

GUILLAUME BAFFOU

THERMOPLASMONICS

HEATING
METAL
NANOPARTICLES
WITH LIGHT



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Thermoplasmonics

Heating Metal Nanoparticles Using Light

Plasmonics is an important branch of optics concerned with the interaction of metals with light. Under appropriate illumination, metal nanoparticles can exhibit enhanced light absorption, becoming nanosources of heat that can be precisely controlled. This book provides an overview of the exciting new field of thermoplasmonics and a detailed discussion of its theoretical underpinnings in nanophotonics. This topic has developed rapidly in the last decade, and is now a highly active area of research due to countless applications in nanoengineering and nanomedicine. These important applications include photothermal cancer therapy, drug and gene delivery, nanochemistry and photothermal imaging. This timely and self-contained text is suited to all researchers and graduate students working in plasmonics, nano-optics and thermal-induced processes at the nano scale.

Dr Guillaume Baffou is a CNRS Research Scientist at the Institut Fresnel in Marseille. His research is focused on the interface between nano-optics and small-scale thermal effects. Specifically, he has been investigating the interaction between light and plasmonic metal nanoparticles, and the resulting applications in physics, chemistry and biology. In 2015 he was awarded the bronze medal of the CNRS in recognition of his important contributions to the field.

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GUILLAUME BAFFOU

Institut Fresnel, CNRS, University of Aix-Marseille



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à Camille, Marius et Clovis

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