491.
标题: Progress in development of two color laser diagnostics for the ITER poloidal polarimeter
作者: Kawahata, K (Kawahata, K.); Akiyama, T (Akiyama, T.); Tanaka, K (Tanaka, K.); Nakayama, K (Nakayama, K.); Okajima, S (Okajima, S.)
来源出版物: JOURNAL OF INSTRUMENTATION 卷: 7 文献号: C02002 DOI: 10.1088/1748-0221/7/02/C02002 出版年: FEB 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 10
摘要: Two color laser diagnostics using THz laser sources are under development for a high performance operation of the Large Helical Device and for future fusion devices such as ITER. So far, we have achieved high power laser oscillation lines simultaneously oscillating at 57.2 mu m (1.6 W) and 47.7 mu m (0.8 W) by using a twin optically-pumped CH3OD laser. And, we confirmed the usefulness of this two color laser operation for two-color laser interferometry in a test stand. For the measurement of the Faraday rotation angle we have developed a photo-elastic modulator (PEM) operating around 50 mu m, and performed bench tests of the polarimeter with dual PEMs and demonstrated the feasibility of the polarimeter. The achieved angular resolution is 0.01 degrees with a time resolution of 1 ms, which satisfies diagnostic requirements for q-profile measurements on ITER (0.05 deg. at 10 ms time resolution). In this symposium, recent hardware developments and simultaneous measurements of a phase shift and a rotation angle will be presented.
入藏号: WOS:000303940900002
语种: English
文献类型: Article
作者关键词: Nuclear instruments and methods for hot plasma diagnostics; Plasma diagnostics - interferometry, spectroscopy and imaging
地址: [Kawahata, K.; Akiyama, T.; Tanaka, K.] Natl Inst Fus Sci, Toki, Gifu 5095293, Japan
[Nakayama, K.; Okajima, S.] Chubu Univ, Kasugai, Aichi 4878601, Japan
通讯作者地址: Kawahata, K (通讯作者),Natl Inst Fus Sci, 322-6 Oroshi Cho, Toki, Gifu 5095293, Japan
电子邮件地址: kawahata@lhd.nifs.ac.jp
出版商: IOP PUBLISHING LTD
出版商地址: TEMPLE CIRCUS, TEMPLE WAY, BRISTOL BS1 6BE, ENGLAND
Web of Science 分类: Instruments & Instrumentation
学科类别: Instruments & Instrumentation
IDS 号: 941CQ
ISSN: 1748-0221
29 字符的来源出版物名称缩写: J INSTRUM
ISO 来源出版物缩写: J. Instrum.
来源出版物页码计数: 8