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Patent Number(s): FR2971594-A1; WO2012110520-A1

Title: Terahertz modulator for modulation of incidental terahertz radiations at use frequency band, has unit for modifying coupling intensity between phonon-polariton and incidental radiation by modification of dielectric function of polar crystal

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Abstract: NOVELTY - The modulator (1) has a polar semiconductor crystal e.g. polar crystal blade (330), having a Reststrahlen band covering a frequency band and presenting an interface with a dielectric medium. Coupling units couple an interface phonon-polariton supported by the interface and an incidental terahertz radiation (2) of frequency provided in the frequency band. An optical control unit (22) modifies the coupling intensity between the phonon-polariton and the incidental radiation by modification of a dielectric function of a polar crystal in the Reststrahlen band.

USE - Terahertz modulator for modulation of incidental terahertz radiations at frequency band ranging between 3 to 30 terahertz.

ADVANTAGE - The control unit modifies the coupling intensity between the phonon-polariton and the incidental radiation by modification of the dielectric function of the polar crystal in the Reststrahlen band, thus allowing the modulator to assure efficient modulation of incidental terahertz at temperature ambient.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for modulation of an incidental radiation of terahertz frequency.

DESCRIPTION OF DRAWING(S) - The drawing shows a perspective view of a terahertz modulator.

Terahertz modulator (1)

Incidental terahertz radiation (2)

Optical control unit (22)

Polar crystal blade (330)

Derwent Class Code(s): P81 (Optics); V07 (Fibre-optics and Light Control)

Derwent Manual Code(s): V07-K01

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Field of Search: x