



Prof. Bruno Palpant specializes in modeling and measuring the stationary and ultrafast transient optical properties of metal nanoparticles, light-heat conversion by nanoparticles, and heat transfer at short time and space scales. His research projects are dedicated to applications in nanophotonics, biomedicine, and material science for color. After a Ph.D. in Lyon, France in 1998, and a post-doctoral

research position at Keio University, Japan, he was hired by *Institut des NanoSciences de Paris* in Sorbonne University, which he left for Ecole Centrale Paris (now CentraleSupélec) as a full professor in 2009. He is currently Deputy Director of the new *Light, Matter, and Interfaces* (LuMIn) laboratory (CNRS-Université Paris-Saclay). He has co-authored about 65 A-rank publications and managed 25 research projects funded for a total of 1.1 M€.

Speech Title:

Hot electrons widen the promises of localized plasmons

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The localized plasmon resonance enables effective input of energy into metal nanoparticles by light irradiation. Using ultrashort laser pulses leads to the generation of a hot electron gas, the dynamics of which results in diverse interesting phenomena: transient ultrafast modulation of the optical response, multiphoton emission of both electrons and broadband light, strong localized heat burst. We will present the basic principles of these phenomena and illustrate them through examples.