

JUNJIANG CHEN

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Research interests: Material and Chemical Sciences, Biomaterials, Functional Materials, Nanoparticles

EDUCATION

Syracuse University (SU)

Aug 2019-Present

- Ph.D. Candidate, Chemical Engineering
- Advisor: Dr. James (Jay) Henderson
- Cumulative GPA: /

Northeastern University (NEU)

Sep 2017-May 2019

- Master of Engineering, Chemical Engineering
- Advisor: Dr. Thomas J. Webster
- Cumulative GPA: 3.83 / 4.0

Harbin Institute of Technology (HIT)

Sep 2013-Jun 2017

- Bachelor of Engineering, Materials Physics
- Advisor: Dr. Fu Liu
- Cumulative GPA: 3.0 / 4.0

PUBLICATION

Diana Lomelí-Marroquín, David Medina Cruz, Alfonso Nieto-Argüello, Ada Vernet Crua, Alejandro Torres-Castro, **Junjiang Chen**, Thomas J. Webster, and Jorge L. Cholula-Díaz, *Starch-mediated synthesis of mono- and bimetallic silver/gold nanoparticles as antimicrobial and anticancer agents*, *International Journal of Nanomedicine*. DOI <https://doi.org/10.2147/IJN.S192757>

RESEARCHS

Synthesis of metal nanoparticles inside living human cells and their anticancer, antimicrobial and other applications

Research member, NEU, Advisor: Prof. Webster

Nov 2018-Present

- Aiming to provide a green way to synthesis nanoparticles (Au, Pt, Pd, AuPt, AuPd) inside human cells.
- Analyses their anticancer and antimicrobial activities.
- Find the mechanical of this synthesis method.

Research on the in vivo anticancer activity of Se Nanoparticles

Jun 2018-Sep 2018

Research assistant, National Engineering Research Center for Biomaterials, Sichuan University, Prof. Xiao Yang, Prof. Xingdong Zhang

- In charge of the preparation of nanoparticles (size<100nm) independently
- Learned and participated in the following animal testing to further evaluate their potential for cancer treatment

Synthesis and Characterization of Se and Te Nanoparticles for Anticancer Applications

Research assistant, NEU, Advisor: Prof. Webster

Oct 2017-Jun 2018

- Synthesized Se and Te nanoparticles and coated them with CTAB respectively
- Conducted Cytotoxicity assays on human dermal fibroblast (HDF) and FMMC cells (breast cancer stem cells) to examine Se and Te nanoparticles' in vitro anti-cancer properties.
- Analyzed data and suggested for the first time that these nanoparticles possess anti-cancer effects without being cytotoxic to healthy cells.

Study on the Graphene Oxide Based Biomimetic Mineralized Coating on Ni-Ti Alloy

Independent researcher, HIT, Associate Prof. Fu Liu

Oct 2016-Jun 2017

- Carried out the biomimetic mineralization of Ni-Ti alloy surface induced by GO and PDA respectively
- Obtained the HA film layer and adopted Laser Raman Spectroscopy, SEM, EDS, XRD, XPS to analyze its phase structure, morphology and composition, used electrochemical corrosion test to evaluate its corrosion resistance
- Improved the density and uniformity of Ni-Ti alloy successfully as a promising body implant material

Research on the Graphene Oxide Doped Epoxy Resin**Aug 2016-Sep 2016**

Research Assistant, Technical Institute of Physics and Chemistry, Chinese Academy of Science, Prof. Yong Huang

- Reviewed loads of scientific papers, proposed a novel experimental procedure of graphene oxide doped epoxy resin
- Observed the morphological structure of the composite through SEM, conducted phase analysis via XRD, improved its mechanical properties for broader application in multiple areas

Preparation of the Li-Al Doped PZT Film through Sol-Gel**Jan 2016-Aug 2016**

Research Member, National Key Laboratory for Precision Hot Forming of Metals, HIT, Prof. Weidong Fei

- Prepared PZT piezoelectric ceramics by doping different amounts of Li-Al ions through Sol-Gel
- Obtained satisfactory films with a thickness of 200nm for further analysis
- Examined the phase and microstructure, and investigated the dielectric, ferroelectric and piezoelectric properties of the ceramics before and after doping

Preparation and properties study of the Substrate Materials of Load Cell**Oct 2013-Jul 2014**

Research Member, HIT, Prof. You Wang

- Adopted glass fiber (GF), mica powder as booster to prepare the epoxy resin composite using the solvent-free method
- Developed the optimal proportion and curing process parameters of reinforced epoxy resin composite by Differential Scanning Calorimeter (DSC)
- Conducted further improvement of epoxy resin-based film by testing its thermal properties, creep properties and dynamic mechanical properties after wet heat aging through DMA and DSC
- Awarded the Second Prize in the HIT Annual Scientific Research Project on September 2014

SKILLS**Professional Skills:**

- **Proficient in** XRD, SEM, TF Analyzer, Impedance Analyzer, UMT-2MT Frictional Tester, MTT assay, MTS assay, Centrifuge, Ultrasonic Apparatus, Iyophilizer, Annealing Instrument, Muffle Furnace, Spin Coater, Cell Fixation, Cell Culture, Electronspun
- **Language skills:** Chinese (Native), English (Fluent)