

# Time resolving imaging spectroscopy applied to the analysis of plasmas generated by pulsed lasers ( Conference Paper )

[Alvira, F.C.](#)<sup>a</sup>, [Ponce, L.](#)<sup>c</sup>, [Arronte, M.](#)<sup>c</sup>, [Bilmes, G.M.](#)<sup>ab</sup>

<sup>a</sup> Centro de Investigaciones Ópticas (CONICET La Plata- CIC), CC 3, 1897, Gonnet, La Plata, Buenos, Aires, Argentina

<sup>b</sup> Facultad de Ingeniería, Universidad Nacional de La Plata, La Plata, Buenos Aires, Argentina

<sup>c</sup> CICATA-IPN, Unidad Altamira, Altamira 89600, Tamps, Mexico

## Abstract

Start your abstract here... Time resolved imaging spectroscopy were used to study the spatial and temporal evolution of LIBS (Laser Induced Breakdown Spectroscopy) plasmas generated in Cu substrates by laser pulses of different duration. Long laser pulses (microsecond) and short laser pulses (nanosecond) as well as multipulse emission were used for excitation. Analysis was made by using an imaging spectrometer with time resolved detection. Results show that the use of long laser excitation pulses produce emission spectra with the same signal to noise ratio, but with lower resolution than those produced with shorter ones. The different species generated in LIBS experiments as neutral or single ionized have a different spatial distribution inside the plasma. We demonstrated that using spatial discrimination procedures is possible to obtain spectra with the same signal to noise ratio than those obtained with a gating detector. In this case an appreciable advantage in cost reduction is obtained by replacing the gating detector by a cheap screen.

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