

# **Efficient metasurfaces for nonlinear and ultrafast nanophotonics.**

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In this talk, we will discuss our recent advances in photonic platforms that are designed to tailor and enhance light-matter interactions at subwavelength scales, with a focus on nonlinear optical effects. We will explore how plasmonic systems can enhance a wide range of nonlinear effects, from hot electron dynamics to harmonic generation. Additionally, we will report on our efforts to address the limitations of metallic systems, such as poor tunability, low quality factors, and low damage thresholds, by utilizing dielectric metasurfaces and epsilon-near-zero materials.