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**Time resolved Infrared Laser Induced Breakdown Spectroscopy of DNA bases Guanine and Adenine.**

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The interaction of a pulsed high-power laser beam with matter and the consequent plasma generation have been studied for many years. In particular the use of CO₂ laser can induce structural changes [1]. The four bases of DNA are known to undergo various types of photoinduced reactions that lead to mutagenic and carcinogenic consequences. Because of the transient characteristics of the ablation plume,
Laser Induced Breakdown Spectroscopy (LIBS) with time resolution is especially appropriate to study the plasma expansion dynamics and their biomedical applications [2, 3]. LIBS of guanine and adenine shows strong emissions of ionized excited species \((C^+, N^+, O^+\)) and neutral atoms. The medium-weak emission is due to electronic relaxation of excited transients \(C^2+, C^+, C, H, N, O, O^+\) and molecular band systems of \(OH(A^2\Sigma^+ - X^2\Pi), CN(B^2\Sigma^+ - X^2\Sigma^+), NH(A^3\Pi - X^3\Sigma^-)\), and \(N_2^+(B^2\Sigma^+ - X^2\Sigma^+).\) The velocity and kinetic energy distributions for different species were obtained from time-of-flight measurements. Electron density in the laser-induced plasma was estimated from the analysis of spectral data at various times from the \(CO_2\) laser pulse incidence. Acknowledgments: This research was supported by the MICINN (Ministerio de Ciencia e Innovación) (CTQ2008-05393/BQ and CTQ2010-15680).


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Antibacterial polymeric coatings grown by matrix assisted pulsed laser evaporation