546

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Title: Optical crystal for terahertz wave generation device for generating terahertz waves using non-linear optical effect, has non-linear optical crystal generating terahertz waves corresponding to difference frequency component in incident light

Inventor Name(s): UCHIDA H

Patent Assignee(s): ARKRAY INC (ARKR)

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Abstract: NOVELTY - The crystal (10) has a non-linear optical crystal (10a) generating terahertz waves corresponding to a difference frequency component in incident light with two different wavelengths by a difference frequency generation. Another non-linear optical crystal (10b) generates the waves corresponding to the difference frequency component in the incident light with the two different wavelengths by the difference frequency generation, where the latter non-linear optical crystal is different in material from the former non-linear optical crystal, and the crystals are placed in contactor close together.

USE - Optical crystal for a terahertz wave generation device (claimed) for generating terahertz waves using a difference-frequency generation effect i.e. non-linear optical effect.

ADVANTAGE - The crystal can generate terahertz waves with different spectroscopic characteristics from a single optical crystal. The non-linear optical crystals are superposed, so that optical characteristics are maximized, thus providing maximum performance. The crystal provides the terahertz waves with different spectroscopic characteristics without replacing the crystal.

DETAILED DESCRIPTION - The former non-linear optical crystal is a 4-dimethylamino-N-methyl-4-stilbazolium tosylate crystal (DAST) and the latter non-linear optical crystal is 4-dimethylamino-N-methyl-4-stilbazolium-p-chlorobenzene sulfonate (DASC) crystal. INDEPENDENT CLAIMS are also included for the following:

(1) a terahertz wave generation device, comprising a light generation unit

(2) a method for generating terahertz wave.

DESCRIPTION OF DRAWING(S) - The drawing shows a perspective view illustrating incidence directions of excitation light on an optical crystal.

Direction (L)

Optical crystal (10)

Non-linear optical crystals (10a, 10b)

Derwent Class Code(s): E13 (Heterocyclics); L03 (Electro-(in)organic, chemical features of electrical devices); P81 (Optics); V07 (Fibre-optics and Light Control)

Derwent Manual Code(s): E07-D04A; E10-A09B7; L03-G02; L03-G09E; V07-K10B

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