Under the auspices of the International Commission for Optics and 2024 International Optics Conference (ICO-26), in partnership with the FPP, Department of Higher Education and Training, University Capacity Development Programme, ASSAf, NITheCS and Stellenbosch University, you are invited to attend

A NOBEL LECTURE

Generating high-intensity ultrashort optical pulses

by

2018 Nobel Laureate Prof. Donna Strickland (University of Waterloo, Canada)

--- Followed by an inspirational fireside chat unpacking the life of a Nobel Laureate ---

22 October 2024 | 17:00 for 17:30-19:30 SAST

Venues: Endler Hall, Stellenbosch University, and online

ABSTRACT

With the invention of lasers, the intensity of a light wave was increased by orders of magnitude over what had been achieved with a light bulb or sunlight. This much higher intensity light led to new phenomena being observed, such as violet light coming out when red light went into the material. After Gérard Mourou and I developed chirped pulse amplification, also known as CPA, the intensity again increased my more than a factor of 1,000 and it once again made new types of interactions possible between light and matter. We developed a laser that could deliver short pulses of light that knocked the electrons off their atoms. This new understanding of laser-matter interactions, led to the development of new machining techniques that are used in laser eye surgery or micromachining of glass used in cell phones.

ABOUT PROF. STRICKLAND

Donna Strickland is a professor in the Department of Physics and Astronomy at the University of Waterloo who received a Nobel Prize in Physics in 2018 for developing chirped pulse amplification with Gérard Mourou, her PhD supervisor at the time. They published this Nobel-winning research in 1985 when Strickland was a PhD student at the University of Rochester in New York State. Together they paved the way toward the most intense laser pulsers ever created.

Strickland was a research associate at the National Research Council Canada, a physicist at Lawrence Livermore National Laboratory and a member of technical staff at Princeton University. In 1997, she joined the University of Waterloo, where her ultrafast laser group develops high-intensity laser systems for nonlinear optics investigations.

Strickland was named a Companion of the Order of Canada. She is a recipient of a Sloan Research Fellowship, a Premier's Research Excellence Award and a Cottrell Scholar Award. She served as the president of the Optical Society (OSA) in 2013. She is a fellow of OSA and SPIE, the Royal Society of Canada and the Royal Society. She is an honorary fellow of the Canadian Academy of Engineering as well as the Institute of Physics. She is an international member of the US National Academy of Science. Strickland earned a PhD in optics from the University of Rochester and the B.Eng. from McMaster University.

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