



UNIVERSITÀ
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Photonic arms, legs, and skin: *walking up a human hair*

Monday 26 March, 3:00pm

Sala Wataghin, Istituto di Fisica, via P. Giuria 1, Torino

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Abstract

In this talk I will discuss photonic structures that can move and deform. That is, I will talk about the combination of photonic micro and nano structures on one side, and movement and physical reshaping induced by light. This is possible thanks to the development of complex photonic structures based on micro patterned polymers that are light sensitive.

We will see how such structures can be applied to create photonic elements that can be tuned by reshaping and see that one can create microscopic legs, arms, and even an entire microscopic robot that uses environmental light as sole energy source.

The speaker



Diederik S. Wiersma is Full Professor at the Physics and Astronomy Department of the University of Florence. His research interests lie in the fundamental optical properties of micro- and nano-photonic materials, in particular with periodic, random, or quasi-crystalline structure. He has delivered more than 100 invited lectures and colloquia and authored many papers on this topic, amongst which more than 20 in Nature and Science. He was cofounder of the Nanophotonics Europe association (2008), Director of the European Laboratory for Non-linear Spectroscopy (LENS) in Florence (2010-2013), Deputy coordinator of the European network of excellence on nanophotonics (2005-2010) Advanced grant of the European Research Council (ERC), Nano photonic Micro Robotics (2012-2017).

He is the Italian representative in the scientific panel of physics, chemistry, and mathematics of Science Europe, Chair of the ERC evaluation panel of consolidator grants (panel PE2 2015-2020), Panel member evaluation of Marie Skłodowska-Curie Innovative Training Networks (2016-2021), head of the Micro and nano photonics European Laboratory for Non-linear Spectroscopy (LENS) and President of the National Institute of Metrological Research (INRiM).