

JOURNAL OF PLASMA AND FUSION RESEARCH

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

Vol. 88, No.1, January 2012

Prologue

New Year Address	OGAWA Yuichi	1
------------------------	--------------	---

Special Topic Articles

Ion Acceleration with Intense Laser Light and its Application		
1. Introduction	KONDO Kiminori	3
2. Laser-Driven Ion Acceleration with Thin-Foil Target	NISHIUCHI Mamiko	5
3. Laser-Driven Ion Acceleration using Near-Critical Density Plasmas		
3.1 Laser-Driven Ion Acceleration using Cluster Targets	FUKUDA Yuji	13
3.2 Magnetic Vortex Ion Acceleration	NAKAMURA Tatsufumi	18
4. Laser-Driven Ion Acceleration in the Radiation Pressure Dominated Regime	BULANOV Sergei V.	21
5. Laser-Driven Proton Beams Applied to Radiobiological Experiments	YOGO Akifumi	25
6. Summary	KONDO Kiminori	32

Lecture Note

Construction and Use of Atomic and Molecular Databases		
1. Introduction — Overview of Atomic and Molecular Databases and their Applications for Plasma Research		
.....	MURAKAMI Izumi, OSAKABE Masaki, IKEDA Katsunori, NISHIURA Masaki, ODA Akinori, SUGAWARA Hirotake and HAMAGUCHI Satoshi	35
2. Basic Knowledge of Atomic and Molecular Data	KATO Daiji	48

Information		52
-------------------	--	----

Plasma & Fusion Calendar		56
--------------------------------	--	----

The JSPF Award for Excellent Presentation by Young Scientist		58
--	--	----

PFR Abstracts		59
---------------------	--	----

Announcement		60
--------------------	--	----

Cover

Liquid-cathode atmospheric microdischarges with a helium gas flowing through a nozzle anode, of which inner and outer diameters were 0.5 and 0.8 mm, respectively (Exposure time of 20 ms). (a) DC discharge with the current of 4 mA. (b) Combined DC and pulsed discharges by applying pulsed voltages to the DC discharge. Its peak pulsed current and peak instantaneous power became 13.5 A and 19 kW, respectively. (Jun KIKUCHI *et al.*, Plasma and Fusion Research Vol. 6, 1201154 (2011) <http://www.jspf.or.jp/PFR/>)