

Innovation and Commercialization

UNIVERSITY OF TEXAS  ARLINGTON

Wavelength and Intensity Monitoring of Optical Cavity

Tech ID: UTA 08-03

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TECHNOLOGY NEED

Broad-area laser diodes are widely used today as various pump sources for fiber lasers and optically pumped solid state lasers. Wavelengths and intensities of lateral modes play a major role in coupling the pump laser diode and the gain medium. Existing lateral mode intensity monitoring devices, involving instruments such as grating and interferometers, require optical table and significant space. An alternative way of monitoring the lateral modes by coherent heterodyning also faces the same disadvantages since it utilizes an external optical source. Therefore there is need for a comprehensive, compact and efficient device methodology to monitor the lateral mode structure of a broad-area laser diode

INVENTION DESCRIPTION/SOLUTION

A novel device for measuring the optical fine structure of lateral modes of an optical cavity is presented herein. This device measures, analyses and processes the optical signals from the optical cavity, which ultimately aids in delivering an optimum pump light to the active medium of the laser and thereby increase the optical gain within a laser. This device overcomes the disadvantages in existing systems as the design is compact and robust, and its self-heterodyne nature eliminates the need for any external optical source.

APPLICATIONS

- Communication
- Material Processing
- Medical & Aesthetic
- Instrumentation & Sensor

KEY BENEFITS

- Optimal energy utilization
- Cost-effective

STAGE OF DEVELOPMENT

Prototype

INTELLECTUAL PROPERTY STATUS

Series Application: 12027973

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