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Optics on nano-structured surfaces

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Ultrathin materials and nano-structuring are becoming essential for the functionalization of optical surfaces. In the talk we will show how ultrathin metals can be exploited to create competitive transparent electrodes while graphene and phase change materials to modulate the optical response. Ultrathin metals can also be used to create nanostructured surfaces through mass scalable dewetting and etching techniques. We will also provide examples of applications enabled by these materials and techniques, including efficient high speed electro-optic modulators, indium-free light emitting diodes, solar cells and easy-to-clean display screens.

Biography

Valerio Pruneri is an ICREA Industrial Professor, Corning Inc. Chair and group leader at the Institute of Photonic Sciences (ICFO). Previously he worked for Avanex, Corning, Pirelli, and the Optoelectronics Research Centre (University of Southampton). He has more than 30 patent families, 60 invited talks and 300 refereed papers. He serves on the European QEOD board, the advisory board of ACREO Fiber Optic Centre, VLC Photonics and Medlumics SL. He received the Philip Morris Prize for Scientific and Technological Research, the Pirelli Research Fellowship, the IBM Faculty Award, the Corning Inc. Professorship and the Duran Farell Prize for Technological Research.

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