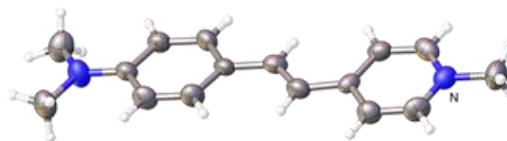


DAST Organic Crystal

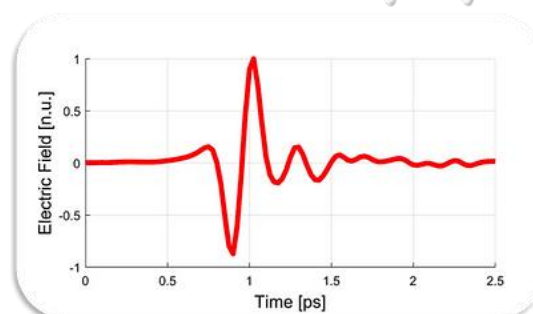
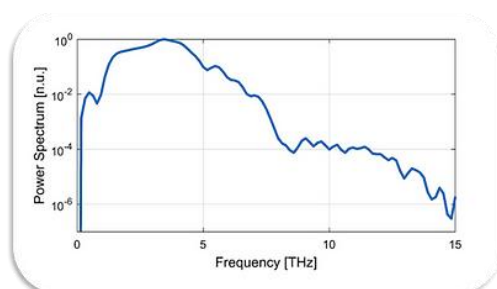
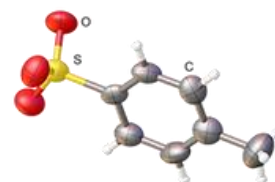
4-N,N-dimethylamino-4'-N'-methyl-stilbazolium tosylate

Applications

- THz/MIR generator and detector
- Multi-THz generator
- Second harmonic generator



Example Output



Laser Requirements

DSTMS operates with all conventional types of lasers

- Telecomm fiber
- OPA
- OPCPA

Expected Output

- Input laser: 4 mJ OPA near-infrared
- Output THz: 95 MV/cm

Physical Properties

Physical Property	Value
Nonlinear Optical Coefficient	$d_{11}(1318\text{nm}) = 1000\text{pm/V}$ $d_{11}(1542\text{nm}) = 280\text{pm/V}$
Electro-optic Coefficient	$r_{11}(720\text{nm}) = 90\text{pm/V}$ $r_{11}(1313\text{nm}) = 50\text{pm/V}$
Melting Point	256°C

State of the Art: Intense Nonlinear Terahertz Spectroscopy

Crystal	Experimental Requirements	Conversion Efficiency at RT	Bandwidth
DAST	Simple Collinear Scheme	1-3%	15 THz
Lithium Niobate	Complex Tilted Pulse Front	0.1%	1 THz or 3 THz

Our Crystal Technology in Literature



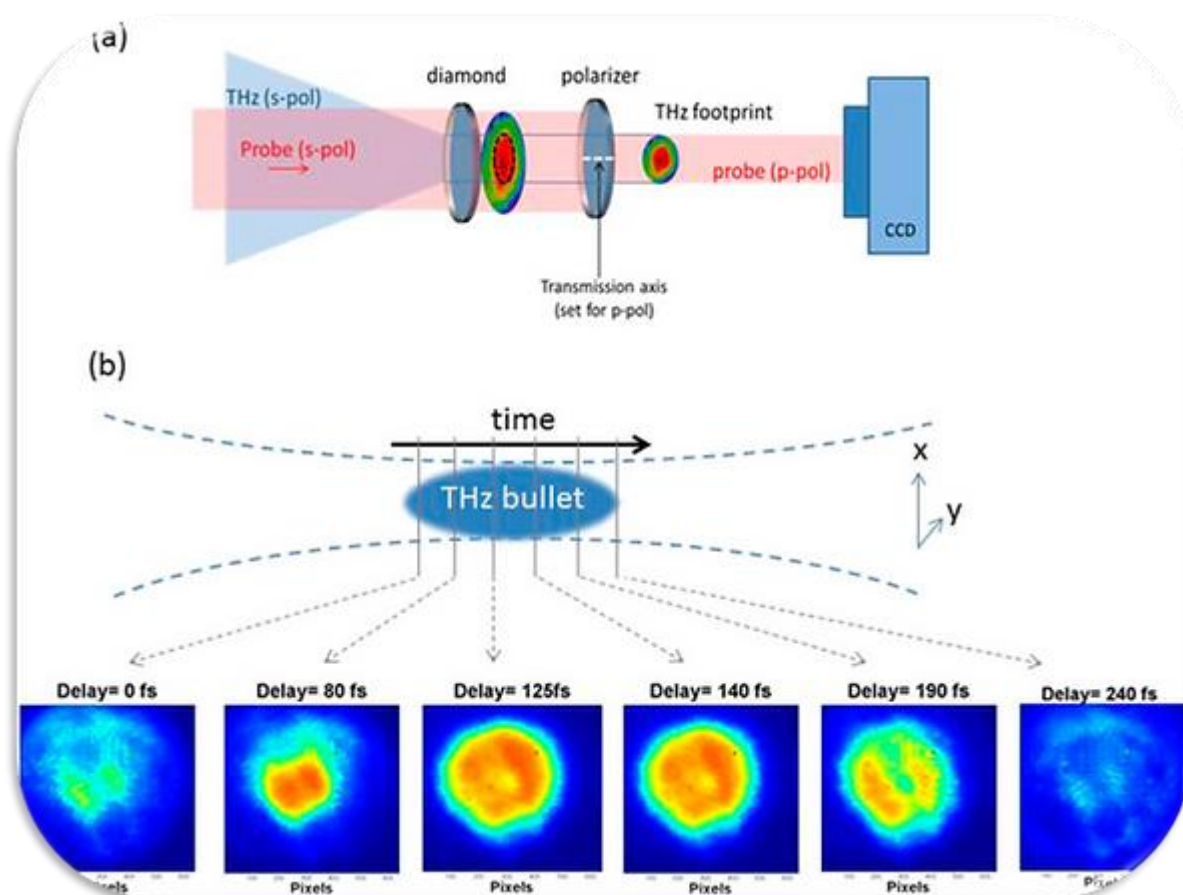
Article | OPEN

High-performing nonlinear visualization of terahertz radiation on a silicon charge-coupled device



TERAHERTZ SCIENCE

Ultrafast pulse switching



Literature

Opt. Express 18, 23621 (2010); APL photonics 2, 036106 (2017);
Nature Photonics 11, 331 (2017); Nat. Commun. 6, 5976 (2015)

Opt. Express 20, 2850 (2012); Nat. Commun. 6, 8439 (2015)