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Complex diagnostic of CdTe after under-threshold laser irradiation by photoluminescence, photoconductivity, and electrophysical methods

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Abstract
In this paper a complex diagnostic of impurities defects interaction as a result of irradiation by a ruby laser pulse of 20 ns duration has been made. Photoluminescence, photoconductivity, Raman scattering, microscopic and electrophysical methods were used to characterize the deviation from the stoichiometric composition, impurities activation and disactivation, tellurium layer and dislocations network creation. The mechanism of dislocations appearance as shown is mechanical stresses accumulated in laser irradiated area under the threshold of plasticity of the material.

Keywords
Optoelectronics, semiconductors, Luminescence, Cadmium, Laser irradiation,, Diagnostic , Laser damage threshold Crystals, Ruby lasers, Excitons Raman scattering

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