

Abstract Submitted
for the OSF08 Meeting of
The American Physical Society

Power-scalable, polarization-stable, dual-colour DFB fibre laser system for CW terahertz imaging FINN EICHHORN, DTU Fotonik, Department of Photonics Engineering, Technical University of Denmark, JENS ENGHOLM PEDERSEN, Koheras A/S, Denmark, PETER UHD JEPSEN, DTU Fotonik, Department of Photonics Engineering, Technical University of Denmark — Imaging with electromagnetic radiation in the terahertz (THz) range has received a large amount of attention during recent years. THz imaging systems have diverse potential application areas such as security screening, medical diagnostics and non-destructive testing. We will discuss a power-scalable, dual-colour, polarization-maintaining distributed feedback (DFB) fibre laser system with an inherent narrow linewidth from the DFB fibre laser oscillators. The laser system can be used as source in CW THz systems employing photomixing (optical heterodyning) for generation and detection and is an alternative to pulsed THz systems using femtosecond lasers. The laser system generates output powers up to several hundred mW, has a 25 kHz linewidth and a polarization extinction ratio of better than 20 dB. Since the output power reaches the Watt-level, the laser system is a suitable candidate for future multi-channel THz imaging systems.

Finn Eichhorn
Technical University of Denmark

Date submitted: 18 Sep 2008

Electronic form version 1.4