



UNIVERSITA' DEGLI STUDI DI PAVIA

DOTTORATO DI RICERCA IN FISICA

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Aula 102 "L. Giulotto", ore 16.00

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Femtosecond-laser micromachining of transparent materials: an enabling tool for physics on a chip

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Abstract: Miniaturization is an important goal in many fields of physics. Not only it improves the stability of the set-up, but it also increases the portability, robustness and scalability. Among the many microfabrication technologies, I will focus my talk on femtosecond laser micromachining. This technique has many unique properties: it is a direct writing technique with rapid prototyping capabilities; it can be applied to many different transparent materials; it can produce three-dimensional structures. This technique can be used to realize many important components, from photonic to microfluidic ones, as well as arbitrary combinations of them. It is therefore highly suited for the production of complex devices with an unprecedented freedom in the layout design. In my presentation, I will demonstrate how this technique can be exploited to produce state-of-the-art devices in such different fields as integrated quantum photonics and optofluidics.