

Abstract Submitted
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A air-bearing based, random orbital drive system for a longitudinally pumped solid state dye laser¹ FREDRIK DE ARMOND, ROBERT DILL, JOSEPH SUELZER, MARK MASTERS, IPFW — We present our results of an investigation of organic dye doped plastics as a lasing medium. The host materials we have examined are poly(methyl methacrylate) [acrylic], epoxy, polyester and polyurethane. Various solvents have been used to improve dye dispersion within the material. We produce plastic doped disks which are contained in a Littman configuration cavity. Longitudinal pumping with a frequency doubled pulsed Nd:YAG laser is used. To improve the lifetime of the doped disks we have incorporated the disk into an air-bearing assembly. By introducing translational motion with a solenoid, the disk undergoes random orbital motion with respect to the pump laser beam. Lifetime of the disk, lasing quality parameters (bandwidth, tunability, power) are examined.

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