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Patent Number(s): CN102412496-A
Title: Non-linear optical difference technique based terahertz wave radiation source for use during e.g. medical diagnosis, has frequency crystal performing integral transform, and filter sheet filtering frequency pumping light to terahertz wave
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Abstract: NOVELTY - The source has a total reflection mirror (3) connected with a magnesium oxide and lithium niobate crystal (6). A pumping source (1) a pumping light (4) is connected with the reflection mirror by a contracting telescope system (2). The pumping light and a stoke light (5) are merged in a polarization light splitting prism (13) after combining as dual-wavelength difference frequency pumping light. A nonlinear difference frequency crystal (15) performs integral transform. A filter sheet (16) filters the dual-wavelength difference frequency pumping light to a terahertz wave.
USE - Non-linear optical difference technique based terahertz wave radiation source for use during medical diagnosis, fine spectrum analysis, photoelectron technology biological medical imaging, terahertz communication and terahertz photonics process.
ADVANTAGE - The source realizes continuous tuning output the stoke light by rotating the rotating platform, and ensures that the light and the pumping light emitted by the pumping source are merged in a polarization beam splitter as the double-wavelength difference frequency pumping source to produce dry narrow band in difference frequency a non-linear difference frequency crystal for continuously adjusting the terahertz wave. The source is compact in structure, and has less volume, and ensures continuously tunable solid-state terahertz coherent radiation source.
DETAILED DESCRIPTION - The non-linear difference frequency crystal is gallium (II) selenide or silicon germanium phosphorus 2 crystal.
DESCRIPTION DRAWING(S) - The drawing shows a schematic view a non-linear optical difference technique based terahertz wave radiation source.
Pumping source (1)
Contracting telescope system (2)
Total reflection mirror (3)
Pumping light (4)
Stoke light (5)
Magnesium oxide and lithium niobate crystal (6)
Polarization light splitting prism (13)
Nonlinear difference frequency crystal (15)
Filter sheet (16)
Derwent Class Code(s): L03 (Electro-(in)organic, chemical features electrical devices); P81 (Optics); V07 (Fibre-optics and Light Control)
Derwent Manual Code(s): L03-F; L03-G05; L03-H03; L03-X; V07-F02A; V07-F02B; V07-K03; V07-K10B1
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