

# ZHANTAO CHEN

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## EDUCATION

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**MASSACHUSETTS INSTITUTE OF TECHNOLOGY, US** *Sep. 2018 - Present*

*Ph.D. Candidate*

*Department of Mechanical Engineering*

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY, US** *Sep. 2016 - Sep. 2018*

*S.M. in Mechanical Engineering, GPA 5.0/5.0*

*Department of Mechanical Engineering*

**Thesis (Advisor: Prof. Tal Cohen):** *From a thin membrane to an unbounded solid: dynamics and instabilities in radial motion of nonlinearly viscoelastic spheres.*

**HARBIN INSTITUTE OF TECHNOLOGY, CHINA** *Sep. 2012 - Jun. 2016*

*B.Eng. in Naval Architecture and Ocean Engineering, GPA 91/100*

*School of Naval Architecture and Ocean Engineering*

## RESEARCH EXPERIENCES

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**Effects of disorders in Graphene** *Prof. Jing Kong & Prof. Mingda Li, Sep. 2019 - Present*

Aiming to employ effective field theory to describe electron and phonon fields in low-dimensional materials with disorders, specifically graphene with vacancies and grain boundaries, which will improve understanding besides those obtained from numerical simulations. Theoretical results will be further compared to corresponding experimental measurements on CVD-grown graphene, with introduced defects of interest.

**Dynamics of cavity inside finite viscoelastic solid** *Prof. Tal Cohen, Jan. 2017 - Dec. 2018*

Researched dynamical responses of an empty cavity inside a visco-hyperelastic solid under sudden application of internal and external pressure difference:

- Analytically determined ranges of the applied loading for oscillations and indefinite expansions
- Considered viscoelastic material behaviors and analytically determined ranges of the applied loading for various long-time viscoelastic responses

## PUBLICATIONS

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Raayai-Ardakani, S., Chen, Z., Earl, D.R. and Cohen, T., 2019. Volume-controlled cavity expansion for probing of local elastic properties in soft materials. *Soft matter*.

## PRESENTATIONS

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Chen, Z., Cohen, T., 2018. Early onset of dynamic cavitation and nonlinear oscillation in finite elastic spheres. *EMI Conference*.

Chen, Z., Cohen, T., 2017. Volume controlled cavity expansion for probing viscoelastic properties. *54th SES Annual Technical Meeting*.

## TEACHING

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**Spring 2019** Teaching Assistant (2.002 Mechanics and Materials II, Prof. Ken Kamrin)

**Fall 2018** Teaching Assistant (2.060[J] Structural Dynamics, Prof. Tal Cohen)

**Fall 2017** Teaching Assistant (2.060[J] Structural Dynamics, Prof. Tal Cohen)