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标题: Experimental demonstration of wakefield effects in a THz planar diamond accelerating structure
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摘要: We have directly measured THz wakefields induced by a subpicosecond, intense relativistic electron bunch in a diamond loaded accelerating structure via the wakefield acceleration method. We present here the beam test results from the diamond based structure. Diamond has been chosen for its high breakdown threshold and unique thermoconductive properties. Fields produced by a leading (drive) beam were used to accelerate a trailing (witness) electron bunch, which followed the drive bunch at a variable distance. The energy gain of a witness bunch as a function of its separation from the drive bunch describes the time structure of the generated wakefield. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.3697640]
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