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Title:A review on thin-film sensing with terahertz waves

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Abstract:In the past two decades, the development and steady improvement of terahertz technology has motivated a wide range of scientific studies designed to discover and develop terahertz applications. Terahertz sensing is one such application, and its continued maturation is virtually guaranteed by the unique properties that materials exhibit in the terahertz frequency range. Thinfilm sensing is one branch of this effort that has enjoyed diverse development in the last decade. Deeply subwavelength sample thicknesses impose great difficulties to conventional terahertz spectroscopy, yet sensing those samples is essential for a large number of applications. In this article we review terahertz thin-film sensing, summarizing the motivation, challenges, and state-of-the-art approaches based predominately on terahertz time-domain spectroscopy. © Springer Science+Business Media, LLC 2012.

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