

Thermoplasmonics: Nanoscale control of heat and its applications

ICFO-The Institute of Photonic Sciences, 08860 Castelldefels (Barcelona), Spain and ICREA-Institució Catalana de Recerca i Estudis Avançats, 08010 Barcelona, Spain

Romain Quidant,
J. S. Donner, R. Marty, J. Morales and G. Baffou

romain.quidant@icfo.es

Recent years have seen a growing interest in using metal nanostructures to control temperature on the nanoscale. Under illumination at its plasmonic resonance, a metal nanoparticle features enhanced light absorption, turning it into an ideal nano-source of heat, remotely controllable using light. Such a powerful and flexible photothermal scheme sets the basis of the emerging and fast growing field of thermo-plasmonics. In this talk we first briefly present the physics of heat generation in metal nanoparticles [1]. We then focus on the experimental methods that have been developed to further understand and engineer plasmonic-assisted heating processes on the nanoscale [2-4]. Finally, we present a selection of applications from microscopy to biomedicine.

References

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