CURRICULUM VITAE

Name: Elad Priel

Date & place of birth: December 18, 1977, Haifa, Israel.

Citizenship: Israeli

Marital status: Married +3.

Affiliation: NRCN-Department of Materials Science and SCE – Mechanical Engineering Department, Beer Sheva, P.O.B. 950, 84100.

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Residence address: Mezadot Yehoda (Bait-Yatir)

Military service: 1996-2000 (Medic)

1. Academic education

   2007-2011 Ph.D. in Mechanical Engineering. Ben Gurion University of the Negev, Israel. Dissertation title: The coupled passive active response of the human artery wall investigated by p-FEM's. Adviser: Prof. Yosibash, Z.

   2005-2007 M.Sc. in Mechanical Engineering. Ben-Gurion University of the Negev, Israel. Dissertation title: Mixed mode failure criteria for V-notched brittle elastic structures. Adviser: Prof. Yosibash, Z.

   2001-2005 B.Sc. in Mechanical Engineering (Graduated with excellence). Ben-Gurion University of the Negev, Israel.

2. Employment

   2012-Present Senior researcher, R&D Division, Materials Science department, NRCN.

   2019-Present Senior Lecturer. Mechanical Engineering department, SCE - Sami Shamoon College of Engineering, Israel.

   2013-2019 Lecturer. Mechanical Engineering department, SCE - Sami Shamoon College of Engineering, Israel.

3. Academic research and development activities

   3.1. Previous research and development activities

   2007-2011 Investigation of the coupled passive active mechanical response of the human artery wall using high order finite element methods.

   2007-2011 Development of a noval 3D p-version finite element program for solving non-linear boundary value problems in anisotropic hyper-elastic structures.

   2005-2007 Development of failure initiation criteria for mixed mode loading of V-notched brittle structures

   3.2. Present research and development activities

Since 2013 Computational and experimental metal forming

Since 2013 A computational and experimental studies of the Small Punch Test method applied to thin metallic foils

Since 2013 A computational and experimental study of human oocyte Zona pellucida mechanics – In collaboration with Soroka Medical Center - IVF Unit.

Since 2013 A computational and experimental study of human skin mechanics using high order p-version finite element methods.

Since 2019 Multiscale modelling of AMCs from powder compaction to effective properties.

4. Grants and awards

4.1. Grants

2022-2023 Schneck R. and Priel E. (BGU and SCE), Reactive structural materials, IMD, MAFAT, 72700$ (31,250$ SCE part).

2021-2024 Priel, E and Har-Vardi, I. (SCE – Sami Shamoon College of Engineering & BGU), The mechanical response of the human Zona Pellucida and its influence on embryo implantation potential during in-vitro fertilization treatment (Israel Science Foundation – ISF), 140,000$.

2020-2021 Priel, E and Trabelsi, N. (SCE – Sami Shamoon College of Engineering) Investigting powder compaction and aluminum bonding. Industry Grant from the Israli Atomic Energy Commision (IAEC), 60,000$.

2017-2020 Priel, E and Trabelsi, N. (SCE – Sami Shamoon College of Engineering) Investigting the mechanical properties of Aluminum Metrix Composites (AMC's). Industry Grant from the Israli Atomic Energy Commision (IAEC), 282,000$. (for 3 years)

2017 -2018 Priel, E and Trabelsi, N. (SCE – Sami Shamoon College of Engineering), A computational study of Equal Channal Angular Extrusion of Molibdinum, Industry Grant from Refael Advanced Defence Systems Ltd., 8500$.

2016-2017 Priel, E (SCE- Sami Shamoon College of Engineering), A computational and experimental study of human skin mechanics, Grant from the SCE research authority 8500$.

2013-2016 Priel, E (SCE- Sami Shamoon College of Engineering), A computational study of the mechanics of the human oocyte zona pellucida, Grant from the SCE research authority 25000$.

4.2. Awards

2021 Excellence in teaching award. Department of mechanical engineering -SCE

2021 Research excellence award for the year 2020 given by the head of the Materials science department NRCN

2020 NRCN certificate of recognition for outstanding research 2019 (Given by the NRCN C.E.O)

2018 Best poster award, IAEC engineering conference, given by the Chief scientist of the IAEC.

2017 NRCN best research award for the year 2016 (Given by the NRCN C.E.O)
2016 Best poster award, IAEC Materials conference, given by the Chief scientist of the IAEC.
2015 Excellence in teaching award (SCE-Mechanical Engineering department)
2012 Katzir Fellowship given by IMOD (Israel Ministry of Defense)

2011 First place in IACMM (Israel Association of Computational Methods in Mechanics) yearly lecture competition

2010 Excellence in teaching award (Given by the Dean of the Engineering faculty of BGU)

2009 Excellence in teaching award (Given by the head of the mechanical Engineering department of BGU)

2007 Negev Scholarship for Phd studies (Pharan class)

2006 Ben-Amiti Excellence award for out-standing research in the field of Aerospace and Aeronautics (3500$)

2006 Mechanical Engineering department excellence award.

5. List of publications

5.1. Peer reviewed papers in Journals

1. O. Sinitsky, N. Trabelsi, **E. Priel**, "The mechanical response of epoxy-sisal composites considering fiber anisotropy: A computational experimental study", Fibers, 10:43, 2022 ***(Impact factor 3.2, Q1-Structural Engineering)***

2. A. Farkash, B. Mittelman, S. Hayun, **E. Priel**, "Aluminum matrix composites with weak particle matrix interfaces: Effective elastic properties investigated using micromechanical modeling", Materials, 14:6083, 2021. ***(Impact factor 3.6, Q1-Metallurgy)***

3. B. Mittelman, M. Ben Haroush, I. Aloush, L. Mordechay, **E. Priel**, "Bonding of Al6061 by hot compression forming: A computational and experimental study of interface conditions at bonded surfaces", Materials, 14:3589, 2021. ***(Impact factor 3.6, Q1-Metallurgy)***

4. **E. Priel**, T. Priel, I. Szaingurten-Solodkin, T. Wainstock, Y. Perets, A. Zeadna, A. Harlev, E. Lunenfeld, E. Levitas, I. Har-Vardi,"Zona pellucida shear modulus, a possible novel non-invasive method to assist in embryo selection during in-vitro fertilization treatment, Scientific reports, Vol 10, 2020. ***(Impact factor 4.379, Q1-Multidisplinary).***

5. **E. Priel**, N.U. Navi, B. Mittleman, N. Trabelsi, M. Levi, S. Kalabukhov, S. Hayun, "Cold forming of Al-TiB2 composites fabricated by SPS: A computational experimental study", Materials, Vol 13, 2020. ***(Impact factor 3.6, Q1-Metallurgy)***
6. M. Aizenshtein, **E. Priel**, S. Hayun, "Effect of pre-deformation and B2 morphology on the mechanical properties of Al0.5CoCrFeNi HEA", Materials Science and Engineering A, Vol 788, 2020. ***(Impact factor 6.044, Q1-Metallurgy).***
7. B. Mittleman, G. M. Guttmann**, E. Priel**, "A computational analysis of thermo-mechanical fields in hot roll bonding of aluminum validated by experiments", Journal of Minerals, Metals and Materials Society, Vol 72 (2), 2019, pp:718-728. ***(Impact factor 2.471, Q1-Engineering).***
8. **E. priel**, B. Mittelman, N. Trabelsi, Y. Cohen, Y. Koptiar, R. Padan, "A computational study of equal channel angular pressing of molybdenum validated by experiments", Journal of Materials Processing Technology, Vol 264, 2019, pp:469-485. ***(Impact factor 6.13, Q1-Metals and Alloys)***
9. B. mittelman, **E. Priel**, N.U. Navi, "A finite element study of thermo-mechanical fields and their relation to friction conditions in Al1050 ring compression tests", Journal of Manufacturing and Material Processing, Vol 2 (4), 2018, pp 83. ***(Impact factor 3.61, Q1-Mechanical Engineering)***
10. **E. Priel**, B. Mittelman, S. Haroush, A. Turgeman, R. Shncek, Y. Gelbestein, "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, (2018), Vol (135), pp:484-498. ***(Impact factor 6.61, Q1-Mechanical Engineering)***
11. **E. Priel**, Z. Ungarish, N. U. Navi, "Co-extrusion of a Mg/Al Composite Billet: A Computational Study Validated by Experiments" Journal of Materials Processing Technology 2016, Vol (236) pp: 103-113. ***(Impact factor 6.13, Q1-Metals and Alloys)***
12. **E. Priel**, S. Haroush, A. Busiba, D. Moreno, I. Silverman, A. Turgeman, R. Shneck, Y. Gelbstein, "Estimation of the mechanical properties of SS-316L thin foils by small punch testing and finite element analysis", Materials & Design 2015, Vol (83) pp:75-84. ***(Impact factor 8.94, Q1-Mechanical Engineering)***
13. **E. Priel** and Z. Yosibash, "Artery active mechanical response: High order finite element implementation and investigation", Computer Methods in Applied Mechanics and Engineering 2012, Vol (237-240) pp: 51-66. ***(Impact factor 6.51, Q1-Computational Mechanics)***

14. Z. Yosibash and **E. Priel**, "p-FEMs for hyperelastic anisotropic nearly incompressible materials under finite deformations with applications to arteries simulation", International Journal of Numerical Methods in Engineering 2011, Vol (88) pp:1152-1174. ***(Impact factor 3.1, Q1-Numerical Analysis)***

15. **E. Priel** and Z. Yosibash and Dominique Leguillon "Failure initiation at a blunt V-notch tip under mixed mode loading", International Journal of Fracture 2008 Vol 149 pp 143-173. ***(Impact factor 2.43, Q1-Computational mechanics)***
16. **E. Priel**, A. Bussiba, I. Gilad and Z. Yosibash "Mixed mode failure criteria for brittle elastic V-notched structures", International Journal of Fracture 2007, Vol 144 pp 247-265. ***(Impact factor 2.43, Q1-Computational mechanics)***

17. Z. Yosibash and **E. Priel** and D. Leguillon "A failure criterion for brittle elastic materials under mixed mode loading", International Journal of Fracture 2006, Vol 141 pp 291-312. ***(Impact factor 2.43, Q1-Computational mechanics)***

5.2 Peer reviewed paper publications in conference proceedings

18. B. Mittelman, M. Ben-Haroush, I. Aloush, L. Mordechay, **E. Priel**, "Boding of aluminum alloys by hot compression forming: A computational and experimental study of interface conditions", Conference Proceedings M2D-2022, Funchal, Portugal, June, pp:111-112.
19. **E. Priel** and Z, Yosibash, "The mechanical response of the human coronary artery: Simulation by high order finite element analysis", Conference Proceedings CMBE 2011 GMU, Fairfax, U.S.A, March-April, pp:371-374.

5.3 Invited papers

20. **E. Priel**, "The mechanical response of the human artery: A high order p-FE computational study", SCE-science 4, May 2014

21. **E. Priel,** Z. Yosibash, "The coupled passive active mechanical response of a slightly compressible artery investigated by p-FEMs", IACMM annual bulletin, February 2012.

5.4 Peer-reviewed conference presentations

1. N. Rom, J. Bortman, **E. Priel**, "Modelling ductile fracture under general loading conditions", ISCM-49, 2022, SCE.

2. **E. Priel**, B. Mittelman, N.U. Navi, S. Panker, M. Hasmand, S. Cohen, S, Hayun, N. Trabelsi, "Cold compaction of Al-TiB2 powders investigated using micro-mechanical multiscale finite element modelling", IMEC-19, 2021, TAU, Israel.
3. **E. Priel**, B. Mittelman, N. Trabelsi, N. Navi, S. Haroush, N. Biton, O. Rahamim, S. Hayun, N. Frage "The mechanical response and failure of Al-TiB2 composites produced by Spark Plasma Sintering – A computational study validated by experiments", CFRAC 2019, Braunshweig, Germany.
4. **E. Priel**, T. Priel, Y. Perez, A. Harlev, N. Steiner, E. Levitas, I. Har-vardi, "A computational study of human oocyte Zona pellucida mechanics: Can oocyte mechanics be used as a predictor for embryo implantation potential?", ICME2018, BGU, Israel- October 2018.
5. **E. Priel**, B. Mittleman, N. Trabelsi, N. Navi, N. Bitton, O. Rahamim, S. Haroush, S. Hayun, N. Frage, "The mechanical response and failure of Al-TiB2 composites produced by spark plasma sintering: A multi-scale computational study", WCCM 2018, New-York, USA **(Keynote lecture)** – September 2018.
6. B. Mittelman, G. Guttmann, **E. Priel**, "A computational study of aluminum roll bonding validated by experiments", TIME2018, Haifa, Israel- May 2018.
7. Y. Koptiar, Y. Cohen, R. Padan, I. Gutman, N. Trabelsi, B. Mittelman, **E. Priel**, "Equal Channel Angular Pressing of Molybdenum", TIME2018, Haifa, Israel- May 2018.
8. I. Har-Vardi, T. Priel, Y. Perez, A. Harlev, A. Zeadna, N. Steiner, E. Levitas, **E. Priel**, "Human oocyte Zona Pellucida mechanics as a predictor factor for embryo implantation potential",Israeli Research Conference on human Fertility, AYALA-2018, Tel-Aviv, Israel, -April 2018.
9. **E. Priel**, B. Mittleman, N. Trabelsi, Y. Cohen, Y. Kophtiar, R. Padan, "A computational study of molybdenum equal channel angular pressing validated by experiments", ISCAM 44, BGU, Israel.
10. **E. Priel**, B. Mittleman, N. Trabelsi, N.U. Navi, O, Rahamim, S, Hayun, N, Frage, "A multiscale finite element study of the relation between particle volume fraction and affective mechanical properties of Al-TiB2 fabricated by SPS", IMEC 2018, Dead sea, Israel.
11. O. Rahamim, N.U. Navi, **E. Priel,** S. Kalabukhov, S. Hayun, N. Frage, "Microstructure and mechanical properties of Al-TiB2 fabricated by SPS", IMEC 2018, Dead sea, Israel.
12. **E. Priel**, Z. Ungarish, N.U,Navi, “Co-extrusion of a Mg/Al composite billet: A computational study validated by experiments”, COMPLAS 2017, Barcelona, Spain.

13. B. Mittelman, **E. Priel**, N.U,Navi, “Investigation of friction conditions in metal forming processes: A computational study validated by ring compression tests and extrusion experiments”, COMPLAS 2017, Barcelona, Spain.
14. **E. Priel**, B.Mittelman, S. Haroush, “A computational and experimental study of the small punch test method applied to non-standard SS-316L metallic foils”, ISCM-42 2017, Technion, Israel.
15. **E. Priel**, S. Haroush, “A computational and experimental study of the small punch test method applied to non-standard SS-316L metallic foils”, ICME 2016, Technion, Israel.
16. B. Mittelman, **E.Priel**, N.U. Navi,”Investigation of friction conditions in metal forming processes: A computational study validated by ring compression tests and extrusion experiments”, ICME 2016, Technion, Israel.
17. B. Mittelman, **E. Priel**, N.U. Navi, “Characterization of friction conditions in metal forming processes utilizing finite element analysis and ring compression tests”, ISCM-41 October 2016, SCE , Israel.
18. **E.Priel**, T. Priel, I. Har Vardi, “The mechanical response of the human oocyte: A computational case study conducted in a clinical setting”, ICCM 16 August 2016, UC-Berkeley, California U.S.A.
19. Z. Yosibash, N. Omer, S. Shannon, B. Mittelman, **E. Priel**, “When 3-D Edge Singularities in Linear Elasticity Meet The Real World”, 8th Singular Days June 2016, Nancy France.
20. **E. Priel**, Z. Yosibash, “On the “p-prediction” method for non-linear hyper-elastic problems in the framework of p-FEMs”, HOFEIM May 2016, Jerusalem, Israel.
21. **E. Priel**, N.U. Navi, “Evolution of thermo-mechanical fields in hot hollow extrusion of aluminum: A computational study validated by experiments”, IMEC 17 February 2016, Bar-Ilan University , Israel.
22. B. Mittelman, **E. Priel**, N.U. Navi, “Charcterization of friction conditions utilizing the ring compression test”, IMEC 17 February 2016, Bar-Ilan University , Israel.
23. E. Chakotay, I. Alon, G.M. Guttmann, R. Carmi, A. Cohen, **E. Priel**, Y. Snir, A. Bussiba, “Orientation and strain rate effects on the mechanical response of 2024 at different microstructures”, IMEC 17 February 2016, Bar-Ilan University , Israel.
24. **E. Priel**, T. Priel, I. Har Vardi, “The mechanical response of the human oocyte: A computational study conducted in a clinical setting”, ISCM-39 November 2015, Technion, Israel.
25. Z. Ungarish, **E. Priel**, M.H. Mintz and N. U. Navi, “Co-extrusion of an Aluminum-Magnesium Composite Billet: Investigation of Material Flow and Interface

Interaction", the 33rd Israeli Conference on Mechanical Engineering, March 2 -3, 2015, Tel-Aviv, Israel.

26. **E. Priel** and N. U. Navi, "Hot Hollow Forward Extrusion of Aluminum: A Computational study validated by experiments", the 33rd Israeli Conference on Mechanical Engineering, March 2 -3, 2015, Tel-Aviv, Israel.
27. S. Ifargan, O. Beeri, E. Sabatani, Z. Barkay, **E. Priel** ,N. Eliaz, " Hydrogen effect on precipitation hardened stainless steel in different thermo-mechanical conditions", NACE December 2014, Kfar Maccabia, Ramat-Gan, Israel.
28. **E. Priel**, Z.Ungarish , N.U. Navi, "Co-extrusion of a magnesium/aluminum composite billet: A computational study validated by experiments", ABAQUS users conference November 2014, Ramat-Gan – Invited lecture, Israel.
29. **E. Priel**, Z.Ungarish , N.U. Navi, "Extrusion cladding of magnesium by aluminum: A computational study validated by experiments", ISCM-37 October 2014, Tel-Aviv University, Israel.
30. **E. Priel**, "The effect of tissue compressibility on the coupled passive-active mechanical response of artery walls: A high order p-version finite element study", WCCM July 2014, Barcelona, Spain
31. S. Ifargan, O. Beeri, **E. Priel**, Z. Barkay, N. Eliaz, "Hydrogen diffusivity in Custom 465 stainless steel in different thermo-mechanical conditions", IMEC 16 February 2014, Technion , Israel.
32. Z.Ungarish, **E. Priel**, N.U. Navi, "Trends in aluminum clad magnesium by extrusion", IMEC 16 February 2014, Technion, Israel.
33. **E. Priel** and O. Shadot and D. Cohen and E. Kahana "Investigation of AA-6063 ring expansion and fragmentation at high strain rates: Finite element analysis validated by experimental observation ", ISCAM-34 Tel Aviv University, April, 2013
34. **E. Priel** and Z. Yosibash. "The coupled passive-active mechanical response of a slightly compressible artery investigated by p-FEM's ", ECCOMAS 2012 Austria, Vienna September, 2012
35. **E. Priel** and Z. Yosibash. "The coupled passive-active mechanical response of a slightly compressible artery investigated by p-FEM's ". ISCAM 31 Ben-Gurion University, Beer-Sheva, Israel October, 2011
36. **E. Priel** and Z.Yosibash. "Investigation of passive arterial mechanical response by high order finite element methods ". Mathematical methods in Systems Biology Tel-Aviv University, Tel-Aviv, Israel January, 2010

37. **E. Priel** and Z.Yosibash. “Analytical and numerical investigation of the response of anisotropic hyper-elastic materials “. ISTAM Tel-Aviv University, Tel-Aviv, Israel December, 2009
38. **E. Priel** and Z.Yosibash “Failure of blunt V-notched brittle structures” Invited Lecture , Paris 6 University department of mechanical engineering, France 2008
39. **E. Priel** and Z.Yosibash. “Failure criteria in brittle elastic V- notched structures under mixed mode loading: p-FEM & Experiments”. HOFEM 07 – Herrsching, Germany, May 2007
40. **E. Priel** and Z.Yosibash. “Predicting mechanical failure of V-notched components subject to mixed mode loading”, Fifth Singular Days Conference –Luminy France April, 2007
41. **E. Priel** and Z.Yosibash. “Brittle failure initiation V- notch tip under mixed mode loading “. ISTAM Tel-Aviv University, Tel-Aviv, Israel January, 2006
42. **E. Priel** and Z.Yosibash. “Mixed mode failure initiation at a V-notch tip “. ISCM-21 Ben-Gurion University, Beer-Sheva, Israel October, 2006

6. Courses taught

Since 2018	B.Sc. program. Biomechanics, SCE - Sami Shamoon College of Engineering, Israel.
Since 2013	B.Sc. program. Machine Design I, SCE - Sami Shamoon College of Engineering, Israel.
2013-2018	B.Sc. program. Machine Design II, SCE - Sami Shamoon College of Engineering, Israel.
Since 2013	B.Sc. program. Strength of Materials, SCE - Sami Shamoon College of Engineering, Israel.
2010-2011	B.Sc. program. Engineering Graphics, Ben-Gurion University of the Negev, Israel (Lecturer).
2010-2011	B.Sc. program. Introduction to finite element methods, Ben-Gurion University of the Negev, Israel (Teaching Assistant).
2007-2011	B.Sc. program. Heat Transfer I, Ben-Gurion University of the Negev, Israel (Teaching Assistant).
2005-2007	B.Sc. program. Strength of Materials I, Ben-Gurion University of the Negev, Israel (Teaching Assistant).
2005-2007	B.Sc. program. Strength of Materials Lab, Ben-Gurion University of the Negev, Israel (Lab Instructor).

7. Editorial roles

7.1. Editor/member of editorial board of journal

Since 2016 **Editor** of the Israeli Association of Computational Methods in Mechanics (IACMM) scientific news letter .

7.2. Manuscripts reviewer

Since 2018 MDPI- Materials.

Since 2018 MDPI – Metals.

Since 2020 MDPI- Applied sciences

Since 2016 Journal of Mechanical Engineering Science

Since 2016 Journal of Materials in Civil Engineering.

Since 2016 Journal of Advances in Materials Science and Engineering.

Since 2011 Journal of Engineering fracture mechanics

8. Positions in conferences

1. Conference organizer and Member of the Program Committee. Israeli Association of computational methods in mechanics' conference - ISCM-49, SCE, Israel, 2022.
2. Chair of morning session– WCCM18, World congress of computational mechanics, New-York, U.S.A, 2018.
3. Chair of morning session – ISCM – 42, Israeli Association of computational methods in mechanics' conference, Technion, Israel, 2017.
4. Conference organizer and Member of the Program Committee. Israeli Association of computational methods in mechanics' conference - ISCM-41, SCE, Israel, 2016.

9. Membership in professional/scientific societies

Since 2018 A member of the **executive committee** of the Israeli Association for Computational Methods in Mechanics (IACMM)

Since 2005 Member of the Israeli society of theoretical and computational mechanics.

Since 2011 Member of the European society of computational mechanics

10. Graduate student research supervision/examination

Ph.D. research thesis supervision

1. Olga Sinitzky, Ph.D candidate in Civil and Environmental Engineering "Microstructural model of transverse yarn anchorage mechanism in fabric-cement system considering fiber anisotropy", Co-advisor Prof. A. Peled, Department of Civil and Environmental Engineering.

M.Sc research thesis supervision

2. Moti Kayat, M.Sc in Mechanical Engineering (In progress) "Modeling the bonding of metallic materials by plastic forming at different strain rates", Co-advisor Prof. J. Bortman, Department of Mechanical Engineering BGU.

3. Nizan Rom, M.Sc in Mechanical Engineering (In progress) "Modeling ductile failure in metallic materials", Co-advisor Prof. J. Bortman, Department of Mechanical Engineering BGU.

4. Olga Sinitzky, M.Sc in Green Engineering (**Completed 2021**) "The mechanical response and failure of epoxy sisal composites", Co-advisor Dr. N. Trabelsi, Department of Mechanical Engineering-SCE.

5. Aharon Farkash, M.Sc in Materials Engineering (**Completed 2021**) "The influence of reinforcement-matrix interface bonding on AMCs effective elastic mechanical properties: A computational study", Co-advisor Prof. S. Hayun, Department of Materials Engineering BGU.

Ph.D Dissertation examiner

1. Mr. Cho Xu, "Elastic-plastic contact of cladded surface", Ph.D Dissertation exam, Mechanical Engineering department. Technion, Israel, July 2019.

M.Sc Thesis examiner

1. Mr. Matan Tubul, "Mechanical properties characterization for a cylindrical fuel clad using the segmented expanding cone-mandrel (SEM) method", M.Sc Thesis in Nuclear Engineering, Nuclear Engineering department BGU, April 2016.

2. Mr. Ziv Ungarish, "A study of the interface between Mg alloys and Al clad for understanding the cladding process by extrusion", M.Sc Thesis in Materials Engineering, Materials Engineering department BGU, February 2016.