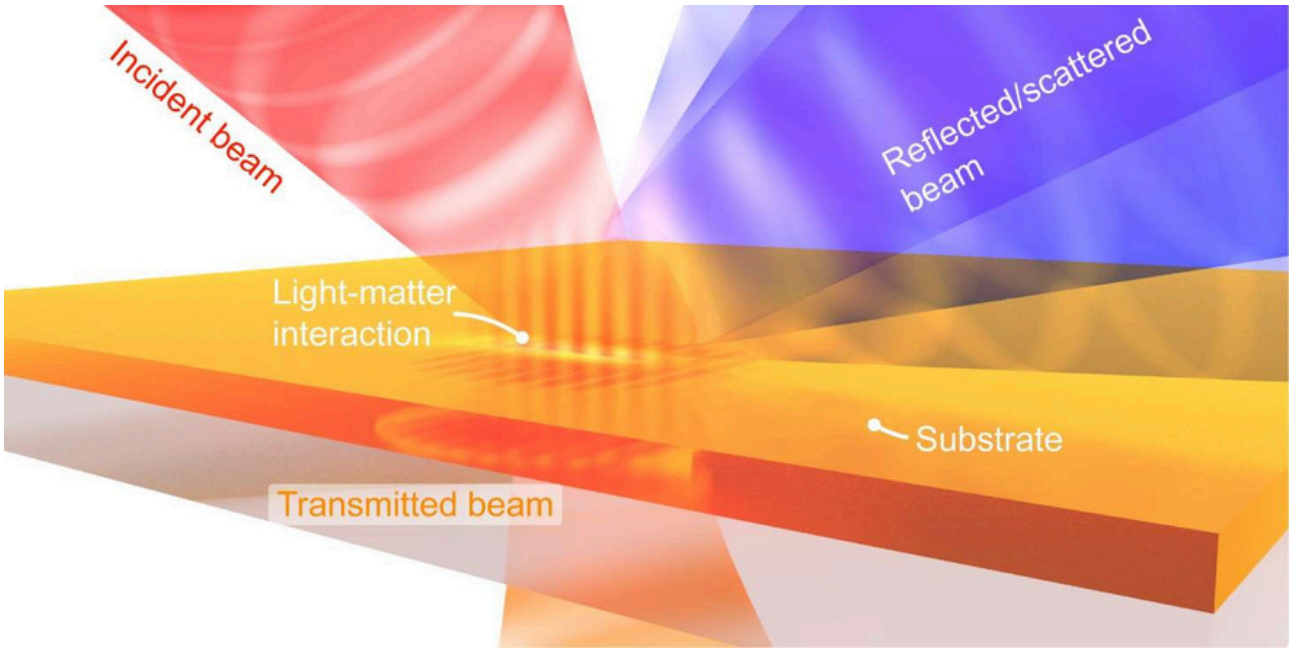

PHD CORNER

TUNABLE NANOPHOTONIC DEVICES FOR ALL-OPTICAL LIGHT MANIPULATION: FROM NONVOLATILE TO ULTRAFAST OPERATION

Nanophotonics is a branch of physics that studies the manipulation and generation of light at the nanoscale. Over the last decades, with the development of advanced nanofabrication techniques, many fascinating discoveries have been made that were previously unachievable with classical optics. The current interest in this field is to implement tunable and multipurpose devices capable of adjusting their response on demand with optical irradiation, or all-optical devices. To achieve such functionality, various methods have been suggested, one of which involves the functionalization of photonic devices with a distinct class of materials – chalcogenide optical phase change materials (oPCMs) – that can store their state after switching. More recently, a novel concept has been explored: the implementation of temporal photonic structures formed in a bare, non-patterned substrate by intense laser pulses, existing at picosecond timescales (1 ps = 10-12 s). In my talk, I will focus on these two concepts and their applications for rewritable PCM-based devices and nonlinear light generation.

SPEAKER: **Evgenii Menshikov**

Date: July 12, 2024, 3:00 PM Location:

Aula consiliare, via Branze 38

AFTER A PRESENTATION THERE WILL BE A LIGHT REFRESHMENT

UNIVERSITÀ DEGLI STUDI DI BRESCIA