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Title:Real-time imaging using a high-power monochromatic terahertz source: Comparative description of imaging techniques with examples of application

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Abstract:Gradually appearing high-power terahertz sources require the development of adequate imaging techniques. This paper describes four imaging techniques (with a thermal recorder, temperature-sensitive phosphor plates, a visible-light thermal sensitive Fizeau interferometer, and an uncooled microbolometer array) applied with the Novosibirsk terahertz free electron laser as a radiation source. The space and time resolutions of the devices were examined thoroughly. Examples of the application of these techniques, including in-line holography and real-time moving-objects detection, are given.

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