It has been nearly two years since I came to the United States. At UNC Charlotte, I have been impressed by the first-rate faculty and state-of-the-art facility, both of which support my effort to be a successful precision engineer. Measurement and quality are my top priorities in my graduate education. My exposure to the science and art of precision engineering, such as industrial metrology, has helped me to realize that it is such a significant field to the success of society and the prosperity of modern manufacturing industries.

Quality control should start from the design phase, and follow through to the delivery process. Courses like machine tool metrology, surface metrology and coordinate metrology have constructed my perception of the precision field. Under Dr. Robert Hocken’s advice, I am working on the design and development of a dimensional metrology system for the plasmonic nanolithography machine at the Center for Precision Metrology. Specifically, I have built a model for the parasitic motion geometric errors, together with a specific measuring system. To make the best equipment, such as plane mirror interferometer, capacitance gages, I designed various sensor holders and mounts, machined an aluminum straightedge using diamond turning, and came up with an implementation configuration of reversal technique.

My understanding over the past year is that all the cutting-edge precision machines should be calibrated and compensated whatever their function, because errors could jump at any given time or place. So generally speaking, my job is to target, categorize, measure and correct any possible systematic errors with the philosophy of determinism in mind.

My five-year-plan is to pursue a PhD degree in this rapidly growing field, which will support my future endeavors as a metrologist or a precision engineer. This scholarship will assist me to further my advanced education experience and I extend my sincere appreciation.