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RESUME

Full name: **Ran Gabai**

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ACADEMIC DEGREES

PhD - 2009, Faculty of Mechanical Engineering, Technion

M.Sc. - 2003, Faculty of Mechanical Engineering, Technion

B.Sc. - 2000, Faculty of Mechanical Engineering, Technion, cum laude

PROFESSIONAL EXPERIENCE

Current – 1/2015 – post-doc research at the Faculty of Mechanical Engineering, Technion

3/2016 - Visiting researcher, University of Southern California, Dep. Of Aerospace and Mech. Eng.

2014 - 2010 - CTO and co-founder, PreCim

2-8/2010 – Control Engineer, Solecta

2009 - 2010 - R&D Consultant, Rafael

2007 – 2009 - Researcher, Faculty of Mechanical Engineering, Technion

2000 – 2001 – R&D Engineer, W.A.C.

1998 – 2000 – Research Assistance, Faculty of Mechanical Engineering, Technion

1992 – 1995 – Army Service, IDF Artillery

RESEARCH INTERESTS

Experimental Mechanics: Intelligent and Optimal structures, Dynamics and Vibrations, System Identification, Signal Processing, Embedded systems and Control, Mechatronics.

PRIZES

Best researcher for year 2015, METRO450 a wafer metrology consortium under MAGNET

STUDENTS

M.Sc.

2016 - Ben Farkash, Title: Switching between Buckling Modes Using Dynamic Excitation

Faculty of Mech. Eng, Technion IIT

TEACHING EXPERIENCE

Lecturer:

Design of microprocessor based products, undergraduate course, Faculty of Mechanical Engineering, Technion

Teaching Assistant:

Design of microprocessor based products, Theory of Vibrations, Signal Processing for engineers, Rotor Dynamics, Mechatronics projects instructor; all at the Faculty of Mechanical Engineering, Technion.

PUBLICATIONS

Theses

PhD Dissertation: "Generation of traveling waves in finite structures in one and two dimensions"

M.Sc. Thesis: "Resonance Tracking Method – Application to a Squeeze-Film Object Levitation Device"

Refereed papers in professional journals

1. R. Gabai, & I. Bucher, "The Spatial and Temporal Excitation Generating Traveling Waves in Structures", *Journal of Applied Mechanics*, Volume 77, Issue 2, 2010
2. R. Gabai, & I. Bucher, "Excitation and sensing of multiple vibrating traveling waves in one-dimensional Structures", *Journal of Sound and Vibration*, 319(1-2), pp. 406-425, 2009.
3. Ran Gabay and Izhak Bucher, "Resonance tracking in a squeeze-film levitation device", *Mechanical Systems and Signal Processing*, 20(2006) pp.1696-1724.
4. Minikes, A., Gabay, R., Bucher, J., Feldman, M., "On the sensing and tuning of progressive structural vibration waves", *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, Volume 52, Issue 9, Sept. 2005.
5. Ran Gabai, Dotan Ilssar, Ran Shaham, Nadav Cohen and Izhak Bucher, "A rotational traveling wave based levitation device – Modelling, design, and control", *Sensors & Actuators: A. Physical*, Vol 255 pp: 34-45, 2017.

Accepted for publication

Submitted for publication

Izhak Bucher, Ran Gabai, Harel Plat, Eyal Setter and Amit Dolev, "Experimental travelling waves identification & tuning in mechanical structures", *Mathematics and Mechanics of Solids*, Submitted: 28-February-2017

Refereed papers in conference proceedings

1. Ran Gabai, Izhak Bucher, Dotan Ilssar and Nadav Cohen, "Acoustic Levitation and Propulsion Based on Traveling Waves Control", The 34th Israeli Conference on Mechanical Engineering ICME2016 Nov 22-23 2016, Haifa, Israel
2. Ben Farkash, Ran Gabai, Izhak Bucher and Harel Plat, "Switching Between Buckling Modes Using Dynamic Excitation", The 34th Israeli Conference on Mechanical Engineering ICME2016 Nov 22-23 2016, Haifa, Israel
3. Izhak Bucher, Dotan Ilssar, Ran Gabai, Nadav Cohen, Ran Shaham, Solomon Davis, "Controlled acoustic levitation – physical model and real-time digital implementation", IEEE International Conference on Advanced Intelligent Mechatronics (AIM), 2016

4. R. Gabai, E. Setter, H. Plat, I. Bucher, "Power flow control and travelling waves of vibration, the optimal force distribution." In *ICEDyn international conference on structural engineering dynamics*. 2009.
5. Ran Gabai and Izhak Bucher, "Generating traveling vibrating waves in finite structures", The 9th Biennial ASME Conference on Engineering Systems Design and Analysis ESDA08, July 7-9, 2008, Haifa, Israel
6. Ran Gabay and Izhak Bucher, "On vibrating traveling waves actuation, sensing, and tuning, in finite structures", 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, USA, November 5-10, 2006
7. Ran Gabay and Izhak Bucher, "Generating 1D and 2D directional vibration waves", ISMA2006, International conference on Noise and Vibration Engineering, Leuven, Belgium, September 18-20, 2006,
8. I. Bucher, M. Feldman, A. Minikes and R. Gabay, "Real-time Traveling waves and whirl decomposition", IMechE 8th international conference on Vibration in Rotating, September 7 - 9, 2004, Swansea, UK.
9. Bucher and R. Gabay " Resonance tracking in nonlinear system: application to a squeeze film levitation device", Smart Structures and Materials/NDE, San-Diego, March, 2004.
10. Bucher and R. Gabay "Non-Parametric and Parametric identification of a Nonlinear resonant squeeze-film", 2nd IFAC-Conference on Mechatronic systems, December 9-11, 2002.
11. I. Bucher, R. Gabay and M. Feldman, "Analysis of non-symmetric vibration of system under an electromagnetic field", ISMA2002, 6th International conference on Noise and Vibration Engineering, Leuven Belgium, September 16-18, 2002.

Patents

Tal Mokady, Ran Gabai, Coriolis mass flow meter and components thereof, 2013