

# STATEMENT OF PURPOSE

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My decision to be a graduate student at UCLA is motivated by my passion for research in electrical engineering and my current working experience here at UCLA. Living in this Bruin community, I witness the rapid research advancement from my UCLA friends and colleagues, thus I desire to integrate my knowledge and experience to make my contribution by working with the excellent research faculties on campus.

Before I came to UCLA, I was a graduate student doing research at Columbia University in the City of New York. With GPA 4.0 in Electrical Engineering Department, I joined Prof. Richard Osgood's group and investigated on Möbius Strip, a 3D chiral object, by conducting theoretical analysis of Möbius Strip structure and explored the correlation between Möbius strip's chirality and the coupling of electric and magnetic field. Under supervision of Prof. Richard and his postdocs, I started a new journey by actively participating in the Project Nonlocal Response on Plasmonic Excitations, where I developed an FDFD algorithm considering spatial dispersion of silver particles, As a result, we presented a conference paper Numerical Computation of Surface Plasmon Polariton Propagation and Dispersion in the Presence of Nonlocality in FiO/LS 2017.

In addition to working with professors, I seized several opportunities to attend global conferences in Optics and Photonics by myself, which not only granted me the chance to share my works that had been done, but also introduced me to leading researchers and their recent work in related fields. In FiO/LS 2016, I was one of the presenters in the poster session, where I introduced a transmission line model to further explore the ultimate limit of quality factor for MIM optical filter design. By comparing the simulation results with numerical methods, I testified the validity of this model to calculate the ultimate limit. Later on I published a conference paper Adjusting spectrum of MIM optical filters by stub inclination based on the conference presentation. During this process I gradually learned to think critically and work independently as a mature researcher by designing my own experiment, carrying it out, and presenting and publishing the results.

I especially feel comfortable integrating interdisciplinary resources to initiate technology advancement. For example, in 2014 I worked in clean room to fabricate field effect transistors for label-free sensing in microfluidics when I was working at University of British Columbia. In 2016, I designed RFID device to study the social behavior of mouse at Columbia University.

I came to Los Angeles to start my career as a technical supporting staff at UCLA in September, 2017, for a NSF funded project. Every morning I enter the Boelter Hall through the Math Science Building to my office, I convince myself that I could further maximize my potential in this intellectually stimulating environment. I believe my academic training and research skills built in various projects make me a competitive candidate to the PhD program at Electrical Engineering Department, UCLA.