Publisher Kenji Kajiyama

Editors

Motoichi Ohtsu

(Editor in Chief) (Tokyo Institute of Technology)

Yoshiji Horikoshi

(Waseda University)

Sub-Editors

Nobuhiro Hata

(AIST)

Adarsh Sandhu

(Tokai University)

Hiromitsu Hada

(NEC Corp.)

Associate Editors

Kazuyuki Hirose

(Institute of Space and Astronautical Science)

Tohru Honda

(Kogakuin University)

Takashi Kobayashi

(NTT Corp.)

Hiro Munekata

(Tokyo Institute of Technology)

Shinji Okamoto

(Japan Broadcasting Corp.)

Hidemi Shigekawa

(University of Tsukuba)

Robin Sowden

(Shibaura Institute of Technology)

Hiroyuki Takahashi

(University of Tokyo)

Advisory Committee

Masakazu Ichikawa

(JRCAT)

Yasuhiko Arakawa

(University of Tokyo)

Takashi Mizutani

(NEC Corp.)

Hiroshi Ishikawa

(FESTA)

Editorial Office

Japan Society of Applied Physics

1-12-3 Kudan-kita, Chiyoda-ku, Tokyo 102-0073

Telephone: +81-3-3238-1045

Fax: +81-3-3221-6245

Electronic mail: editor_jsapi@jsap.or.jp

World Wide Web

http://www.jsap.or.jp

INTERNATIONA

January 2002

Contents

- What is "JSAP"?
- Aiming at a Breakthrough 3

Toshivuki Iida

Division Activities of Radiation Science Present and Future Views

of Division of Radiation Science

Cutting Edge 1 4

> By Hideo OHNO, Fumihiro MATSUKURA and Yuzo OHNO **General Report**

Semiconductor Spin Electronics

Cutting Edge 2

Mitsuru Uesaka, Takahiro Watanabe, and Nasr Hafz Ultrashort Electron Beam Generation and Diagnosis by Linear Accelerator

Cutting Edge 3 22

> Toshiharu Saiki and Yoshihito Narita Nano-Optical Imaging Spectroscopy: Recent Advances in Near-field Scanning **Optical Microscopy**

Past, Present and Future 30

> Yoshihiro Hamakawa New Energy Option for 21st Century Recent Progress in Solar Photovoltaic **Energy Conversion**

- 23rd ISAP Awards 36
- **Young Scientist** 37
- **Conference Report** 39
- JSAP Information 40
- **Meetings Calendar** 42
- **IPAP** 44



Designing of Fig. 2 in Past, Present and Future