

TIPST 14

Micro Raman y Fotoluminiscencia con soporte en pinzas ópticas.

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ABSTRACT

This work proposes to develop a system for the characterization by photoluminescence and/or micro Raman of particles or particle systems that are supported by micrometer and nanometer trapping and manipulation by the technique of optical trapping (optical tweezers). This design focuses on getting an optical trap with a field energy distribution well known and characterized, with the option of being used as a pulsed trap which opens the possibility to study and / or resonant optomechanical phenomena used for particle capture enabling to reduce the amount of optical elements required for the construction of an optical tweezers. The system comprises a pulsed Nd: YAG (532 nm) and commercial optical components. Virtual instruments designed with Labview control both, the 8.0 image acquisition and positioning system X,Y,Z.

Key words: Raman, photoluminescence, optical trapping, optical tweezers, particles, Nd: YAG (532 nm).