Tunable THz source for the THz gap (Technion)

code: COM-1503

The Terahertz (THz) region, coined the' Terahertz gap', is a region of the electromagnetic spectrum which has few convenient radiation sources. This is owing to the fact that electronic circuits are too slow to reach the THz region. In addition, the fast dephasing of the electronic state in solids in this range inhibits the use of laser-based generators at room temperature. The current available sources are inept, not tunable and unwieldy. The new invention proposes a solution based on coherent interactions in a semiconductor device. Such interactions were never observed before at room temperature, until our recent demonstration. We find that these interactions can be adapted to be transformed into a THz source at the THz gap.

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