

JOURNAL OF PLASMA AND FUSION RESEARCH

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

Vol. 83, No.2, February 2007

Special Topic Article

Invitation to Plasma Processings under Micro-Gravity Environment

1. Introduction MIENO Tetsu 129
2. Current Status of Microgravity Experiments in Complex Plasmas in Japan and Foreign Countries
..... ADACHI Satoshi, TAKAYANAGI Masahiro and YODA Shin-ichi 130
3. Physics and Chemistry of Low-Temperature Plasma under Microgravity ISHIKAWA Masamichi 134
4. Containerless Materials Processing and Related Experimental Techniques KURIBAYASHI Kazuhiko 139
5. Diamond Synthesis by Plasma CVD in Space ISHIKAWA Masamichi 144
6. Production of Carbon Clusters by Means of Convection-Free Arc Discharge MIENO Tetsu 151
7. Effect of Four Driving Forces (Plasma Stream, Electromagnetic Force, Surface Tension and Buoyancy)
on Convection in Molten Pool FUJII Hidetoshi and NOGI Kiyoshi 157
8. Microgravity Experiment Facilities and Application KOGURE Kazumi 161

Lecture Note

Research Guidance to Fast-Flowing Plasmas and Shock Waves

2. Fundamentals of Plasma Flow Diagnostics
- 2.1 Introduction ANDO Akira and KADO Shinichiro 167
- 2.2 Plasma Flow Measurement — Probe Method — ANDO Akira 169
- 2.3 Plasma Flow Measurements — Spectroscopic Methods — KADO Shinichiro 176

Series

Let Us Start Parallel Processing Using High Performance Fortran !

7. Let Us Practice HPF (1) HAYASHI Yasuharu 188

PFR Abstracts 193

Information 194

Announcement 200

Plasma & Fusion Calendar 201

List of Newly Arrived Publications, NIFS 202

Cover

Spatial distributions of energetic protons emitted from the triangular target irradiated by the ultra-intense laser pulse (2×10^{18} W/cm²). (Left) Zonal patterns are observed in the perpendicular directions to the edges of upward and downward triangular targets in the low energy (~ 0.95 MeV) region. (Right) Circular pattern is observed in the high energy (~ 3.2 MeV) region at the target normal direction in both cases. (Toshinori YABUUCHI *et al.*, Plasma and Fusion Research Vol.2, 003 (2007). <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@jspf.or.jp, URL: <http://www.jspf.or.jp/>