## 52

Accession number:12744326

Title:Directional terahertz emission from air plasma generated by linearly polarized intense femtosecond laser pulses

Authors:Jahangiri, F. (1); Hashida, M. (1); Tokita, S. (1); Nagashima, T. (2); Ohtani, K. (1); Hangyo, M. (2); Sakabe, S. (1)

Author affiliation:(1) Adv. Res. Center for Beam Sci., Kyoto Univ., Kyoto, Japan; (2) Inst. of Laser Eng., Osaka Univ., Suita, Japan

Source title: Applied Physics Express

Abbreviated source title: Appl. Phys. Exp. (Japan)

Volume:5

Issue:2

Publication date: Feb. 2012

Pages:026201 (3 pp.)

Language:English

ISSN:1882-0778

CODEN:APEPC4

Document type: Journal article (JA)

Publisher:Japan Society of Applied Physics through the Institute of Pure and Applied Physics

Country of publication:Japan

Material Identity Number:GC26-2012-005

Abstract:Terahertz (THz) radiation from air plasma produced by linearly polarized intense femtosecond laser pulses was investigated. The laser energy dependence, directionality, and polarization properties of THz waves, measured in the present experiment, differed from those in previous reports and can be explained by parametric decay of laser light to R-waves in the presence of a spontaneous magnetic field.

Number of references:18

Inspec controlled terms:air - plasma production by laser - terahertz waves

Uncontrolled terms:directional terahertz emission - air plasma generation - linearly polarized intense femtosecond laser pulses - terahertz radiation - laser energy dependence - THz wave polarization properties - laser light parametric decay - R-waves - spontaneous magnetic field

Inspec classification codes:A5250J Plasma production and heating by laser beams - A5225P Emission, absorption, and scattering of radiation in plasma

Treatment:Experimental (EXP)

Discipline: Physics (A)

DOI:10.1143/APEX.5.026201

Database:Inspec

IPC Code:H05H1/46Copyright 2012, The Institution of Engineering and Technology