

IQSE AMO QO Seminar Series

Tuesday, September 5th 2023, 11:00 am ZOOM
& IQSE seminar room (MPHY 578)

Pizza will be served for IQSE members at 12:00 noon. The talk will start around 11:00 am

Dr. J. Gary Eden

(University of Illinois)

Krypton Fluoride (248 nm) as the Laser Driver for Inertial Fusion Energy (IFE)

ABOUT THE SPEAKER: J. Gary Eden has served as a member of the faculty of the University of Illinois (Urbana) for 43 years. After receiving the Ph.D. degree in Electrical Engineering in 1976, he conducted research in the Optical Sciences Division of the U.S. Naval Research Laboratory (Washington, DC) from 1976 to 1979. While at NRL, he co-discovered several lasers, including the KrCl (222 nm) laser and the first proton beam-pumped lasers (Ar-N₂, XeF). Since joining the faculty of the University of Illinois in 1979, he and his students have pursued the discovery of lasers and high-power lamps and their applications, atomic, molecular and ultrafast laser spectroscopy, optical physics in atoms and small molecules, and the science, technology, and commercialization of microcavity plasma devices. He is currently the Intel Alumni Endowed Chair Emeritus in the Department of Electrical and Computer Engineering (ECE) at UIUC, and is a co-Founder of Eden Park Illumination, EP Purification, Cygnus Photonics, EPL Power Electronics, and the Eden Park Foundation. Sixty-three individuals have received the Ph.D. degree under his direction, and his current research focuses on laser fusion energy (LFE), ultrafast optical physics such as the control of atomic coherences, a new generation of optical amplifiers, VUV photochemistry in the solid state, plasma photonic crystals, and the disinfection of drinking water in the developing world. He was elected to the National Academy of Engineering in 2014.

EVENT DETAILS: The recent report of scientific breakeven at the National Ignition Facility (NIF, Livermore, CA) demonstrates the viability of Laser Fusion Energy (LFE) for commercial power production. This long-awaited breakthrough has prompted a re-evaluation of the optimal laser driver for LFE and associated target design. This presentation will review the unique characteristics of the krypton-fluoride excimer laser (KrF, 248 nm) and its advantages as the driver for commercial power generation.

ZOOM information:

<https://tamu.zoom.us/j/98156251523?pwd=QVdSdGxtL1UyY0g1L083SU5QR0QrUT09>

Meeting ID: 981 5625 1523

Passcode: 297578

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