

Development and Challenges for Room-Temperature Operable THz Detection Systems

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Over the past few decades, significant progress has been made in the Terahertz (THz) domain, closing the gap between the electronics and optics regions of the electromagnetic spectrum. Especially the development of sources and detectors is of great importance for enhancing the capabilities to explore the THz spectrum to its fullest extent. THz radiation sources based on accelerators offer new avenues for studying physical matter and its applications. To fully explore the potential of this spectrum, THz detection systems, such as THz detectors, are necessary. In this overview talk, we present recent developments and challenges encountered as we advance the technology to a mature level. The summarized room-temperature operable THz detectors are presented, along with other competent technologies. The key factors for improving THz detector performance, along with the selected necessary THz electronics, are discussed. The idea is to bring developers and users of THz technology to a common platform to discuss needs and pave the way for a future roadmap that enriches the THz domain for all.

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