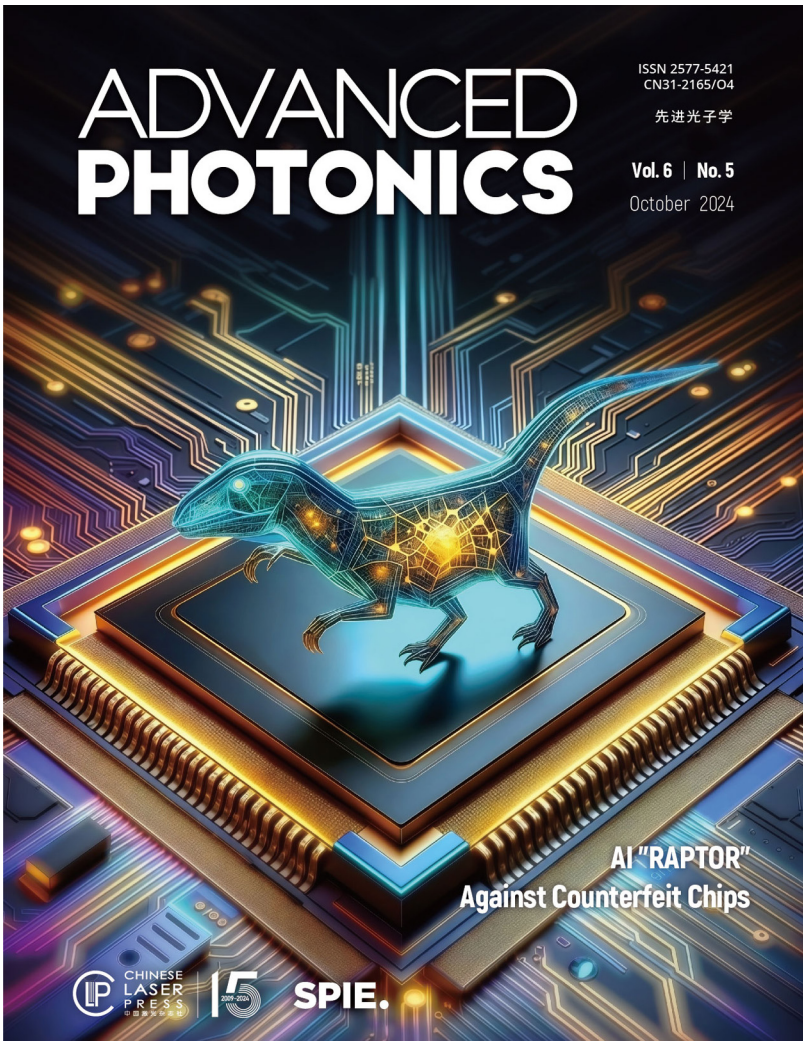

About the cover: *Advanced Photonics* Volume 6, Issue 5

The semiconductor industry faces dual challenges: a severe chip shortage and a rise in counterfeit chips, posing risks of malfunction and surveillance. In response, scholarly interest has focused on detecting counterfeits using physical unclonable functions (PUFs), which are promising but face scalability issues and difficulty distinguishing tampering from natural degradation. Recently, researchers invented an optical counterfeit detection method that leverages deep learning to identify adversarial tampering in chips: residual attention-based processing of tampered optical responses (RAPTOR). RAPTOR is capable of identifying adversarial tampering to optical PUFs based on randomly patterned arrays of gold nanoparticles. Offering robustness against various adversarial attacks, RAPTOR demonstrates great potential for AI in the semiconductor industry.

The cover of *Advanced Photonics* Volume 6 Issue 5 features an artistic illustration of RAPTOR, based on the research presented in the article by Blake Wilson, Yuheng Chen, Daksh Kumar Singh, Rohan Ojha, Jaxon Pottle, Michael Bezick, Alexandra Boltasseva, Vladimir M. Shalaev, and Alexander V. Kildishev, "Authentication through residual attention-based processing of tampered optical responses," *Adv. Photon.* 6(5), 056002 (2024), doi: 10.1117/1.AP.6.5.056002.