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Title:Recent progress on terahertz generation based on difference frequency generation: From power scaling to compact and portable sources

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Abstract:The progress achieved on power scaling and compact and portable THz sources is reviewed. By reversely stacking the GaP plates, the photon conversion efficiency is improved from 25% to 40% which corresponds to the maximum value. When the number of the plates is increased from four to five, the output power decreases because of back conversion. The THz generation is also investigated by mixing the two frequencies generated by a single Nd:YLF solid-state laser. The average output power reaches 1 uW. The introduction of two Nd:YLF crystals significantly improves the output power to 4.5 uW. This configuration facilitates the generation of different output frequencies.

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