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Terahertz Time-Domain Ellipsometry

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Abstract content (Max 300 words) Formatting & Special chars

Terahertz time-domain spectroscopy (THz-TDS) is a useful tool for material characterization. The most common THz-TDS setups are transmission based, but these setups are severely limited in application by water absorption, especially when investigating biological samples. In these cases it would be preferable to work in reflection rather than in transmission. Setting up a reflection geometry terahertz spectroscopy setup is challenging due to stringent alignment tolerances and the small size of the emitter and detector. By performing ellipsometry measurements, the need for reference measurements is removed. This simplifies the alignment somewhat.

We propose a terahertz time-domain ellipsometry setup based around photoconductive antennae. The background theory on terahertz generation and detection via photoconductive antennae, as well as ellipsometry will be discussed. Lastly, methods via which optical parameters can be extracted from terahertz time-domain ellipsometry data will be discussed.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

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Yes

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