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Title: Ultrapure intrinsic gallium arsenide material m-i-n diode terahertz radiation source material, consists of electrode layers, conductive film layer, gallium arsenide layer, buffer layer, substrate, and gold-germanium-nickel alloy layer

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Abstract: NOVELTY - An ultrapure intrinsic gallium arsenide material m-i-n diode terahertz radiation source material, consists of an upper electrode layer, a nickel-chromium or translucent conductive film layer, an ultrapure intrinsic gallium arsenide layer, a doped silicon n-shaped gallium arsenide buffer layer, a gallium arsenide substrate, an indium or gold-germanium-nickel alloy layer, and a lower electrode, closely connected with the upper electrode layer provided with a window. The lower electrode layer is made of gold or good conductor of metal material.

USE - Ultrapure intrinsic gallium arsenide material m-i-n diode terahertz radiation source material.

ADVANTAGE - The ultrapure intrinsic gallium arsenide material m-i-n diode terahertz radiation source material has a simple structure, can be used conveniently, and strengthens electromagnetic field and terahertz radiation. A frequency spectrum width of greater than 4 terahertz is obtained.

DETAILED DESCRIPTION - An ultrapure intrinsic gallium arsenide material m-i-n diode terahertz radiation source material, consists of an upper electrode layer, a nickel-chromium or translucent conductive film layer, an ultrapure intrinsic gallium arsenide layer, a doped silicon n-shaped gallium arsenide buffer layer, a gallium arsenide substrate, an indium or gold-germanium-nickel alloy layer, and a lower electrode, provided sequentially and closely connected with the upper electrode layer provided with a window. The lower electrode layer is made of gold or good conductor of metal material. A power supply is connected with an external femtosecond laser which emits femtosecond laser pulse irradiation to gallium arsenide layer through the window. Simultaneously, terahertz wave of the gallium arsenide layer is radiating by the intrinsic window. An INDEPENDENT CLAIM is included for manufacture of ultrapure intrinsic gallium arsenide material m-i-n diode terahertz radiation source material.

Derwent Class Code(s): L03 (Electro-(in)organic, chemical features of electrical devices); V08 (Lasers and Masers)

Derwent Manual Code(s): L03-F; V08-A01B; V08-B01

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