Georgia Institute of Technology graduate student Xian Qin in October became the latest recipient of the much-sought after Charles Hutchins Educational Grant. The Ph.D. candidate's project, “Highly Reliable Low CTE Interposer to Printed Wiring Board SMT Interconnections” beat out several other applicants for the $5,000 grant.

Qin, who is scheduled to receive her Ph.D. in 2015, has a bachelor’s in engineering from Beijing’s Tsinghua University. She spoke in to CIRCUITS ASSEMBLY senior editor Chelsey Drysdale this week about her research, professional plans, and her time in Atlanta.

CD: What will your Ph.D. be in when you finish school?

XQ: My Ph.D. will be in material science and engineering.

CD:What research are you currently working on?

XQ: I am working on highly reliable interconnections from low CTE (coefficient of thermal expansion) interposers to organic printed wiring boards. Low CTE interposers, such as silicon and glass, are being explored widely as next-generation substrates to address the issues with organic substrates, including low-dimensional stability, which limits the I/O density and system miniaturization. However, low CTE interposers pose reliability challenges on the reliability of interconnections, due to the large CTE mismatch. I am trying to achieve reliable interconnections to address the CTE mismatch challenge, while maintaining SMT compatibility and manufacturability, by applying stress-relief buffer materials and compliant metal springs.

CD: Where do you envision yourself working after you finish grad school? Are you planning to go into academia or take your skills and knowledge into the industry to work for a company outside of the university system?

XQ: During my Ph.D. with the Packaging Research Center at Georgia Tech, I am already exposed to a lot of “real world” problems, which are highly interesting to the industry, and we have a lot of cooperation with the companies in our consortium. I plan to join industry after I graduate, to better my knowledge of the business side of my research, and see my work in the devices that people use in daily life.

CD: What was your reaction to winning the grant?
XQ: Super excited.

CD: What are your areas of interest in general?
XQ: Electronic packaging, interconnection reliability, thermo-mechanical design, semiconductor fabrication and failure analysis.

CD: Do you like living in Georgia? Do you plan to stay in the US after school or head back home to China?
XQ: Yes, everything was new and different when I first came. I am very lucky that I met a lot of new friends here who helped me a lot on both my research and my daily life. I like living in Georgia, especially Atlanta. I feel that people here are very friendly and open-minded, and I really enjoy the warm weather in the south. My current plan is to work here for a couple of years after graduation, and then I will think about going back to China as a long-term plan.

Ed: The Charles Hutchins Grant is co-sponsored by the SMTA and CIRCUITS ASSEMBLY.