

JOURNAL OF PLASMA AND FUSION RESEARCH

The Journal of the Japan Society of Plasma Science and Nuclear Fusion Research

Vol. 87, No.1, January 2011

Prologue

New Year Message – PLASMA CONFERENCE 2011 & Plasma Science Association –

..... FUJIYAMA Hiroshi 1

Special Topic Article

Innovation of Plasma Sources for Practical Processings

— From Parallel Plate Plasma Source to New Plasma Sources —

1. Introduction TOYODA Hiroataka 3

2. Silicon Oxidation/Nitridation by Microwave Surface Wave Plasma YAMAMOTO Nobuhiko 4

3. Development of Large Area VHF Excited P-CVD and its Application to Thin Film Silicon Solar Cells
..... TAKEUCHI Yoshiaki, MASHIMA Hiroshi, NISHIMIYA Tatsuyuki, OHTSUBO Eiichiro,
YAMAUCHI Yasuhiro and TAKATSUKA Hiromu 9

4. Gate Dielectric Formation by MMT Plasma OGAWA Unryū 14

5. Large-Scaled Line Plasma Production by Microwave in Narrowed Waveguide SHINDO Haruo 18

6. Plasma Technologies for Large-Area, Low-Damage and Reactive Processes
Using Multiple Low-Inductance Antenna Modules SETSUHARA Yuichi 24

7. Conclusion TOYODA Hiroataka 34

Lecture Note

Advanced Methane-Utilization Technology

4. Fuel Cells, In Relation to The Advanced Methane-Utilization Technology SATO Kazunori 36

5. Conclusion HARADA Nob. 42

Lecture Note

Introduction of Pulsed Power Technology

1. Introduction JIANG Weihua 44

2. Brief History and Operation Principle of Pulsed Power JIANG Weihua 46

Contributed Paper

Simulation on Ablation Plumes in Liquid Wall Chamber of Laser Fusion Reactor

..... FURUKAWA Hiroyuki and NORIMATSU Takayoshi 51

The JSPF Award for Excellent Presentation by Young Scientist 56

PFR Abstracts 58

Mourning 59

Information 60

Plasma & Fusion Calendar 62

Announcement 63

Cover

Multiple-pass Thomson scattering system is believed to be useful for improving the S/N ratio and for detecting temperature anisotropy. We have analyzed a system consisting of two confocal spherical mirrors, and estimated the maximum roundtrip number for a practical configuration. A proof-of-principle experiment was carried out using a He-Ne laser. The photograph shows the laser spots (numbered in order) on one of the two mirrors. (Junichi HIRATSUKA *et al.*, Plasma and Fusion Research Vol.5, 044 (2010) <http://www.jspf.or.jp/PFR/>)

Published Monthly by

The Japan Society of Plasma Science and Nuclear Fusion Research

3-1-1, Uchiyama, Chikusa-ku, Nagoya 464-0075, Japan

Tel 052-735-3185, Fax 052-735-3485, E-mail: plasma@jsofr.jp, URL: <http://www.jspf.or.jp/>