

Ultrafast-Lasers-Enabled Fabrication of Photonics and Optics



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Abstract:

The research on ultrafast-laser-based photonics fabrication and integration is highly interdisciplinary, intersecting applied physics, photonics, lasers, materials, precision controls, and imaging. The talk presents computational models, systems and physical processes on using ultrafast lasers to fabricate optical, photonic, and laser components, such as laser writing of waveguides in crystal materials, laser polishing and laser micro-welding.

Jie Qiao Short Biography:

Jie Qiao is currently an Associate Professor in the Carlson Center for Imaging Science at Rochester Institute of Technology. She leads the Advanced Optical Fabrication, Instrumentation & Metrology Laboratory where her team of graduate students and postdocs work on ultrafast-lasers-enabled advanced photonics/optics / waveguide laser fabrication, wavefront sensing, and spatial-temporal control of laser beams. Dr. Qiao has authored over 100 journal and conference publications. She has provided over 20 invited talks at international conferences on the topics of femtosecond laser-based optical fabrication. Dr. Qiao was an associate editor for Optics Express from 2018 to 2021, and the Program Chair for the 2022 and 2023 Conference on Lasers and Electro-Optics, Applications and Technology Program. Prior to joining RIT, she was a laser system scientist at the Department -of-Energy-funded Laboratory for Laser Energetics, the University of Rochester from 2005 to 2013. She led the demonstration of the world's first 1.5-meter coherently-phased-grating pulse compressor for petawatt lasers. Dr. Qiao received her Ph.D. and M.S. in Electrical and Computer Engineering from the University of Texas at Austin. She has an M.B.A in entrepreneurship, strategy, finance, and marketing from the Simon Graduate School of Business, University of Rochester.