

## Acceptance of the Mineralogical Society of America Award for 2020

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Thank you so much, Dave, for those kind words. Thank you, Mr. President and the MSA award committee, for choosing me as the recipient of the MSA award 2020! It is a great honor and pleasure for me. Reading through the citations and acceptance letters of the previous MSA awardees, I feel humbled because many of them are pioneers in the field of high-pressure mineral physics and my role models. It is an awe-inspiring group, and I hope hard work and dedication will bring me a little bit closer to what previous recipients have accomplished. I want to take this opportunity to thank my academic advisors and friends who have helped pave the way toward a meaningful and engaging science career.

Whenever I think of happy times in my childhood, I remember my pocketful of sandstones. I once planted rocks in my backyard in the hope of growing more rocks—this was not an easy hobby for a kid in my hometown, the Yancheng coastal plain in China, not far from Shanghai. Yancheng literally means “Salt City,” named after the sea salt harvest fields around 2100 years ago. In September 2002, when I went on a road trip to college, it was the first time I saw rocky hills and mountains in person, instead of on TV. Studying geology at the China University of Geosciences (Wuhan) was a truly amazing experience, where the campus was decorated with dinosaur fossils and petrified woods.

After college, I spent 14 months exploring the porphyry deposits on the Tibetan Plateau in western China, together with two senior geologists, Henry Tebar and Eugenio Castro Medrano. I learned a lot from them about fieldwork while enjoying that colorful world of minerals with attractive crystal shapes at elevations of 5000–6000 meters. During my subsequent Master’s degree program in geochemistry at Peking University, I established a connection with the high-pressure world in 2007. Qiang Sun was my advisor, and he continues to be kind and supportive to me year after year.

Studying for my Ph.D. at the University of Texas in Austin played a pivotal role in my life. I was very lucky to have Jung-Fu “Afu” Lin as my Ph.D. advisor. As his first Ph.D. student, I was sufficiently and strictly trained in the use of in-house equipment and synchrotron radiation facilities. Afu taught me everything in the lab and about science with great passion. With the help of his hands-on instructions, I finally conquered my biggest fear of loading very tiny small samples into diamond anvil cells, and so far, my record is 300 GPa. Most importantly, he always supported my experiments. From 2010 to 2015, I traveled to Argonne National Laboratory around 45 times and broke more than 40 pairs of anvils during my Ph.D. study! He is a walking dictionary and works around the clock. From time to time, I would send him an e-mail with some inquiry at midnight, and he would reply shortly before 2 or 3 a.m. I’m ever grateful for his insightful and timely feedback.

After my Ph.D. thesis, I had the opportunity to work with Wendy Mao at Stanford University to conduct postdoctoral research projects. Wendy was incredibly supportive of my research ideas and job searching. I learned a lot from Wendy, not only in terms



of scientific knowledge and technical skills but also in scientific theory and perspectives. My postdoctoral experience was successful and enjoyable due to her extensive and dedicated teaching. I’m deeply grateful for Wendy’s kind support in enhancing my academic career and professional development. The insights and views I learned from her benefit me in every area of my life. Remarkably, Wendy treats each student and postdoc like family, and all her group members develop long and happy relationships with her. There were outstanding graduate students, postdocs, and research scientists in the group. I would like to thank them all, particularly Arianna Gleason, Yu Lin, Qingyang Hu, and Sulgiye Park, for the beneficial discussion and Christmas gift exchange.

After three years at Stanford, I moved to Beijing and joined “HPSTAR,” the Centre for High Pressure Science and Technology Research, as a staff scientist. Huge thanks to my colleagues for their invaluable advice while I set up my new lab there. By virtue of Dave’s vision and support, our institute embraces an environment of “freedom, collaboration, and excellence,” which has expanded my research horizons. Dave was the recipient of the MSA award himself four decades ago, which makes winning it this year even more special for me.

My research depends on the experimental support, collaboration, and academic advice of many people. In the last decade, our synchrotron experiments would have gone nowhere without the dedication and efforts of so many beamline scientists. Too many to name, but they know who they are. Day-to-day, I’m grateful for all my students, postdocs, and visitors to my lab. Setting up a new lab and establishing new research directions in such a short time would have been impossible without outstanding contributions from Chaojia Lv, Chaoshuai Zhao, and many others.

Finally, I want to thank the most significant rock in my life, my wife Hailing Gu. As Afu said after my Ph.D. defense in April 2015, “Hailing shall share half your degree.” We were high school classmates before Hailing obtained her Master’s degree in economic management from the Belarusian National Technical University and joined me in Austin in 2011. I would not have been so productive without her company in the lab. At that time, she stayed up to 2 or 3 a.m. with me at the beamlines, watching more movies and TV dramas than she had ever seen!

Let me finish up by saying this is truly an honor, and thank you all again.

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