Description of the group

The “THz Photonics and Optical Signal Processing” group is one of the seven research groups within the Nanophotonics Technology Center of the Universitat Politècnica de València. This group is led by Prof. Borja Vidal and made up of four PhD students and several undergraduates.

The group works in two areas: THz Photonics and nonlinear optical signal processing.

In the field of THz Photonics we are interested in the development of new applications for THz waves. Using photoconductive antennas and fiber based systems we develop hardware and software to tackle challenges in noncontact quality control and industrial monitoring. THz sensing can provide information that cannot be extracted using waves in other spectral bands which is very valuable to enhance industrial processes.

In the area of nonlinear optical signal processing we work in the use of nonlinear effects in optical fiber to develop new functionalities aimed at applications in optical networks and microwave photonics. In particular, we have a long experience in the use of stimulated Brillouin scattering for signal processing. The group has recently pioneered the use of this inelastic scattering for efficient light-by-light control.

Selected publications


Recent research projects

1. ULTRAWAVE “Ultra Capacity Wireless Layer beyond 100 GHz based on Millimeter-wave Travelling Wave Tubes” (EU H2020)
2. PEER “Ensanchando los límites del control de calidad con THz” (AEI)

Contact

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