

Catastrophic Breakdown in Nonlinear Optical Crystals under Continuous-wave Laser Irradiation

Wednesday 6 November 2013 14:30 (3h 30m)

High-power continuous-wave (CW) lasers are used in many industries, including laser processing, fiber-optic communication, and laser display. Laser-induced breakdown damage in optical materials limits the laser power. We propose a nonlinear absorption mechanism in optical crystals under CW laser irradiation. The absorption mechanism works for catastrophic CW laser breakdown in an optical crystal such as LiNbO₃ or LiTaO₃, in which the bandgap energy is less than two times the photon energy and which has a long-lived excited state like a polaron.

Presenter: KATO, Susumu (National Institute of Advanced Industrial Science and Technology)

Session Classification: Poster session