

A joint work of Professors Novotny, Quidant, and van Hulst in the American Physical Society web spotlight.



“Never say never to a forbidden transition”: the issue of January 19 of Physics offers a synopsis commenting on recent results by researchers from ICFO and the University of Rochester on the free space excitation of propagating Surface Plasmon Polaritons (SPPs).

Advances in the study of excitation of SPPs have important applications in the fields of optoelectronics, metamaterials, imaging, and biosensing. The new approach breaks with the common notion that SPPs can only be generated through evanescent waves or corrugated surfaces: now, as the spotlight comments, using 4 wave mixing, SPPs with well-defined energies, momenta, and directivity are excited directly on any flat surface of gold.

The results were published in Physical Review Letters by Dr. Jan Renger, Dr. Stefano Palomba, and ICFO Distinguished Invited Professor Prof. Lukas Novotny (University of Rochester); and ICFO Group Leaders and ICREA Professors Romain Quidant and Niek van Hulst. The research was conducted at ICFO during the sabbatical stay (2008-2009) of Prof. Novotny in the group led by Prof. van Hulst.