



Moein Talebian Gevari

PhD of Electronics,
Uppsala University

- July 9, 1995
- Lägerhyddsvägen 1, 752 37 Uppsala, Sweden
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Research Interest –

- Microfluidics
- Microfabrication
- Two-phase flow
- Hydrodynamic cavitation
- Acoustic cavitation
- Lab-on-a-chip
- Cell-separation
- Drug delivery
- Tissue injury
- Organ-on-a-chip

Education

- 2020 – 2024** **PhD in Electrical Engineering**
Department of Electrical Engineering, Angstrom Laboratory, Uppsala University, Uppsala, Sweden
Project: Engineering Physics with Specialization in Electronics
- 2018 – 2020** **MSc. in Mechatronics Engineering**
Department of Engineering and Natural Science, Sabanci University, Istanbul, Turkey
GPA: 4/4
Project: Hydrodynamic and acoustic cavitation applications in cancer diagnosis and treatment, bacteria inactivation, and biosensor fabrication
- 2013 – 2018** **B.Sc. in Mechanical Engineering**
Department of Mechanical Engineering, Shahid Beheshti University, Tehran, Iran
GPA: 3.23/4
Project: Numerical Simulation and Analysis of Fluid Behavior in Microchannels

Projects

- 2018 – 2020** **Master's project** Sabanci University
Title: Hydrodynamic Cavitation on High Resistant Microfluidics Chips
- 2018 – 2020** **Side research project** Sabanci University
Title: Deagglomeration effects of hydrodynamic cavitation in a microchannel
- 2018 – 2020** **Side research project** Sabanci University
Title: Hydrodynamic cavitation bubble/cancer cell interaction study
- 2018 – 2020** **Side research project** Sabanci University
Title: Hydrodynamic cavitation bubble/bacteria interaction study
- 2018 – 2020** **Side research project** Sabanci University
Title: DaimonDNA biosensor fabrication - Isothermal amplification platform for naked-eye detection of genetically modified organisms in resource-limited settings
- 2018 – 2020** **Side research project** Sabanci University
Title: Hydrodynamic cavitation assisted surface cleaning
- 2018 – 2020** **Side research project** Sabanci University
Title: Lab-on-a-chip DNA amplification platform design and fabrication
- 2016 – 2017** **BSc. final project** Shahid Beheshti University
Title: Numerical simulation, optimization, and fabrication of microfluidic devices with focus on micromixers

Publications

Journal articles

- 2019** **Moein Talebian Gevari**, M. Ghorbani, A. J. Svagan, D. Grishenkov, A. Kosar, (2019). Electricity generation with micro scale hydrodynamic cavitation-thermoelectric generation coupling. [AIP Advances](#), 9(10), 105012.
- 2020** M. Ghorbani, A. S. Aghdam, **Moein Talebian Gevari**, A. Koşar, F. Ç. Cebeci, D. Grishenkov, A. J. Svagan, (2020). Facile hydrodynamic cavitation ON CHIP via cellulose nanofibers stabilized perfluorodroplets inside layer-by-layer assembled SLIPS surfaces. [Chemical Engineering Journal](#), 382, 122809.

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Computer skills

- Ansys-CFX fluent
- COMSOL Multiphysics
- Design of experiment (DoE), JMP and Minitab
- 2D and 3D CAD design in CATIA, AutoCAD and Solidworks
- MATLAB Simulink and mu-pad
- Mechanical mechanism simulation, working model
- LaTeX

Other skills

- 2D cell culturing
- Bacteria culturing
- Cytoplasm and nucleus staining
- Confocal microscopy
- Scanning electron microscopy (SEM)
- Fluorescent microscopy
- Raman Spectroscopy
- Atomic force microscopy

Languages

- English ● ● ● ● ●
TOEFL iBT 112 (Reading 26 - Listening 29 - Speaking 29 - Writing 28)
- Persian ● ● ● ● ●
Native speaker
- Turkish ● ● ● ● ●
Intermediate speaker

References

- Dr. Apurba Dev – PhD Advisor
- Apurba.Dev@angstrom.uu.se
- +46 18 471 1077
- Dr. Morteza Ghorbani – MSc. Advisor
- mortezag@kth.se
- +90 216 483 24 22

2019

Moein Talebian Gevari, A. H. Shafaghi, L. G. Villanueva, M. Ghorbani, A. Koşar, (2020). Engineered Lateral Roughness Element Implementation and Working Fluid Alteration to Intensify Hydrodynamic Cavitating Flows on a Chip. [Micromachines](#), 11(1), 49.

2020

M. Namazizadeh, **Moein Talebian Gevari**, M. Mojaddam, M. Vajdi, (2020). Optimization of the Splitter Blade Configuration and Geometry of a Pump Impeller using Design of Experiment. [Journal of Applied Fluid Mechanics](#), 13(1), 89-101.

2020

Moein Talebian Gevari, T. Abbasiasl, S. Niazi, M. Ghorbani, A. Kosar, (2020). Direct and indirect thermal applications of hydrodynamic and acoustic cavitation: A review. [Journal of Applied Thermal Engineering](#), 115065

2020

Moein Talebian Gevari, A. Parlar, M. Torabfam, A. Koşar, M. Yüce, M. Ghorbani, Influence of Fluid Properties on Intensity of Hydrodynamic Cavitation and Deactivation of *Salmonella thyphimurium*. [Processes](#), 8(3), 326."

2020

Moein Talebian Gevari, S. Niazi, M. Ghorbani, A. Kosar, The combined effect of nanoparticles and hydrodynamic cavitation in a microfluidic device, **Journal of Molecular Liquids**, (Submitted)

Selected conference articles

2019

Moein Talebian Gevari, et al. "The effect of hydrodynamic cavitation on cancer cell lines", , Magdeburg, Germany (2021) (Postponed)

2019

Moein Talebian Gevari, et al. "Thermoelectric-coupled hydrodynamic cavitation electricity generation system.", [International conference on nanofluid](#), Castello, Spain (2019): 480-484.

2019

Moein Talebian Gevari, et al. "Deagglomeration effects of hydrodynamic cavitation on nanofluids", [International conference on nanofluid](#), Castello, Spain (2019): 476-479.

2017

Moein Talebian Gevari, et al. "Passive Micromixer Parameter Effect Monitoring and Optimization, [7th International Conference on Nanotechnology – ICN2017](#), 2017, Tbilisi, Georgia"

Patent

2019

A. Kosar, I.C. Atalay, M. Ghorbani, **Moein Talebian Gevari**, Hydrodynamic cavitation bubble collapse electricity generation to generate electronic power to run a mini car, SUP172, (Submitted)

Microfabrication skills

Familiar and skilled at:

- Deposition methods (e-beam and thermal PVD, PECVD, Sputtering)
- Etching methods (Wet etching, (D)-RIE)
- Lithography methods (Photo-lithography, Electron beam lithography)
- PDMS molding (soft-lithography)
- Oxygen plasma bonding

TA and RA experience

Research Assistant

Dr. A. Kosar's Micro-Nano scale Heat Transfer and Microfluidics Research team, Sabanci University September 2018 until present

Teaching Assistant

Mechanics, Lecturer: Dr. Ali Kosar, Faculty of Engineering and Natural Science, Sabanci University, Fall 2018

Teaching Assistant

Dynamics, Lecturer: Dr. Bekir Bediz, Faculty of Engineering and Natural Science, Sabanci University, Spring 2019

Teaching Assistant

Foundation of microsystems, Lecturer: Dr. Ali Kosar, Faculty of Engineering and Natural Science, Sabanci University, Fall 2019