

Numerical Simulation and Optimal Control in Gas Dynamic Laser GDLs

Authors : Laggoun Chouki

Abstract : In this paper we present the design and mechanisms of the physics process and discuss the performances of continuous gas laser dynamics, based on molecules $N_2(v=1)-CO_2(001)(v=3)$. The main objectives of work in this area are, obtaining the high laser energies in short time durations needed for the feasibility studies the physical principles that can be used to make laser sources capable of delivering high average powers. We note that, in order to reach both objectives, one has to convert electrical or chemical energy into laser energy, using gaseous media. The process generating the wave excited, on the basis of the excited level vibration, Theoretical predictions are compared with experimental results. The feasibility and effectiveness of the proposed method is demonstrated by computer simulation.

Keywords : modelling, lasers, gas, numerical, nozzle

Conference Title : ICPP 2023 : International Conference on Plasma Physics

Conference Location : Barcelona, Spain

Conference Dates : August 10-11, 2023