

The development and future of the Faraday laser

This paper introduces the development of the Faraday laser, which is a novel external cavity diode laser that uses the Faraday anomalous dispersion optical filter as the frequency selective element based on the quantum technology. This paper also demonstrates the advantages of the Faraday laser compared to the traditional ECDLs which are usually based on gratings, Fabry-Pérot etalons and interference filters. The Faraday lasers are immune to the fluctuations of current and temperature of the laser diode, and the output wavelength can automatically correspond to the atomic lines. This paper also shows the recent researching results in frequency locking, quantum precision measurement, and gives a research planning of future.

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