

The modeling and characterization of simple semiconductor wafers as  
passive laser modulators

陳振文, 陳俊男, 陳榮釗, 林書院

Mechanical Engineering

Engineering

0

Abstract

The modeling and characterization of simple semiconductor wafers of GaAs, InP, etc. as passive laser modulators that give burst of Q-switched pulse and Q-switched mode-locking pulses train will be present in detail. Various simple and inexpensive semiconductor wafer pieces were used to passively modulate the Nd:hosted solid state laser systems, and the mechanism of saturable absorption that give burst of Q-switched pulse and Q-switched mode-locking pulses were studied theoretically and experimentally. We have established complete passive laser saturable absorber model, and the numerical derivation results are quite coincident to the experimental results.

Keyword : Semiconductor wafers, passive saturable absorber, Q-switched pulse, Q-switched mode-locking pulses train.