

Temporal evolution of surfaces on materials after femtosecond laser irradiation: The earliest stages (Oral presentation)

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Ablation using femtosecond lasers exhibits significant differences in comparison with the nanosecond timescales. Ultrashort laser-matter interaction provides the observation of different phenomena as there is neither laser-plasma interaction nor shielding, which makes remarkable the comprehension of these fundamental processes for improving analytical results.

By the design and evaluation of a time-resolved microscope with a time resolution of less than 200 fs it is possible to develop a study focused on the associated processes during the earliest stages of laser ablation on several materials, attending to their nature as semiconductors, metals or insulators. The combination of this set up with an energy-resolved study applying energies above and below the plasma threshold of materials let us establish which are the physical and chemical parameters involved in plasma generation produced by lasers.