AMELIA ZIYING FENG

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EDUCATION

- **University of California, Los Angeles (UCLA)** — **Los Angeles, CA**

Ph.D. candidate in Chemistry (Materials and Nanoscience track) GPA: 3.7/4.0 — *Jun 2015 - Sept 2019 (expected)*

M.S. in Chemistry GPA: 3.7/4.0 — *Sept 2014 - Jun 2015*

Awards: Graduate Division Fellowship, Research Assistantship, Teaching Assistantship

- **Sun Yat-Sen University (SYSU)** — **Guangzhou, China**

B.S. in Optical Informatics GPA: 3.9/4.0 — *Sept 2010 - Jun 2014*

Awards: National Scholarship (Top 5%)

RESEARCH

UCLA, Research Assistant (Advisor: Prof. Xiangfeng Duan)

- **Optical Properties of Layered Semiconductor** — 2015 - present
  - Fabricated the layered semiconductor material (MoS_2) with CVD
  - Patterned the plasmonic array with EBL and assembled it with MoS_2 and alkanethiol (self-assembled monolayer)
  - Investigated the photoluminescence of the structure with the goal of manipulating light in nanoscale
- **Protection Layer for the PEC Water Splitting** — 2014 - 2015
  - Synthesized the protection layer of the silicon photoanode for photoelectrochemical (PEC) water splitting by depositing nickel and ALD Al_2O_3, which effectively protected the electrode from corrosion in both alkali and acid

SYSU, Research Assistant

- **Electrochromic Device Based on Plasmonic Nanoparticles** (Advisor: Prof. Sheng Chu) — 2013 - 2014
  - Realized electrochromic device with small voltage down to 0.4 V by fabricating the device using reactive ion etching (RIE) and metal deposition, and packaged it within the metal ion solution by indium tin oxide (ITO)
  - Performed finite difference time domain (FDTD) simulation for the reflectance and transmittance of the structure
  - Published a first author paper on Advanced Optical Materials and became the frontispiece of the issue
- **Gas Sensor Based on Photonic Crystal Microcavity** — 2012 - 2013
  - Designed a stainless steel sealed container by CAD for the measurement, and improved the optical measure system
  - Achieved the sensitivity of 421 nm/RIU, best of the non-heterostructure photonic crystal gas sensor
- **Silicon Nanowires and the Solar Cell** — 2012 - 2013
  - Assembled the solar cell with transparent conductive polymer PEDOT:PSS, ITO and the silicon nanowire array fabricated by metal-assisted chemical etching (MACE)

SKILLS

- **Processing & Characterization:** Chemical Vapor Deposition (CVD), E-beam Evaporation, Thermal Evaporation, Electron Beam Lithography (EBL), Electrochemistry Deposition, Chemical Selective Etch, Raman/Photoluminescence Spectroscopy, UV-Vis Spectroscopy, Optical Microscope, SEM, XRD, EDX
- **Equipment Superuser:** CVD, EBL, Raman/Photoluminescence Spectroscopy (laser system)
- **Programming Language:** Python, R, Objective-C
- **Data Analysis & Coding Project:** FDTD simulations; Principal component analysis (PCA) with Python; Cleaning and plotting data with R; IOS application development with Objective-C (Github:https://github.com/ZiyingFeng/)
- **Language:** English (fluent), Chinese (native), Cantonese (native), French (elementary)

SERVICES

- **CNSI Nanoscience Outreach Program** 2017 - present
  - Performed nanoscience demo to high school students, arousing their interest about science
  - Taught basic nanoscience concepts and experiment for the high school teachers, helping them spread the nanoscience knowledge among the high school students
- **Invited Manuscript Reviewer** 2016 - present
  - Reviewed manuscript for Material Science in Semiconductor Processing, Optics Letters, Optical Materials Express, AIP Advances, Nano & Micro Letters, Progress in Electromagnetic Research, etc.
- **Teaching Assistant, UCLA** 2014 - present
  - Taught fundamental chemistry concepts and lab techniques for groups of 20 students through interactive instruction in weekly labs, written assignments and discussion in office hours

COURSES

Optical Informatics: Optics, CAD engineering cartography, Optical Information Storage, Signal and System
Material Chemistry: Solid State Chemistry, Quantum Chemistry, Nanoscience and Chemistry
Python: Programming for Everybody (Getting Started with Python), Python Data Structures R Programming
R: The Data Scientist's Toolbox, Getting and Cleaning Data, Exploratory Data Analysis
Objective-C: Foundations of Objective-C App Development, Networking and Security in iOS Applications
Responsive Web Design: Responsive Website Basics Code with HTML, CSS, and JavaScript

AFFILIATION

OSA/SPIE Student Chapter: Arranged outreaches and workshops for the students to show them knowledge about optics

PUBLICATIONS

- **Feng Z.**, Jiang C., He Y., Chu S., Chu G., Peng R., Li D., "Widely Adjustable and Quasi-Reversible Electrochromic Device Based on Core-Shell Au-Ag Plasmonic Nanoparticles", ***Advanced Optical Mateials***, 2014
- Li K., Li J., Song Y., Fang G., Li C., **Feng Z.**, Su R., Zeng B., Wang X., Jin C., "Ln Slot Photonic Crystal Microcavity for Refractive Index Gas Sensing", ***IEEE Photonics Journal***, 2014
- **Feng Z.**, Jiang C., Zeng Y., Jin Y., Li Z., Xu S., Shen H., "Light-Trapping Structure and Raman Spectra of SINWs Prepared by MACE", ***Acta Energiae Solaris Sinica***, 2015
- Yao B., Huang S., Wu Y., Feng Z., Choi C., Liu H., Qi H., Peng G., Duan X., Rao Y., Wong C., "A graphene-enhanced Q-switched distributed feedback fiber laser", ***Lasers and Electro-Optics (CLEO) conference***, 2016
- Yao B., Rao Y., Huang S., Wu Y., **Feng Z.**, Choi C., Liu H., Qi H., Duan X., Peng G., Wong C., "Graphene Q-switched distributed feedback fiber lasers with narrow linewidth approaching the transform limit", ***Optics Express***, 2017
- Fan Z., Xiao H., Wang Y., Zhao Z., Lin Z., Cheng H., Lee S., Wang G., **Feng Z.**, Goddard W., Huang Y., Duan X., "Layer-by-Layer Degradation of Methylammonium Lead Tri-iodide Perovskite Microplates", ***Joule: Cell press***, 2017