

International Conference on

LASERS, OPTICS AND PHOTONICS

July 25-26, 2018 | Osaka, Japan

Influence of laser energy on the electron temperature of a laser-induced Mg plasma

Emmanuel Asamoah
Jiangsu University, China

The magnesium plasma induced by a 1064nm Q-switched Nd:YAG laser in atmospheric air was investigated. The evolution of the plasma was studied by acquiring spectral images at different laser energies and delay times. We observed that the intensities of the spectral lines decrease with larger delay times. The electron temperature was determined using the Boltzmann plot method. At a delay

time of 100ns and laser energy of 350mJ, the electron temperature attained their highest value at 10164K, and then decreases slowly up to 8833.6K at 500ns. We found that the electron temperature of the magnesium plasma increases rapidly with increasing laser energy.

Asamoah_grace@hotmail.com