



Press release
November 2025

Chaoying Gu awarded the SPIE-BACUS Scholarship

BELLINGHAM, Washington, USA — **Chaoying Gu** has been awarded the 2025 SPIE-BACUS Scholarship by SPIE, the international society for optics and photonics, and the BACUS Steering Committee for potential contributions to the field of microlithography with a focus on optical tooling, semiconductor manufacturing or related areas.



Gu is a PhD student in Electrical Engineering and Computer Sciences at the University of California, Berkeley, advised by Professor Laura Waller in the Computational Imaging Lab. In her research, she collaborates with Lawrence Berkeley National Laboratory to develop Fourier ptychographic methods for EUV mask imaging and high-NA lithography emulation. “By computationally reconstructing the complex-valued optical field, our framework can quantitatively recover mask phase information and modeling through-focus behavior under various illumination patterns.” said Gu. “These computational imaging approaches, combined with physics-based modeling, can help improve photomask design for next-generation holistic lithography. I am very grateful to SPIE and the BACUS Steering Committee for recognizing young researchers and supporting closer collaboration between academia and industry.”

Since this program began in 1978, SPIE has distributed more than \$7.5 million dollars in individual scholarships. This ambitious effort reflects the Society's commitment to education as well as to the future generations of optical scientists and engineers around the world.

To view other 2025 scholarship press releases as they become available, please visit the [2025 Scholarship Recipients page](#) or learn more about [SPIE scholarships](#) on spie.org.

SPIE, the international society for optics and photonics, brings engineers, scientists, students, and business professionals together to advance light-based science and technology. The Society, founded in 1955, connects and engages with our global constituency through industry-leading conferences and exhibitions; publications of conference proceedings, books, and journals in the SPIE Digital Library; and career-building opportunities. Over the past five years, we have invested more than \$25 million in the international optics community through our advocacy and support, including scholarships, educational resources, travel grants, endowed gifts, and public-policy development. www.spie.org.

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