

Terahertz generator and detector

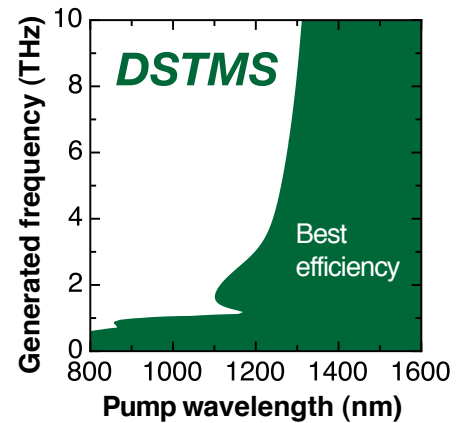
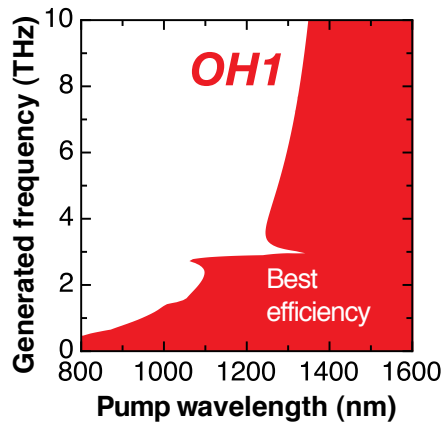
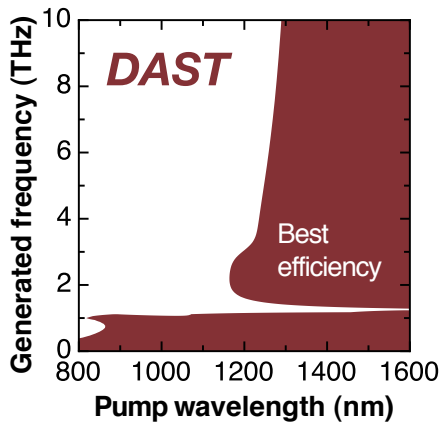


- Efficient THz generation using optical rectification of femtosecond pump pulses
- Efficient THz generation using nonlinear optical difference frequency generation
- Optimized for pump wavelengths of 1.2–1.6 μm ; 0.7–0.8 μm available upon request
- Efficient electro-optic THz detector

Specifications

| | |
|------------------------------|---|
| Aperture | 2, 3, 4 or 5 mm; others upon request |
| Damage Threshold | 150 GW/cm ² @150 fs pulse length |
| Photon conversion efficiency | 2·10 ⁻⁴ /MW-peak-power |

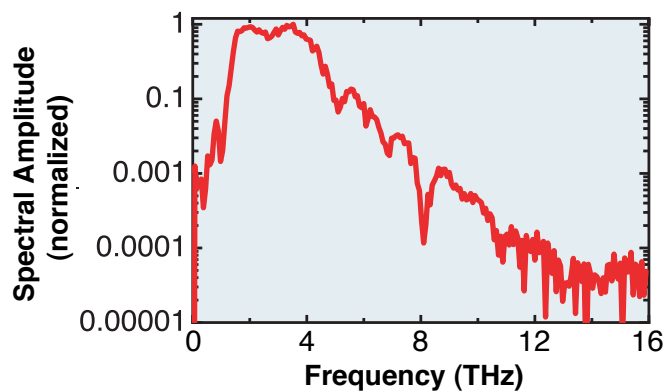
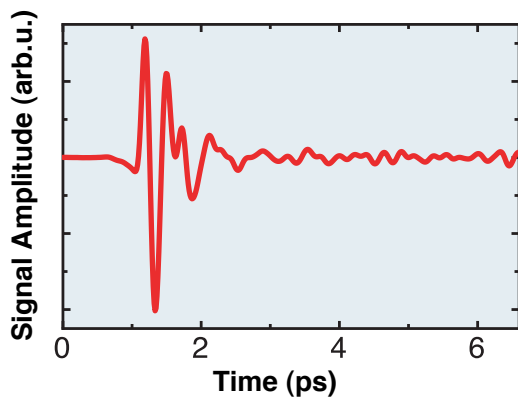
THz Frequency Ranges for Generator Materials



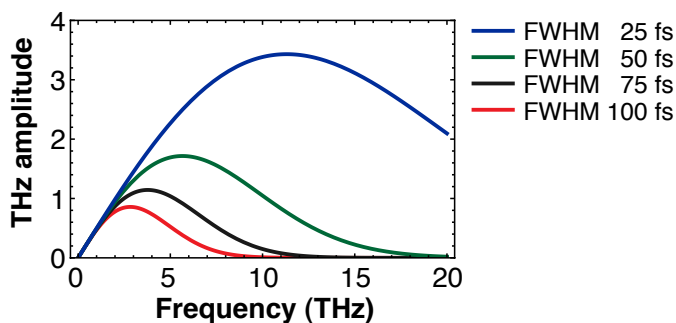
Spectral Bandwidth (measured with Rainbow Photonics instruments)

Source/Detector: 0.45 mm DSTMS
 $\lambda = 1560$ nm

Pump Pulse length: 65 fs
 Energy/Pulse: 1 nJ, Average Power: 100 mW



THz Frequency Range for Different Pump-Pulse Lengths



References

- A. Schneider et al, Appl. Phys. Lett. 84, 2229 (2004).
- A. Schneider et al, J. Opt. Soc. Am B 23, 1822 (2006).
- F. Brunner et al, Opt. Express 16, 16496 (2008).
- M. Stillhart et al, J. Opt. Soc. Am B 25, 1914 (2008).

More information available upon request.

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