

04 de junho de 2025 - 14h00 - Sala F-147 (IFSC/USP)

"Café com Física" – Nonlinear Optical Spectroscopy of Interfaces



Café com Física



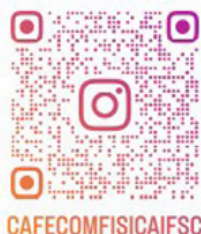
04 de junho de 2025
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Nonlinear Optical Spectroscopy of Interfaces

The behavior of materials at interfaces is often quite different from that in the bulk. For example, the structure and reactivity at interfaces are generally very different from their bulk counterparts. In this talk I will describe the basic principles and capabilities of two related experimental techniques to investigate interfaces based on nonlinear optics: Second-Harmonic Generation (SHG) and Sum-Frequency Generation (SFG) spectroscopies. They yield, respectively, the electronic and vibrational spectra of interfaces without contribution from the bulk material. In this talk I will focus on SFG vibrational spectroscopy of molecular systems, illustrating with a few applications of the technique from the literature and from our laboratory at IFSC, the first and still the only one in Latin America to implement this technique. At the end, we can discuss possible applications to inorganic materials, such as topological insulators and 2D materials.



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