Abstracts

Multiple-frequency generation of sub-terahertz radiation by multimode LD excitation of photoconductive antenna

M. Tani, S. Matsuura, K. Sakai and M. Hangyo. "Multiple-frequency generation of sub-terahertz radiation by multimode LD excitation of photoconductive antenna." 1997 Microwave and Guided Wave Letters 7.9 (Sep. 1997 [MGWL]): 282-284.

Multiple-frequency coherent radiation in the sub-terahertz region was generated by excitation of a photoconductive antenna with a commercially available multimode laser diode (LD). The origin of the radiation was the current modulations in the photoconductive antenna caused by the optical beats between the longitudinal modes of the LD. An interferometric spectral measurement showed line spectra at frequency multiples of 52 GHz beyond 400 GHz. This result indicates that the photoconductive antenna with a multimode LD excitation can achieve a wavelength-selectable coherent radiation source in the sub-terahertz region with a very simple and compact device configuration.

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