

# ZHEWEN YIN

## Looking for Materials/Mechanical Engineering Positions.

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Google Scholar

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Personal Website

## EXPERIENCE

### Postdoctoral Researcher & Graduate Research Assistant

#### NM3L Laboratory, University of South Florida

Aug 2018 – Ongoing

Tampa, FL

- Primary research areas include the manufacturing, engineering, and optic/electronic applications of two-dimensional materials.
- Collaborated with groups from the University of Toronto, University of Illinois, and Clemson University, completing projects including microplastics tracking in water systems, self-assembly of gold nanoparticles, etc.
- Three international/U.S. patents on the manufacturing methods of nanomaterials are published or under review.
- Mentored six undergraduate and graduate students, with the output of oral/poster presentations and publications.

### Chief Technology Consultant

#### Lingjing Haptics (Beijing) Technology Co., Ltd.

Sep 2021 – Aug 2022

Beijing

- Led a team in the development of haptic gloves based on liquid-crystalline elastomer; published four related patents.
- Assisted in obtaining financing of over 2,000,000 RMB.

## PROJECTS

### Scalable Nanomanufacturing of 2D Nanoribbons

Oct 2023 - Ongoing

- Pioneered a mechanical fracture method to achieve the scalable assembly of nanoribbons from diverse 2D materials with uniform width and spacing under ambient conditions (International Patent #WO2025015336A1). This technique provides a pathway for mass-producing next-generation nano-electronics.

### Strain engineering of two dimensional materials

Aug 2019 - Dec 2024

- Revealed directionally resolved strain-coupled phononic properties of monolayer MoTe<sub>2</sub> via in situ Raman spectroscopy, estimated the corresponding Grüneisen parameters.
- Implemented a self-assembly method to align Au nanoparticles of various sizes with templates designed from instability-driven, deformed 2D nanomaterials.
- Developed a mechanical fracture method for scalable assembly of nanoribbons with uniform width/spacing and Ångström-precision edges under ambient conditions.

### Haptic gloves based on liquid-crystalline elastomer

Sep 2021 - Aug 2022

- Optimized the synthesis of liquid-crystalline elastomer films and fibers, realizing a reversible deformation of 50% within 2s.
- Designed and built a driving mode to achieve fast heating and cooling of the LCE films under low voltage (~7V).

## EDUCATION

### Ph.D. in Mechanical Engineering

#### University of South Florida

Aug 2018 – May 2025

Tampa, FL

Advisor: Michael Cai Wang

### M.S. in Materials Science and Engineering

#### University of South Florida

Aug 2016 – Jun 2018

Tampa, FL

Advisor: Venkat R. Bhethanabotla

### B.S. in Nuclear Science and Technology

#### University of Science and Technology of China

Aug 2012 – Jun 2016

Hefei, China

## PUBLICATIONS

- Directionally-Resolved Phononic Properties of Monolayer 2D Molybdenum Ditelluride(MoTe<sub>2</sub>) under Uniaxial Elastic Strain  
Zhenwen Yin, Michael Cai Wang, et al.  
Nano Letters 2023
- Large Scale Self-assembly of Plasmonic Nanoparticles on Deformed Graphene Templates  
Matthew T. Gole\*, Zhenwen Yin\*, Michael Cai Wang\*, et al.  
Scientific Reports 2021
- Effects of Hydrodynamics on the Cross Sectional Distribution and Transport of Plastic in an Urban Coastal River  
Charlotte J. Haberstroh, Mauricio E. Arias, Zhenwen Yin, Michael Cai Wang.  
Water Environment Research 2020
- Engineering Surface and Morphology of La/WO<sub>3</sub> for Electrochemical Oxygen Reduction  
Swetha Ramani, Zhenwen Yin, Bradley Miller, Venkat R Bhethanabotla, John N Kuhn.  
CrystEngComm 2020

## SKILLS

### Tools:

SEM/TEM

E-beam litho

EDS

Photolitho

RIE

Raman

FTIR

UV-Vis

AFM

Profiler

XRD

MBE

CVD/PVD

Ion chromatography

Laser cutter

3D print

### Softwares:

MATLAB

Klayout

Chromeleon

ImageJ

KnowItAll

Gwyddion

ANSYS

MDI Jade

AutoCAD

SolidWorks

Origin