Keynote Speech 1

Time: Thursday, 28 October 2021 14:00-14:50 (Tehran)

Title: Ultrathin optical fibers and their applications

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Abstract: We make an optical fiber ultrathin by heating and pulling it in a controlled way until the fiber's diameter becomes comparable with the working wavelength of light. Due to the high refractive index contrast between the fiber material and the surrounding medium, guiding of light through the ultrathin region is accompanied by a strong evanescent field near the fiber surface. This field is useful for a broad spectrum of physical experiments and applications. In this talk, I will present our work with ultrathin optical fibers, focusing on optical manipulation of small particles.

G. Tkachenko is from Kharkiv, Ukraine, obtained his PhD at the University of Bordeaux, France, did a post-doc in the group of Prof. Kishan Dholakia at the University of St Andrews, UK. In 2017 he moved to Japan and joined the Light-Matter Interactions for Quantum Technologies Unit lead by Prof. Sile Nic Chormaic at Okinawa Institute of Science and Technology Graduate University.