

Toward Affordable Preventive Healthcare: How Basic Science Addresses Grand Challenges



Professor Ferenc KRAUSZ Nobel Laureate in Physics 2023

- ▶ Chair Professor, Department of Physics,
The University of Hong Kong
- ▶ Professor of Experimental Physics,
Ludwig-Maximilians-Universität München, Germany
- ▶ Director of the Attosecond Physics Division,
Max Planck Institute of Quantum Optics, Germany
- ▶ Scientific Director & CEO,
Center for Molecular Fingerprinting, Hungary

Date:

7 Nov 2025 (Fri)

Time:

6:15pm

|

7:30pm (HKT)

Venue:

**Grand Hall,
Lee Shau Kee Lecture Centre,
Centennial Campus, HKU**

Registration

Registration is required.
Please scan the QR code or visit
<https://www.scifac.hku.hk/events/krausz-inaugural-lecture-2025> for
lecture details and registration.

Abstract

Basic research rarely helps practitioners directly with their everyday concerns; nevertheless, it stimulates new ways of thinking that have the potential to revolutionise and dramatically improve how practitioners deal with a problem in the future. This lecture aims at providing an example.

At the dawn of the new millennium, attosecond metrology enabled us to capture sub-atomic motions for the first time. A couple of decades later, the new technology paves the way towards precision preventive medicine.

When triggered and captured in the molecules of human blood, these motions can reveal changes in its molecular composition and provide early signs of unfolding health aberrations.

Cost-effective monitoring of human health will address several grand challenges of our time.

Biography

Ferenc Krausz graduated in electrical engineering from the Budapest University of Technology and completed his studies in theoretical physics at the Eötvös Loránd University in 1985. He earned his doctorate in laser physics from the Technische Universität Wien (1991), where he became a professor in 1998. In 2003-2004, he was appointed director at the Max-Planck-Institute of Quantum Optics in Garching and chair of experimental physics – laser physics at the Ludwig-Maximilians-Universität and established 'Attoworld' at these two sites (attoworld.de).

In a series of experiments conducted between 2001 and 2004, his team successfully produced and measured isolated attosecond pulses of light, applying them to observe sub-atomic motions. Attoworld has been fostering the proliferation of the emerging field, attosecond science, and – since 2015 – exploring its applications for probing human health. For his contributions to establishing the field of Attosecond Science, Ferenc Krausz has been awarded, among others, the King-Faisal International Prize for Science (2013), the Wolf Prize in Physics (2022), the BBVA Frontiers of Knowledge Award (2023) and the 2023 Nobel Prize in Physics.