

RESUME

Date: 13.10.2016

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ACADEMIC DEGREES

2015: MSc – Mechanical Engineering, Technion. (during a direct doctoral track).

2012: BSc – Cum Laude, Mechanical Engineering, Technion.

TA APPOINTMENTS

2012 – today: Teaching assistant, mechanical Engineering, Technion.

PROFESSIONAL EXPERIENCE

2008 – 2012: Mechanical engineer, from idea to products (I2P).

RESEARCH INTERESTS

- Structural dynamics, vibration
- Near-field acoustic levitation
- Control
- Fluid-structure interaction dynamics

TA EXPERIENCE

- Theory of vibrations, undergraduate-level, 2012, 2015 (frontal teaching)
- Modeling and identification of vibrating systems, graduate-level, 2013 (homework checking)
- Advanced robotics laboratory, undergraduate-level, 2013-16 (lab instructor)
- Microprocessor based product design, undergraduate-level, 2014-15 (frontal teaching)

REVIEWER FOR JOURNALS

ASME Journal of Vibration and Acoustics.

HONORS

- 2016: Excellence scholarship, funded by the Mechanical engineering Faculty (Technion), \$1665
- 2015: KLA-Tencor Excellence in Research Award, \$3000
- 2015: Metro 450 magnet consortium prize for excellence in research (see <http://www.metro450.org.il/>)
- 2013: HP Indigo Prize for excellence in studies, \$1000

PUBLICATIONS

- D. Ilssar and I. Bucher, *On the slow dynamics of near-field acoustically levitated objects under high excitation frequencies*, Journal of sound and vibration, 2015. 354: p. 154-166.
- D. Ilssar, I. Bucher and H. Flashner, *Modelling and closed loop control of near-field acoustically levitated objects*, Mechanical systems and signal processing, 2017. 85: p. 367-381.

Submitted papers

- R. Gabai, D. Ilssar, N. Cohen, R. Shaham and I. Bucher, *A rotational traveling wave based levitation device – Modelling, design, and control*. Submitted to Sensors and actuators A: Physical, Aug. 16. ArXiv ID: 1608.06809
- D. Ilssar and I. Bucher, *The effect of acoustically levitated objects on the dynamics of ultrasonic actuators*. Submitted to Journal of applied physics, Oct. 16.

In preparation

- I. Bucher, D. Ilssar, R. Gabai, R. Shaham and Nadav Cohen, *Near-field acoustic levitation – a review and some new results*. Prepared for Mechanical systems and signal processing.
- D. Ilssar, R. Shaham, R. Gabai, S. Davis and I. Bucher, *Accurate angular positioning of near-field acoustically levitated objects*. Prepared for Journal of sound and vibration.

CONFERENCES

Refereed papers in conference proceedings

- D. Ilssar*, I. Bucher and N. Cohen, *Structural optimization for one dimensional acoustic levitation devices - numerical and experimental study*, International Conference on Noise and Vibration Engineering, ISMA, Leuven Belgium, September 2014.
- I. Bucher*, D. Ilssar, R. Gabai, N. Cohen, R. Shaham and S. Davis, *Controlled acoustic levitation – physical model and real-time digital implementation*, IEEE International conference on Advanced Intelligent Mechatronics, Banff Alberta Canada, July 2016.
- D. Ilssar*, I. Bucher and H. Flashner, *Model based, nonlinear control of near-field acoustically levitated objects*, International Conference on Noise and Vibration Engineering, ISMA, Leuven Belgium, September 2016.

Other conference contributions

- D. Ilssar* and I. Bucher, *On the dynamics of acoustically levitated objects – analytical and experimental study*, The 33rd Israeli Conference on Mechanical Engineering, Tel-Aviv Israel, March 2015.
- D. Ilssar* and I. Bucher, *Modeling nonlinear effects on near-field acoustic levitation using slow-fast decomposition*, Audio and Acoustic Signal Processing Workshop, Beer-Sheva Israel, October 2015.
- R. Shaham*, D. Ilssar and I. Bucher, *Resonance tracking and digital control of acoustically levitated objects*, Audio and Acoustic Signal Processing Workshop, Beer-Sheva Israel, October 2015.
- D. Ilssar*, *Continuous Gain-Scheduling Control of Near-Field Acoustically Levitated Objects – Modeling and Experiments*, GSC 2016 The Annual Workshop of Graduate Students in Systems & Control, Holon Israel, May 2016.
- D. Ilssar*, I. Bucher and H. Flashner, *Accurate vertical positioning of near-field acoustically levitated objects, using model based, gain-scheduling control*, The 34th Israeli Conference on Mechanical Engineering, Haifa Israel, November 2016.
- R. Gabai*, I. Bucher, D. Ilssar and N. Cohen, *Acoustic Levitation and Propulsion Based on Traveling Waves Control*, The 34th Israeli Conference on Mechanical Engineering, Haifa Israel, November 2016.