stability and brazing of thermoelectric tellurides, to be presented at the 41<sup>th</sup> International conference and expo on advanced ceramics and composites (ICACC 17), January 22-27 (2017), Daytona Beach, USA.
108. Y. Sadia and **Y. Gelbstein**, Synthesis of yttria stabilized zirconia as SOFC electrolyte using different powder metallurgy methods, 6<sup>th</sup> International Congress on Ceramics (ICC6), August 21-25 (2016), Dresden, Germany.
109. Y. Sadia and **Y. Gelbstein**, Overcoming the valley of death: roadblocks on the way to a working thermoelectric device, 6<sup>th</sup> International Congress on Ceramics (ICC6), August 21-25 (2016), Dresden, Germany.
110. Dana Ben-Ayoun, Yatir Sadia and **Yaniv Gelbstein**, Brazing of thermoelectric tellurides, Electronic Materials and Applications (EMA) 2017, Jan. 18-20 (2017), Orlando, Florida.

111. G. Komisarchik, M. Kaller, A. O'Neill, Y. Orr, **Y. Gelbstein** and D. Fuks, Influence of doping on the type of conductivity in narrow band gap semiconductors: density functional theory study, International conference on materials and nanotechnology 2017, Tartu (Estonia) 24-27 April, 2017.
112. Gabriel Zamir, Shlomo Haroush, Roni Shneck, **Yaniv Gelbstein**, Ido Silverman, Idoia Orduna, Gorika Alberro, Fernando Legarda and Igor Peñalva, Thermomechanical Effects on the Hydrogen Diffusion Through HAVAR, DIMAT 2017 – 10<sup>th</sup> International Conference on Diffusion in Materials, 7-12 May, 2017, Haifa, Israel.
113. \* **Yaniv Gelbstein**, Advanced Thermoelectric Optimization Methods for Approaching Practical Energy Conversion Devices, ICT-2017, July 31<sup>st</sup>, 2017, at the Pasadena Convention Center in Pasadena, California.
114. \* Omer Meroz and **Yaniv Gelbstein**, Electronic Optimization of  $\text{Bi}_2\text{Te}_x\text{Se}_{3-x}$  Alloys for Thermoelectric Power Generation Applications, ICT-2017, July 31<sup>st</sup>, 2017, at the Pasadena Convention Center in Pasadena, California.
115. \* Gilad Guttmann and **Yaniv Gelbstein**, Evaluation of Mechanically Improved GeTe Based TE Materials, EUROMAT 2017, Thessaloniki, Greece, 17-22 September, 2017.
116. \* David Fuks and **Yaniv Gelbstein**, Doping as a way to control the type of conductivity in regular and nano-grained thermoelectric materials: density functional theory study, EUROMAT 2017, Thessaloniki, Greece, 17-22 September, 2017.
117. \* Genady Komisarchik, David Fuks, **Yaniv Gelbstein**, High thermoelectric potential of PbTe doped with minute amount of Ti, The 2017 E-MRS (European Materials Research Society) spring meeting and exhibit, the extended and modernized convention center of Strasbourg (France), from May 22 to 26, 2017.
118. \* Chen Huri, Gal Shekel, Michael Shandalov, Hagay Hayun, Dror Shamir, **Yaniv Gelbstein**, Internal nano voids in yttria stabilized zirconia (YSZ) powder, The 4<sup>th</sup> International Conference on Advanced Electromaterials (ICAE 2017), to be held at Jeju Island, Korea, from November 21 to 24, 2017.
119. \* H. Hayun, C. Huri, **Y. Gelbstein**, Synthesis of zirconium tungstate in yttria-stabilized zirconia (YSZ) matrix using sol-gel for solid oxide fuel cell (SOFC) electrolyte, E-MRS 2017 fall meeting, Warsaw University of Technology, September 18-21, 2017.

120. \* Dana Ben-Ayoun, Yatir Sadia, **Yaniv Gelbstein**, Compatibility between cobalt metallized PbTe thermoelectric legs and an Ag-Cu-In brazing alloy, E-MRS 2017 fall meeting, Warsaw University of Technology, September 18-21, 2017.
121. \* Genady Komisarchik, David Fuks and **Yaniv Gelbstein**, The development of Ti-doped PbTe highly efficient n-type thermoelectric material, E-MRS 2017 fall meeting, Warsaw University of Technology, September 18-21, 2017.
122. \* Omer Meroz and **Yaniv Gelbstein**, Optimization of the electronic properties of  $\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$  alloys for thermoelectric power generation applications, E-MRS 2017 fall meeting, Warsaw University of Technology, September 18-21, 2017.
123. \* David Fuks and **Yaniv Gelbstein**, Ab initio calculations as a guiding tool for the study of phase stability of thermoelectric materials, the 14<sup>th</sup> International Ceramics Congress (June 4-8 2018) and the 8<sup>th</sup> Forum on New Materials (June 10-14 2018), CIMTEC 2018, to be held in Salsomaggiore Terme, Italy.
124. \* David Fuks, Kiril Kirievsky, Genady Komisarchik, Maor Kaller, **Yaniv Gelbstein**, Solubility of substitutional doping elements in thermoelectric compounds, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
125. \* Omer Meroz, **Yaniv Gelbstein**, Optimization of  $\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$  alloys via doping for thermoelectric power generation applications, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
126. \* Oshrat Appel, Tal Zaharoni, Ofer Beeri, **Yaniv Gelbstein**, Enhanced thermoelectric efficiency of half-Heusler – full-Heusler composite, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
127. \* Dana Ben Ayoun, Yatir Sadia, **Yaniv Gelbstein**, Compatibility evaluation between cobalt metallized PbTe thermoelectric legs and an Ag-Cu-In brazing alloy by long term thermal treating, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
128. \* Guy Elkobi, Hadas Weisz, Yair George, **Yaniv Gelbstein**, Developing Si doped GeTe as a thermoelectric material, The 18<sup>th</sup> Israel Materials Engineering

- Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
129. \* Hagay Hayun, Chen Churi and **Yaniv Gelbstein**, Reduction of thermal expansion in yttria-stabilized zirconia (YSZ) solid oxide fuel cell (SOFC) electrolyte by tungsten addition, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
  130. \* Yatir Sadia, Dana Ben-Ayoun and **Yaniv Gelbstein**, Modelling the effects of degradation on the thermoelectric performance of PbTe-based couples, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
  131. \* Polina Metalnikov, Guy Ben-Hamu, Dan Eliezer, **Yaniv Gelbstein**, The effect of alloying elements on microstructure and corrosion behavior of new wrought Mg-Al alloys, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
  132. \* Chen Huri, Gal Shekel, Michael Shandalov, Hagay Hayun, Giora Kimmel, Dror Shamir, **Yaniv Gelbstein**, Internal nano-voids in yttria stabilized zirconia (YSZ) powder, The 18<sup>th</sup> Israel Materials Engineering Conference (IMEC-18), Leonardo Club Hotel, Dead-Sea, Israel, February 6-8, 2018.
  133. \* Omer Meroz and **Yaniv Gelbstein**, Enhancing the efficiency of  $\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$  alloys for thermoelectric power generation applications via electronic optimization, BIT's Annual World Congress of Smart Materials 2018, Hyatt Regency, Osaka, Japan, March 6-8, 2018.
  134. \* Y. Sadia, D. Ben-Ayoun and **Y. Gelbstein**, Evaporation and degradation models for prediction long term behavior of thermoelectric PbTe- based couples, American International Meeting on Electrochemistry and Solid State Science (AiMES-2018) Meeting of the Electrochemical Society (ECS), Cancun, Mexico, Sept. 30 - Oct. 4, 2018.
  135. \* Hagay Hayun and **Yaniv Gelbstein**, Ionic conductivity in nanocrystalline ceramic electrolytes for solid oxide fuel cells (SOFC), The Materials Challenges in Alternative Renewable Energy 2018 (MCARE 2018), Sheraton Vancouver Wall Centre Hotel, Vancouver, August 20-23 (2018).
  136. \* Dana Ben Ayoun and **Yaniv Gelbstein**, Electronic mechanisms for optimizing the thermoelectric properties of PbTe/SnTe alloys, The Materials Challenges in Alternative Renewable Energy 2018 (MCARE 2018), Sheraton Vancouver Wall Centre Hotel, Vancouver, August 20-23 (2018).

137. \* Y. Snir, M. Carl, N. Ley, **Y. Gelbstein**, A. Landau, D. Eliezer, M. Young, The effects of thermochemical treatments on a new Fe-rich dual-phase complex concentrated alloy (CCA), Technological Innovations in Metals Engineering (TIME 2018), Haifa International Convention Center, Haifa, Israel, May 30-31 (2018).
138. \* R. Gertner and **Y. Gelbstein**, High temperature mechanical properties of GeTe for thermoelectric energy conversion applications, 4<sup>th</sup> International Symposium on Nanotechnology from Academia to Industry 2018 (NTAI-2018), Holon Institute of Technology, Holon, Israel, May 6 (2018).
139. \* O. Meroz and **Y. Gelbstein**, Enhancing transport properties of  $\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$  alloys via doping for thermoelectric power generation applications, The 37<sup>th</sup> International and 16<sup>th</sup> European Conference on Thermoelectrics (ICT-2018), Caen, France, 1-5 Jul (2018).
140. \* S. Haroush, D. Moreno, Y. Snir, D. Eliezer, **Y. Gelbstein**, Small punch technique used to evaluate the radiation damage in SS316L thin foils due to proton bombardment, 5<sup>th</sup> International Small Sample Test Techniques Conference SSTT-2018, 10-12 July 2018, Swansea University Bay Campus, Wales.
141. \* Omer Meroz and **Yaniv Gelbstein**, Analyzing the effect of preferred orientation and doping on the transport properties of  $\text{Bi}_2\text{Te}_{3-x}\text{Se}_3$  alloys for thermoelectric power generation applications, 2018 Materials Research Society (MRS) fall meeting, November 25-30 (2018), Boston, Massachusetts.
142. \* Y. Sadia, Dana Ben-Ayoun, **Y. Gelbstein**, Developing specialty glasses as anti-sublimation barrier for thermoelectric materials, 43<sup>rd</sup> International Conference on Advanced Ceramics and Composites (ICACC 2019), Jan 27 – Feb 1 (2019), Hilton Daytona Beach Resort and Ocean Center, Daytona Beach, Florida, USA.
143. \* Yatir Sadia and **Yaniv Gelbstein**, Modeling long term behavior of PbTe-based thermoelectric generators, contributed (Oral) presentation at the Electronic Materials and Applications 2019 conference (EMA 2019), January 23 - 25, 2019 at the Orlando, Florida.
144. \* **Yaniv Gelbstein**, High temperature stability of thermoelectric materials, 2019 MRS spring meeting, April 22-26, 2019, Phoenix, Arizona.
145. \* D. Rabin, M. Kaller, **Y. Gelbstein** and D. Fuks, Solubility of *p*-type doping Sc and Al in half-Heusler TiNiSn for thermoelectric applications, The 37<sup>th</sup> spring

meeting of the European Materials Research Society (E-MRS), May 27-31, 2019, Nice, France.

146. \* Daniel Rabin, Kiril Kirievsky, Maor Kaller, David Fuks, **Yaniv Gelbstein**, Solubility of substitutional doping elements in TiNiSn for thermoelectric applications, European Congress and Exhibition on Advanced Materials and Processes, Euromat 2019, Sept. 1-5 (2019), Stockholm, Sweden.
147. \* **Yaniv Gelbstein**, Thermodynamic and mechanical stabilization of highly efficient thermoelectric materials, ICT-2019 conference to be held in Gyeong-Ju, Korea, from June 30<sup>th</sup> to July 4<sup>th</sup> 2019.
148. \* Omer Meroz and **Yaniv Gelbstein**, Examining the contribution of melt-spinning on the preferred orientation and transport properties of Bi<sub>2</sub>Te<sub>3-x</sub>Se<sub>x</sub> alloys for thermoelectric power generation applications, ICT-2019 conference to be held in Gyeong-Ju, Korea, from June 30<sup>th</sup> to July 4<sup>th</sup> 2019.
149. \* Hagay Hayun and **Yaniv Gelbstein**, Advanced materials for durable thermoelectric (TE) and solid oxide fuel cells (SOFC), German-Israeli Battery School (GIBS 4) in Electrochemical Energy and Power Sources Research, Berlin, Germany, May 12-16 (2019).
150. \* Chen Barad, Dror Shamir, Meital Cahana, Michael Shandalov, Hagay Hayun and **Yaniv Gelbstein**, Influence of galia (Ga<sub>2</sub>O<sub>3</sub>) addition on the phase evolution and grain growth behavior of voided yttria stabilized zirconia (YSZ) powder, the 5<sup>th</sup> International Conference and Expo on Ceramics and Composite Materials, London, UK, June 03-04 (2019).
151. \* Dana Ben-Ayoun and **Yaniv Gelbstein**, Electronic mechanisms for optimizing the thermoelectric properties of SnTe alloys, The European Conference on Thermoelectrics, ECT 2019, Limassol, Cyprus, September 23-25 (2019).
152. \* Ioanna Ioannou, Gil Breuer, **Yaniv Gelbstein**, Theodora Kyratsi, Thermoelectric properties of *p*-type Half-Heusler TiCoSb Solid Solutions fabricated by Mechanical Alloying and Arc-Melting, The European Conference on Thermoelectrics, ECT 2019, Limassol, Cyprus, September 23-25 (2019).
153. \* George Mesaritis, Gil Breuer, **Yaniv Gelbstein**, Theodora Kyratsi, Fabrication of Half Heusler Solid Solutions: Mechanical Alloying vs. Arc Melting, The European Conference on Thermoelectrics, ECT 2019, Limassol, Cyprus, September 23-25 (2019).

154. \* Ioanna Ioannou, George Mesaritis, Loucas Louca, Theodora Kyratsi, Gil Breuer, Nikolaos Vlachos and **Yaniv Gelbstein**, MarTEnergy project: Sustainable and affordable half-Heusler based thermoelectric converters for utilization of waste heat into electrical power in maritime applications, The European Conference on Thermoelectrics, ECT 2019, Limassol, Cyprus, September 23-25 (2019).
155. \* O. Appel, S. Cohen, O. Beeri, N. Shamir, **Y. Gelbstein** and S. Zalkind, Surface oxidation of TiNiSn half-Heusler compound by oxygen and water vapor, 3<sup>rd</sup> International Conference on Applied Surface Science, ICASS, Pisa, Italy, 17-20 June 2019.
156. \* H. Hayun and **Y. Gelbstein**, Thermal shock resistant solid oxide fuel cell (SOFC) ceramic composite electrolytes, IVS-MRS 2019 Student Conference, Ben-Gurion University of the Negev, June 27, 2019.
157. \* Hagay Hayun, Chen Huri and **Yaniv Gelbstein**, Advanced materials for durable solid oxide fuel cells, The 37<sup>th</sup> annual conference of the Israel Vacuum Society (IVS-IPSTA 2019), Sept. 3<sup>rd</sup>, 2019, Sammy Ofer Stadium, Haifa.
158. \* Omer Meroz and **Yaniv Gelbstein**, Enhanced thermoelectric properties of *n*-type Bi<sub>2</sub>Te<sub>3-x</sub>Se<sub>x</sub> alloys following melt-spinning and increased preferred orientation, 2020 3<sup>rd</sup> International conference on materials design and applications (ICMDA 2020), Tokyo, Japan, April 10-13, 2020.
159. \* Daniel Rabin, David Fuks and **Yaniv Gelbstein**, Role of doping and decomposition in TiNiSn for thermoelectric applications, ISPMA15- 15<sup>th</sup> International Symposium on Physics of Materials, Prague, Czech Republic, September 6-11, 2020.
160. \* David Fuks, Daniel Rabin and **Yaniv Gelbstein**, Effect of doping and solubility in some thermoelectric compounds, International Congress on Advanced Materials Science and Engineering, AMSE 2020, Vienna, Austria, July 22-25, 2020.
161. \* D. Rabin, D. Fuks and **Y. Gelbstein**, Doping and phase stability of compounds for thermoelectric applications, 17<sup>th</sup> Discussion Meeting on Thermodynamics of Alloys (TOFA-2020), Bad Staffelstein, Germany, 28 September – 2 October, 2020.
162. \* Chen Barad, Giora Kimmel, Witold Łojkowski, **Yaniv Gelbstein**, Nano-scale effects on the phase diagrams of rare-earth oxides, The 3rd World Congress on

- Nanomaterials (*virtual – due to the COVID-19, coronavirus disease*) August 28-29, 2020, Prague, Czech Republic.
163. \* Theodora Kyratsi and **Yaniv Gelbstein**, Scalable synthesis of *n*-type (Zr,Ti)NiSn Half Heusler alloys via Mechanical Alloying, European congress and exhibition on advanced materials and processes (EUROMAT 2021), 12-16 September 2021 (*Virtual*).
164. \* Ioanna Ioannou, Theodora Kyratsi and **Yaniv Gelbstein**, Investigation of the thermoelectric properties of *p*-type nanostructured half-Heusler (Hf,Zr,Ti)Co(Sb,Sn) solid solutions fabricated by mechanical alloying, European congress and exhibition on advanced materials and processes (EUROMAT 2021), 12-16 September 2021 (*Virtual*).
165. \* Naor Madar, Yatir Sadia and **Yaniv Gelbstein**, High thermoelectric performance of  $\text{Ge}_{0.692}\text{Bi}_{0.038}\text{Te}_{1.057}$ , Virtual Conference on Thermoelectrics (VCT 2021), July 20-22 (2021) (*Virtual*).
166. \* Meital Cahana and **Yaniv Gelbstein**, Development of a novel synthesis method and investigation of Bi-doped  $\text{Mg}_2\text{Si}$ ,  $\text{Mg}_2\text{Sn}$  and  $\text{Mg}_2\text{Ge}$  based thermoelectric compounds, Virtual Conference on Thermoelectrics (VCT 2021), July 20-22 (2021) (*Virtual*).
167. \* Daniel Rabin, Aviv Meshulam, David Fuks and **Yaniv Gelbstein**, High entropy alloy on single sub-lattice in MNiSn half-Heusler compound, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention center ICC, Jerusalem, Dec. 13-14 (2021).
168. \* G.M. Guttman, S. Samuha, R. Gertner, S. Harush and **Y. Gelbstein**, The effects of hot-compression at working temperatures on the physical and mechanical behavior of the thermoelectric GeTe alloy, The 151<sup>st</sup> TMS Annual Meeting & Exhibition (TMS 2022), Anaheim convention center, Anaheim, California, USA, February 27-March 3 (2022).
169. \* Oshrat Appel, **Yaniv Gelbstein**, Surface oxidation of MNiSn (M=Ti,Zr,Hf) half-Heusler alloys, The 151<sup>st</sup> TMS Annual Meeting & Exhibition (TMS 2022), Anaheim convention center, Anaheim, California, USA, February 27-March 3 (2022).
170. \* Naor Madar, Yatir Sadia, Yair George and **Yaniv Gelbstein**, Development of thermoelectric material based on the  $(\text{GeTe})_{96.2}(\text{Bi}_2\text{Te}_3)_{3.8}$  alloy, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).

171. \* Yatir Sadia and **Yaniv Gelbstein**, Thermoelectric properties of  $\text{CuInX}_2$  ( $\text{X}=\text{S,Se,Te}$ ) doped with Ni and Cd, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).
172. \* Emanuel Markman, Ilan Pribar and **Yaniv Gelbstein**, “Effects of additives on hydrogen release reactivity of magnesium hydride composites”, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).
173. \* Hagay Hayun and **Yaniv Gelbstein**, “Towards thermal expansion tailoring in functional composites”, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).
174. \* Meital Cahana and **Yaniv Gelbstein**, “Bismuth doping of induction furnace synthesized  $\text{Mg}_2\text{Si}$ ,  $\text{Mg}_2\text{Sn}$  and  $\text{Mg}_2\text{Ge}$  thermoelectric compounds”, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).
175. \* Yoav Snir, Dan Eliezer and **Yaniv Gelbstein**, “Hydrogen effects on PH13-8Mo steel by a new methodology combining the small punch test (SPT) and thermal desorption analysis (TDA)”, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).
176. \* Chen Barad and **Yaniv Gelbstein**, “Nano-scale effects on the phase diagram of rare-earth oxides”, The 19<sup>th</sup> Israel Materials Engineering Conference (IMEC-2021), The international convention centre ICC, Jerusalem, Dec. 13-14 (2021).

### Research Grants

1. **Y. Gelbstein (CI)**, Z. Dashevsky, M.P. Dariel, Jianzhong Zhang, Zeshen Wang and Baouguo Ren, "Development of high efficiency *p*- and *n*-type PbTe and (Pb,Sn)Te-based graded thermoelectric materials using a powder metallurgical approach", Chinese-Israeli Research Cooperation In Research and Development of Advanced Materials and Their Use in Devices For Telecommunication, Optical Data Storage and Space Technologies, Israeli Ministry of Science, grant No. 3-403 (2004-2006), 20,000USD.

2. **Yaniv Gelbstein (PI)**, Mercuri Kanatzidis, Moshe Dariel, " Thermoelectric Efficiency Enhancement using Nano Structured (Pb,Ge)Te- Alloys", United States – Israel Binational Science Foundation (BSF) No. 2008114, 60,000USD (2009-2011).
3. **Yaniv Gelbstein (PI)**, Moshe Dariel, Boaz Dado, "Spinodal Decomposition Characterization of p-type (PbSnGe)Te Using AFM and HRSEM", European Commission – 6<sup>th</sup> Framework Programme, Research Infrastructures Action, European Integrated Activity of Excellence and Networking for Nano and Micro-Electronics Analysis (ANNA). Grant No.: ANNA\_TA\_UC3\_RP008, (2009), 5,000USD.
4. European Thermodynamics Ltd. (U.K), FCT Systeme GmbH (Germany), Intrinsiq Materials Ltd. (U.K), Nanni Diesel (France), Queen Mary University of Lndon (U.K), Ben-Gurion University of the Negev (Israel) – **Y.Gelbstein (PI)**, and Ricardo GmbH (Germany), "PowerDriver: An Innovative Functionally Graded Thermoelectric Technology for Waste Heat Energy Recovery to Reduce Fuel Consumption, Emissions and Costs", PowerDriver- 286611 – FP7 – SME – 2011 –BSG, 425,000USD (2012-2014).
5. **Yaniv Gelbstein (PI)**, Robert Bosch GmbH support for Development of Novel Half Heusler Thermoelectric Alloys, 82,000USD (2010-2012).
6. **Yaniv Gelbstein (PI)**, NRCN support for the development of Novel Materials for Renewable Energy Applications, 50,000 USD (2012-2013).
7. **Yaniv Gelbstein (PI)** and Gabi Bar-Ness, Development of Novel Cements, CEA-NRCN support of 30,000 USD (2012-2013).
8. **Yaniv Gelbstein (PI)** and Yaron Amouyal, "Enhancement of the Thermoelectric Conversion Efficiency of  $(\text{PbTe})_x(\text{AgSbTe}_2)_{1-x}$  Compounds upon Controlled Nano Scale Precipitation for Renewable Energy Applications", BGU-Technion Collaborative Research in Renewable Energies – Adelis Foundation Grant, 50,000USD (2012-2014).
9. **Yaniv Gelbstein (PI)**, "Toward high ZT nanostructured half-Heusler based thermoelectric materials", Israel Science Foundation (ISF) Individual Research Grant No. 497/12, 220,000 USD (2012-2016).
10. **Yaniv Gelbstein (PI)**, "Seebeck coefficient and Thermal Conductivity apparatus purchasing request", Israel Science Foundation (ISF) Equipment Purchasing Grant No. 1578/12, 150,000 USD (2012-2013).

11. **Yaniv Gelbstein (PI)**, "Improved Solar to Electrical Energy Conversion using Miniature Thermoelectric Devices", IDF-MAFAT grant of 50,000 USD, (2013-2014).
12. **Yaniv Gelbstein (PI)** and Nurit Ashkenasy, Intel Support of 15,000 USD for purchasing a Hall effect apparatus for the Processing and Characterization of Electronic Materials Teaching Lab (2012-2013).
13. \***Yaniv Gelbstein (PI)**, "Development of a hybrid solid oxide fuel cell / thermoelectric generator", Ministry of National Infrastructures, Energy and Water Resources grant (3/15), No. 215-11-022, of 148,448 USD (2016-2019).
14. \***Yaniv Gelbstein (PI)**, "Development of a direct thermal to electrical energy system based on a thermoelectric generator", Ministry of National Infrastructures, Energy and Water Resources grant (3/15), No. 215-11-050, of 125,087 USD (2016-2019).
15. \***Yaniv Gelbstein (PI)**, "Highly thermoelectrically Efficient nano-structured anisotropic GeTe based alloys", Israel Science Foundation (ISF) Individual Research Grant No. 455/16, 220,000 USD (2016-2020).
16. \* **Yaniv Gelbstein (PI)** (with Dr. Brian Rosen, Dr. Michael Gozin, TAU), "Synthesis of nano-structured anodes for solid oxide fuel cells", Ministry of National Infrastructures, Energy and Water Resources grant (76/17), No. 217-11-027, of 25,000 USD (2018-2021).
17. \* **Yaniv Gelbstein** (with Theodora Kyratsi, and Nikolaos Vlachos, University of Cyprus), Sustainable and affordable half-Heusler based thermoelectric converters for utilization of waste heat into electrical power in maritime applications (MarTEnergy), M-ERA.NET (of the EU), grant No. 0317/04, of 125,000 USD (2018-2021).
18. \* **Yaniv Gelbstein (PI)**, "Development of a hybrid photovoltaic-thermoelectric energy conversion device", Ministry of National Infrastructures, Energy and Water Resources grant (55/18) No. 218-11-037, of 170,250 USD (2019-2022).
19. \* **Yaniv Gelbstein (PI)**, "Thermoelectric optimization of  $Mg_2(Si,Ge,Sn)$  alloys", Israel Science Foundation (ISF) Individual Research Grant No. 326/20, 220,000 USD (2020-2024).
20. \* **Yaniv Gelbstein (PI)**, "R&D of a Hydrogen Carrier based on Magnesium Hydride: Improvement of Hydrogen Gas Release via Thermolysis and Hydrolysis Processes for the Generation of Electric Energy via Operation of PEMFC fuel

cells”, Ministry of National Infrastructures, Energy and Water Resources grant (45/20), No. 220-11-050, of 195,000 USD (2021-2024).

21. \* **Yaniv Gelbstein (PI)**, “Development of a technological demonstrator for enhancement of the photovoltaic efficiency in warm countries”, Ministry of National Infrastructures, Energy and Water Resources grant (41/21), No. 221-11-033, of 160,000 USD (2022-2025)

## Statement of the research

The main research topic in BGU relates to development of highly efficient thermoelectric materials, using both single crystal growth and advanced powder metallurgy approaches (including the Spark Plasma Sintering, or SPS, method). Very high thermoelectric figure of merit ( $ZT$ ) values of up to 1.8 were obtained using both optimal electronic doping (including generation of resonant states for achieving of the Fermi Level Pinning effect) and generation of nanostructures for minimization of the lattice thermal conductivity. Recently, thermodynamically driven nano-features methods were undertaken for reduction of the lattice thermal conductivity, utilizing known physical metallurgy approaches, such as the spinodal decomposition reaction. Such features were found as much more stable upon operation, compared to consolidation of nano powder, which undergoes coarsening and consequently  $ZT$  degradation at a high temperatures operation. Other research approaches are focused on understanding the mechanisms correlating between mechanical and electronic properties of thermoelectric materials and investigation of second order phase transitions influence on the electronic stability of semiconducting compounds. All of these approaches are motivated by the desire to develop mechanically stable highly efficient thermoelectric alloys for practical power generation applications. Currently PbTe, GeTe, Bi<sub>2</sub>Te<sub>3</sub>, half-Heuslers, silicides and Pb<sub>1-x</sub>Sn<sub>x</sub>Te based alloys are mostly studied.

## Research Plan

Future research plan includes:

1.  $ZT$  enhancement due to generation of stable nano features in silicides (such as higher manganese silicide, see publications [23,30,34,35] and presentations [79,80,86,90]), half Heuslers (such as TiNiSn based intermetallics, in the frame of the ISF grant, see publications [20,26,32,36] and presentations [72,78,81,84,89,91,95,100]) or chalcogenides (PbTe [1-3] or GeTe [27,37,41] based compounds, funded by BSF), by thermodynamically driven reactions (e.g. spinodal decomposition [13-15], discontinuous precipitation [16-17], etc.)

2. Development of thermoelectric modules with enhanced efficiency values. The research will include development of functionally graded materials with optimal carrier concentration profiles along the samples, development of segmentation concepts, and development of compatible soldering and brazing materials as well as metallization concepts and diffusion barriers. In the frame of the MAFAT grant.
3. Mechanical properties research of thermoelectric materials for optimizing the durability of practical devices [7,9].
4. Thermoelectric properties degradation research by means of sublimation, oxidation and high temperature adverse diffusion effects. In the frame of the MAFAT grant
5. Optimal electronic doping research by means of resonant states generation or optimal Fermi level pinning effect. An example is In doping of PbTe [1-3].
6. Investigation of twinning and dislocations effect in scattering of both electrons and phonons for thermoelectric properties optimization [29].