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Carbon-based devices for THz technology

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THz technology holds great potential for applications in several fields, including medical imaging, security screening and communication. However, sources and detectors in this region of the electromagnetic spectrum, comprising the frequency range between microwaves and infrared radiation, from 100 GHz to about 10 THz, are still scarce. Recently, advances in materials and experimental techniques have revealed new promising avenues for THz devices. Here, the author will review why carbon-based devices are especially suitable for THz applications and will discuss new, highly-sensitive detectors of THz radiation that are recently developed.

Biography

Paola Barbara received her MS degree (Laurea in Fisica) at the University of Salerno, Italy, in 1991 and her PhD in Physics at the Technical University of Denmark, in Lyngby, Denmark, in 1995. Prior to joining the faculty at Georgetown University, she worked at the Center for Superconductivity Research (currently Center for Nanophysics and Advanced Materials) at the University of Maryland as a Postdoctoral Associate. She is the current Director of the Georgetown Nanoscience and Microtechnology Laboratory.

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