THE UNIVERSITY OF ALABAMA RESEARCH
Office for Technology Transfer

Manufacturing Methods and its Application for High Power Terahertz Sources

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Status:

Seeking R&D and/or licensing partner

Patent Pending

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Pattebed GaN Quasi-Phase Matched (QPM) Nonlinear Optical Crystal: Manufacturing Methods and its Application for High Power THz Sources

- New Terahertz Source device:
  - Generates Terahertz waves/radiation (frequency 0.3 – 10 THz)
  - Expected to generate a power 2 orders of magnitude stronger than the state-of-the-art
  - Cooling un-needed, compact, robust and user-friendly

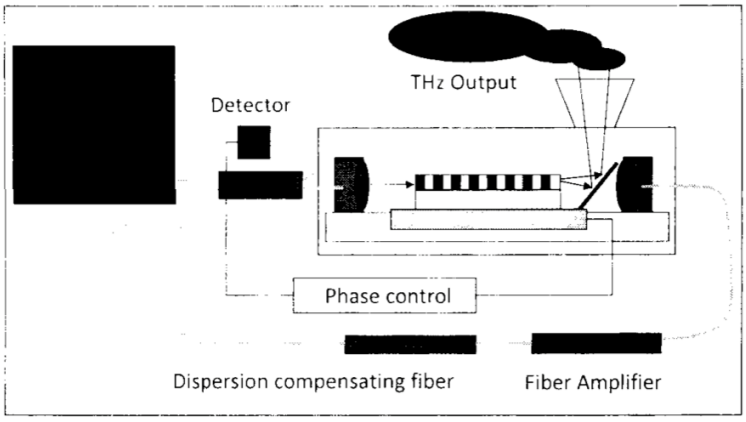


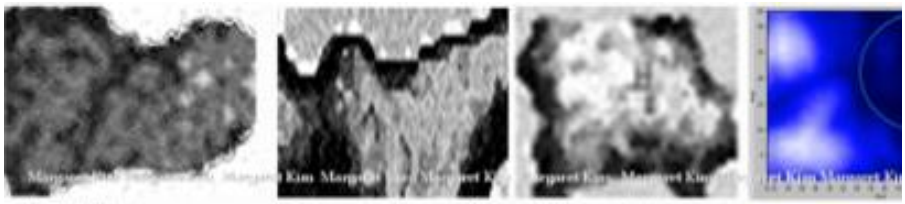
Figure 2. Schematics of Terahertz generation and detection coupled with the fiber laser, proposed as a prototype.

Advantages

- Low dispersion at pump laser and in THz
- No need for special lasers
- Wider transparency window than GaAs
- Higher thermal conductivity than GaAs

Applications

- Cancer diagnosis
- DHS/TSA may also benefit from THz



Multiple tumors in liver tissue

Comparison of healthy and tumor grown lung tissue

For More Information, Click to View YouTube Video