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标题: Plasmon enhanced near-field radiative heat transfer for graphene covered dielectrics
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摘要: It is shown that a graphene layer on top of a dielectric slab can dramatically influence the ability of this dielectric for radiative heat exchange turning a poor heat emitter/absorber into a good one and vice versa. The effect of graphene is related to thermally excited plasmons. The frequency of these resonances lies in the terahertz region and can be tuned by varying the Fermi level through doping or gating. It makes possible the fast modulation of the heat flux by electrical means, which opens up new possibilities for very fast manipulations with the heat flux. The heat transfer between two dielectrics covered with graphene can be larger than that between best known materials and becomes especially efficient below the room temperature.
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