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Title:Continuously tunable ultra broadband terahertz generation implemented with 1.2μm NIR pumping of GaSe
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Abstract: This paper presents the characteristics of 1.2m - laser pumped wide frequency tunable terahertz (THz) light source based on difference frequency generation (DFG) with an excitation of phonon - polariton in Gallium Selenide (GaSe) crystal. The pump and signal lasers used are 1.2m Cr:Forsterite lasers. The tuning range of the THz - wave frequency covers from 0.3 THz to 4.8 THz (type oee phase matching) and 8.3 THz to 10.2 THz (type eoo phase matching) under collinear phase matching conditions. It is shown that the maximum conversion efficiency is ~10-6 , which is about 3 order in magnitude larger than that of Gallium Phosphide (GaP) crystal.
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