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PULSING AND CHARACTERIZATION OF A DIODE LASER

By

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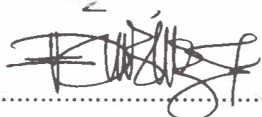
**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

PULSING AND CHARACTERIZATION OF A DIODE LASER

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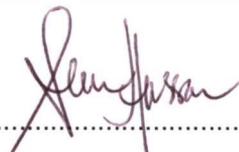
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LIST OF ABBREVIATIONS

| | |
|--------|-------------------------------|
| CD | Compact disc |
| DVD | Digital video disc |
| IC | Integrated circuit |
| CW | Continuous wave |
| CD-ROM | Compact disc-read only memory |

ABSTRACT

Laser in the form of laser diode are in widespread use today. Diode laser are used in large number of industrial applications, the most prevalent use of the laser diode is probably in CD and DVD drives for computer and audio or video media systems. Diode laser are also used in many other applications varying from laser photocopy machines and printer to optical fiber communication, medicine and some areas of IC manufacture. Pulsing a laser diode can be powerful analytical tool for testing its quality and thermal efficiency. This study describes method to pulse a continuous wave laser diode. An inexpensive laser pointer was utilized as a laser source. The pulser device was developed using 555 monostable current. The pulsed laser diode then was detected by high speed photodetector.

ABSTRAK

Laser dalam bentuk laser diod adalah mempunyai kegunaan yang meluas pada hari ini. Laser diod digunakan dalam pelbagai kegunaan yang berskala besar dalam industri, yang paling hampir adalah pemacu CD dan DVD bagi komputer dan audio atau sistem hiburan video. Laser diod adalah juga digunakan didalam lain-lain kegunaan yang pelbagai, bermula daripada laser untuk mesin fotokopi dan pencetak kepada sistem perhubungan fiber optic, perubatan dan dalam beberapa bidang berkaitan pembuatan litar bersepadu (IC). Denyutan satu laser diod boleh menghasilkan sebuah alat penganalisa yang berkuasa untuk pengujian kualiti dan kecekapan termanya. Kajian ini menerangkan kaedah untuk mendenyutkan suatu gelombang berterusan bagi laser diod. Satu laser penunjuk yang murah digunakan sebagai aplikasi sebagai satu sumber laser. Denyutan laser diod kemudiannya dikesan menggunakan diod cahaya berkelajuan tinggi.