Ursula Keller: Winner of the 2020 SPIE Gold Medal

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For nearly three decades, the research of Ursula Keller, a professor of physics at ETH Zurich, has defined the revolution in ultrafast science and technology. She pioneered the semiconductor saturable absorber mirror (SESAM), which quickly became ubiquitous in useful ultrashort pulse laser systems. From 1993 onwards, with the research group that she built at ETH Zurich, she has led international state-of-the-art developments in ultrafast science through a comprehensive program of research, ranging from the technological development of SESAMs to shape and withstand millijoule femtosecond laser pulses, to fundamental science with the demonstration of the attoclock.

Keller's contributions to the broader optics and photonics community have had just as powerful an impact in terms of outreach and mentorship. For SPIE in particular, she has served on program committees, as conference and session chair, and has presented over 50 papers at SPIE conferences since 1991. She was also instrumental in establishing the SPIE ETH Zurich Student Chapter in 2012 — the first SPIE chapter in Switzerland — and serves as its current Chapter Advisor. She has been an SPIE Fellow since 2014. She has worked tirelessly as a mentor for young researchers and is an inspiring role model for women in the field of optics and photonics engineering. She was the first woman to obtain a position as a professor of physics at ETH Zurich, and generously devotes her time and commitment to many programs devoted to gender issues in science and engineering.

"Ursula Keller's incisive, creative, and imaginative approach to her work has led to exceptional metrics: she is one of the most highly cited authors in photonics, notes University of Southampton Research Fellow and professor of physics Anne Tropper. "But Ursi's track record is extraordinary by any measure: she is recognized not only for her passion for pure science, but also for her commitement to successfully address the challenges of transferring her science into transformative technology. She stands out in her non-technical work as well: her longtime support for early-career researchers and the warmth and skill with which she has built much-valued networks for female scientists complete the picture of a major figure of this era of optics."

Labels: SPIE Gold Medal, optics, photonics, Ursula Keller

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