

Abstract Submitted  
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**Investigation of lasing from dye doped plastics using flash lamp and Nd:YAG excitation.** MARK MASTERS, MIKE DE ARMOND, CLINT REYNOLDS, HANS SUEDHOFF, IPFW — We present an investigation of organic dye doped plastics as a lasing medium. The host materials examined are poly(methyl methacrylate) [acrylic], epoxy, polyester and polyurethane. Various solvents are used to improve dye dispersion within the material. Two forms of excitation (flash lamp and frequency doubled Nd:YAG) are used. For the Nd:YAG pumped dye lasers, a disk of dye doped plastic is mounted in a housing to provide random orbital motion. The disk is within a Littmann configuration cavity. Each dye disk is tested for threshold, durability, power output, bandwidth, and tuning range. An end pumped cylinder is also explored. For the flash lamp pumped dye lasers two configurations are used: a traditional dye cylinder within an elliptical reflector and a hollow cylinder with the flash lamp within the hollow. A monolithic cavity for the flash lamp pumped system is investigated.

Mark Masters  
IPFW

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