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Title:Dendrimer based terahertz time-domain spectroscopy and applications in molecular characterization
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Abstract:Electro-optic Dendrimer is used to generate milliwatts of terahertz power by difference frequency method. A terahertz time-domain spectrometer (THz-TDS) has been designed around this source that exhibits wide broadband terahertz range, ~0.1 to 35 THz. Examples of molecular characterization are discussed for three common explosives and the vibrational states of Fullerenes. The explosives' spectra are unique for each explosive that allow detection and identification of the species. The Fullerenes C60 and H 2@C60 also exhibit distinctively different spectra and absorbance states indicating that the THz-TDS is suitable for probing increased number of vibrational states expected from molecular vibrations.
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