

# TALI BAR-KOHANY, Ph.D.

## Curriculum vitae 2016

### Personal Details

Name: Tali Bar (-Kohany)  
Date & Place of birth: July 21, 1973, Beer-Sheva, ISRAEL  
Postal Address: P.O.B. 126, Lehavim, 8533800, ISRAEL  
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### Education

Ben-Gurion University of the Negev, Department of Mechanical Engineering

Ph.D.	2000 - 2004	A Study of the Mechanism of Sprays Formation by Bi-Component Liquid Flashing
M.Sc.	1998 - 2000	Strategic Analysis of Variable Valve Timing in SI Engines
B.Sc., <i>with honors</i>	1994 - 1998	Thermodynamical Analysis of a Practical Otto Cycle with Entropy and Availability
VKI, Belgium	23-27/ 1 /2006	Introduction to CFD, Von-Karman Institute for Fluid Dynamics
CISM, Italy	10-14/ 7 /2000	Interfacial Phenomena, The Marangoni Effect, Instability, Waves and Convective Flows, International Center for Mechanical Science

### Awards & Fellowship

2010	Honorary Fellow, Australian Institute of High Energetic Materials
2004 - 2010	Katzir Scholarships Program – Ministry of Defense
2002	1 <sup>st</sup> prize for presented poster at the 18 <sup>th</sup> Annual Symposium of the Israeli Section of the Combustion Institute, ICS-2002
2001	Major Ehud Ben-Amitai Scholarships Fund for Aeronautic research
2000	WOLF award for Outstanding Master achievements
1998	Head of Department award for excellence

## Relevant Experience

### WORK EXPERIENCE

- 10/2015 - present     *Adjoint faculty*  
Tel-Aviv University  
School of Mechanical Engineering
- 8/2013 – 8/2014     *Visiting professor*  
University of California, Irvine  
Department of Mechanical Engineering
- 2004 - present     *Senior Researcher*  
Nuclear Research Center of the Negev  
2004 -2007: Physics Department  
2007 – present: R&D Engineering Department  
Senior researcher: Fluid Dynamics, Vacuum, Boiling and Heat Transfer.
- 1998 – 2004     *Teaching Assistant*  
Department of Mechanical Engineering, BGU  
  
Frontal and Lab instruction in the courses of Thermodynamics, Heat Transfer and Fluid Mechanics

### COURSES TAUGHT

- 2015     *Lecturer*  
Outside, Energy Engineering Unit, BGU  
“Introduction to energy engineering – thermodynamics”
- 2014     *Lecturer*  
Outside, Department of Biotechnology Engineering, BGU  
First course of "Thermodynamics"
- 10/2012 – present     *Lecturer*  
Outside, Management and Safety Engineering Unit for Graduate studies, BGU, Principles of combustion processes
- 2-6 /2012     *Lecturer*  
Outside, Department of Mechanical Engineering, SCE  
First course of "Heat transfer"
- 2012 -     *Lecturer, Developed syllabus and overall course structure*  
Australian Institute of High Energetic Materials,  
Two-Phase & Choked Flows and Their Application in Spray Systems
- 2008 - 2010     *Lecturer*  
Outside, Department of Mechanical Engineering, BGU  
First course of "Thermodynamics"

2004 – *Guest Lecturer*  
2008 Department of Materials Engineering, BGU  
Fundamentals of Leak Testing, for the course of Non-Destructive Evaluation

2002 - *Lecturer, Developed syllabus and overall course structure*  
2004 BGU School of Continued Education  
Physical Fundamentals of Mechanical Engineering

## STUDENTS

2016- **Lior Nahon**, supervision with Dr. Yosef Aharon  
present MS.c - Countercurrent limited critical heat flux with heat transfer to the wall.

2014- **Tal Eluk**, supervision with Prof. Avi Levi  
present MS.c - Two-phase reactive flow; CFD-DPM model of combustion process in a co-current gas-solid reactor.

2011 – **Naor Hayun**, supervision with Prof. Avi Levi  
2015 MS.c - Temperature profile control as a tool to improve chemical reaction in gas-particle downer

2013 – **Idan Cohen**, M.Sc. in Mechanical Engineering, BGU, supervision with  
2014 Prof. Gennady Ziskind  
MS.c - Study of the thermal behavior of a thermo-luminescence detector (TLD) due to gas heating

2010 – **Kobi Dahan**, supervision with Prof. Eran Sher  
2012 MS.c - Gas leakage and flammability into enclosures

2009 – **Ravit Rozenfeld**, supervision with Prof. Gennady Ziskind  
2011 MS.c - Study of the thermal behavior of a thermo-luminescence detector (TLD) due to gas heating

## Scientific Publications

### Journal Papers

1. **Bar-Kohany, T.** and Levy, M., “State of the art review of flash boiling atomization”, *Submitted to Atomization and Sprays*.
2. **Bar-Kohany, T.** and Sirignano, W.A., (2016), “[Transient combustion of a methane-hydrate sphere](#)”, *Combustion and Flames*, Vol.163, pp.284-300.
3. Cohen, I., **Bar-Kohany, T.**, German, U. and Ziskind, G., (2014), “[Optimization of the temperature profiles due to a nitrogen jet impinging on a TLD detector](#)”, *Radiation and Measurements*, Vol.70, pp. 48-51.
4. Sher, E., Sher, I. and **Bar-Kohany, T.**, (2013), “[Another view of the upper and intermediate explosion limits of a H<sub>2</sub>-O<sub>2</sub> system.](#)”, *Elsevier, International Journal of Hydrogen Energy* 38, pp.14912-14914, 2013

5. **Bar-Kohany, T.** and Dahan, K., (2012), "[Evaluation of the one-step hydrogen-oxygen global reaction rate in a non-premixed mixture to predict auto-ignition limits](#)", *International Journal of Hydrogen Energy*, Vol.37(19), pp.14669-14675.
6. **Bar-Kohany, T.** and Stern, A., (2011), "[Prediction of Container Hermeticity for Isostatic Pressuring Process](#)", *Research Bulletin of the Australian Institute of High Energetic Materials*, Vol.1, pp.10-27.
7. **Bar-Kohany, T.**, Rozenfeld, R., Weinstein, M., Abraham, A., German, U., Alfassi, Z.B. and Ziskind, G., (2011), "[Thermal Behavior of a LiF Crystal Mounted in a TLD Card and Heated by Jet Impingement](#)", *Radiation and Measurements*, Vol.46(12), pp.1432-1435.
8. Sher, E., **Bar-Kohany, T.** and Rashkovan, A., (2008), "[Flash Boiling Atomization](#)", *Invited Review, Progress in Energy and Combustion Science (PECS)*, Vol. 34(4), pp.417.
9. **Bar-Kohany, T.**, I. Sher and E. Sher, (2007), "[Choked Flow of a Two-Phase Mixture Through and Aperture: a Theoretical Approach](#)", *Atomization and Sprays*, Vol. 17(5), pp.431-449.
10. **Bar-Kohany, T.** and Stern, A., (2007), "[Lifetime Estimation of MOEMS Devices](#)", *Journal of Electronic Packaging*, Vol. 129, pp.144-148.
11. **Bar-Kohany, T.** and E. Sher, (2004), "[Effervescent Atomization Under Subsonic and Choked Conditions – a Theoretical Approach](#)", *Chem. Eng. Sci.*, Vol. 59, pp.5987-5995.
12. **Bar-Kohany, T.** and E. Sher, (2004), "[Subsonic Atomization Effervescent: a Theoretical Approach](#)", *Atomization and Sprays*, Vol. 14(6), pp.495-509.
13. **Bar-Kohany, T.** and E. Sher, (2002), "[Optimization of Variable Valve Timing for Maximizing Performance of an Unthrottled SI Engine – a Theoretical Study](#)", *Energy*, Vol. 27, pp.757-775.
14. **Bar-Kohany, T.** and E. Sher, (1999), "[Using the 2<sup>nd</sup> Law of Thermodynamics to Optimize Variable Valve Timing for Maximizing Torque in a Throttled SI Engine](#)", *SAE Technical Papers*, 1999-01-0328.

## Conference papers

### International Conferences

1. Eluk, T., **Bar-Kohany, T.**, Korytnyi, E., and Levy, E., "Pulverized coal combustion modelling for downer type reactors", *8<sup>th</sup> International conference for conveying and handling of particulate solids*, May 2015, Tel-Aviv, Israel.
2. **Bar-Kohany, T.** and Dahan, K., "Hydrogen Release, Dispersion and Auto-Ignition In Enclosures", *7<sup>th</sup> Mediterranean Combustion Science (MCS)*, September 11-15, 2011, Sardinia, Italy.
3. **Bar-Kohany, T.** and E. Sher, "Critical Discharge from Flash Boiling Atomizer", *10<sup>th</sup> Joint European Thermodynamic Conference (JETC)*, June 22-24, 2009, Copenhagen, Denmark.

4. **Bar-Kohany, T.** and E. Sher, "Spray Formation by Bi-Component Liquid Flashing Under Sub- and Choked Conditions", *ICHMT*, June 5-10, 2005, Antalya, Turkey.
5. A. Stern, M. Kemelman, **T. Bar-Kohany**, and K. Feldman, "Hermetic Encapsulation of MOEMS by Fluxless Soldering", *Welding and Joining*, January 25-28, 2005, Tel-Aviv, Israel
6. K. Feldman, **T. Bar-Kohany** and A. Stern, "Detection of Fine Leaks in MOEM Hermetic Sealed Cavities", *Welding and Joining*, January 25-28, 2005, Tel-Aviv, Israel.
7. **Bar-Kohany, T.** and E. Sher, "Spray Formation by Bi-Component Liquid Flashing Under Sub- and Choked Conditions: a Theoretical Approach", *ILASS-EUROPE*, September 6-8, 2004, Nottingham, UK.
8. **Bar-Kohany, T.** and E. Sher, "Spray Formation by Bi-Component Liquid Flashing: a Theoretical Approach", *ILASS-EUROPE*, September 9-11, 2002, Zaragoza, Spain.
9. **Bar-Kohany, T.** and E. Sher, "Nucleation – Theory and Reality", *Bi-National Israel-Britain Workshop on Applied Mathematical Methods in Spray Combustion*, 2001, Beer-Sheva, Israel.
10. **Bar-Kohany, T.** and E. Sher, "Using the 2<sup>nd</sup> Law of Thermodynamics to Optimize Variable Valve Timing for Maximizing Torque in a Throttled SI Engine", *SAE International*, March 1-4, 1999, Detroit, Canada.

### National Conferences

11. 2015, 29<sup>th</sup> Annual Symposium of the Israeli Section of the Combustion Institute, Tel-Aviv, Israel
12. 2014, 33<sup>rd</sup> Israeli Conference on Mechanical Engineering, Tel-Aviv, Israel
13. 2014, 28<sup>th</sup> Annual Symposium of the Israeli Section of the Combustion Institute, Tel-Aviv, Israel
14. 2012, 26<sup>th</sup> Annual Symposium of the Israeli Section of the Combustion Institute, Tel-Aviv, Israel
15. 2012, 26<sup>th</sup> Conference of the Nuclear Societies in Israel, Dead-Sea, Israel.
16. Rozenfeld, R., **Bar-Kohany, T.**, Weinstein, M., Abraham, A., German, U., Alfassi, Z.B. and Ziskind, G., "Thermal Behavior of a TLD Detector Due to Heating by Jet Impingement", *The 25<sup>th</sup> Conference of the Nuclear Societies in Israel*, February, 2010, Dead-Sea, Israel
17. **Bar-Kohany, T.** and Sher, E., "Author look into the 3 Explosion Limits", *24<sup>th</sup> Annual Symposium of the Israel Section of the Combustion Institute*, December, 2009, Tel-Aviv, Israel
18. **Bar-Kohany T.**, Feldman, K. and A. Stern, "Optical Micro-electro-mechanical Systems – Wafer Level Encapsulation", *The 12<sup>th</sup> Israeli Materials Engineering Conference*, March 2006, Tel-Aviv, Israel.

19. **Bar-Kohany T.** and A. Stern, "Leak Testing of MOEMS – Theory and Practice", 30<sup>th</sup> Israel Conference on Mechanical Engineering, May 29-30, 2005, Tel-Aviv, Israel.
20. Sher, E., Rashkovan, A. and **Bar-Kohany, T.**, "Effervescent Spray", 21<sup>th</sup> Annual Symposium of the Israel Section of the Combustion Institute, December, 2005, Technion, Haifa, Israel
21. **Bar-Kohany, T.** and E. Sher, "A Study of the Mechanism of Sprays Formation by Bi-component Liquid Flashing", 30<sup>th</sup> Israel Conference on Mechanical Engineering, May 29-30, 2005, Tel-Aviv, Israel
22. **Bar-Kohany, T.** and E. Sher, "Spray Formation by Bi-Component Liquid Flashing: a Theoretical Approach", 20<sup>th</sup> Israeli Conference on Combustion, Beer-Sheva, Israel, December 9, 2004.
23. **Bar-Kohany T.** and A. Stern, "Hermeticity Tests of Sealed Cavities", ASNT-Israel, July 14, 2004.
24. **Bar-Kohany T.** and A. Stern, "Non-Destructive Leak Tests in Hermetic Sealed Cavities – Practical and Theoretical Considerations", ISME- Israel National Conference on Welding, March, 2004.
25. **Bar-Kohany, T.** and E. Sher, "A Study of Spray Formation by Bi-component Liquid Flashing", 29<sup>th</sup> Israel Conference on Mechanical Engineering, May 12-13, 2003, Haifa, Israel
26. **Bar-Kohany, T.** and E. Sher, "Variable Valve Timing for Gasoline Engines", 28<sup>th</sup> Israel Conference on Mechanical Engineering, June 14-15, 2000, Beer-Sheva, Israel

### **Reviewing for**

Atomization and Sprays, Begell House Inc.

Chemical Review Engineering

Energies

Fluids Engineering

International Journal of Hydrogen Energy

International Journal of Multiphase Flow

Journal of Heat Transfer

Scientific Reports