

FINAL PROGRAM

U. S. - Japan Joint Seminar on Plasma Spectroscopy

Kyoto, May 7 - 11, 1979

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<u>May 7 (Monday), Kyodai Kaikan</u>	
<u>Registration</u> (10:00 - 11:00)	
<u>Opening Session</u> (11:00 - 12:00)	
Welcoming Remarks	
Response	
Review Talks	
(Chairman: K. Mori)	
1. Hans R. Griem (University of Maryland)	
"Plasma Spectroscopy Research in the US"	
2. Kuniya Fukuda (Kyoto University)	
"Plasma Spectroscopy Research in Japan"	
12:00 - 14:00 Lunch	
<u>Afternoon Session</u> (14:00 - 17:00)	
(Chairman: J. Fujita)	
1. Einar Hinnov (PPL, Princeton University)	
"Radiation of Highly Ionized Atoms in the Diagnostics of Tokamak Plasmas" (60min.)	1
Discussion and Coffee Break (15:00 - 15:40)	
(Chairman: H. W. Moos)	
2. Satoshi Kasai and Akimasa Funahashi (Japan Atomic Energy Research Institute)	
"Behavior of Pseudo-Continuum Emission from High-Z Im- purities in DIVA and JFT-2 Tokamaks" (40min.)	4
3. Junji Fujita, Kuninori Sato, Kiyoshi Kadota, Masamoto Otsuka (IPP, Nagoya University), and Kazuo Mori (The Institute of Physical and Chemical Research)	
"Spectroscopic Study of Impurities in High Density Regime of JIPP T-II Tokamak Plasma" (40min.)	8
18:00 - 20:00 Banquet (Holiday Inn)	

May 8 (Tuesday), Kyodai Kaikan

Morning Session (9:00 - 12:00)

(Chairman: A. Funahashi)

1. Roger D. Bengtson, J. C. Wiley and F. L. Hinton
(University of Texas)
"Spectroscopic Measurements of Atomic Parameters and
Impurity Transport in a Tokamak" (40min.) 12
2. H. Warren Moos (The Johns Hopkins University)
"Extreme Ultraviolet Diagnostics of High Temperature
Plasmas" (40min.) 13

Discussion and Coffee Break (10:20 - 10:40)

(Chairman: K. Nishi)

3. Eijiro Hiei (Tokyo Astronomical Observatory)
"Density Diagnostics of a Compact Flare Plasma by XUV
Lines: (25min.) 17
4. Katsuo Tanaka (Tokyo Astronomical Observatory)
"Spectroscopic Diagnostics of Transient Flare Plasma
by X-Ray Iron Lines" (15min.) 18
5. Darrell L. Judge (University of Southern California)
"Extreme Ultraviolet Observations of Astrophysical Plasma"
(40min.) 19

12:00 - 14:00 Lunch

Afternoon Session (14:00 - 17:40)

(Chairman: H. R. Griem)

1. Kenzo Miyazaki, Takuzo Sato and Hiroshi Kashiwagi
(Electrotechnical Laboratory)
"Second Harmonic Generation in Sodium Vapor by Pico-
second Laser Pulses" (30min.) 22
2. B. Yaakobi (University of Rochester)
"X-Ray Spectroscopy and Interferometry as Diagnostics
in Laser Fusion" (40min.) 24
3. Yoshiaki Kato and Takatomo Sasaki (Osaka University)
"Plasma Spectroscopy for Laser Fusion Research at Osaka
University" (40min.) 25

Discussion and Coffee Break (15:50 - 16:10)

(Chairman: Y. Kato)

4. Kenneth B. Mitchell (Los Alamos Scientific Laboratory)
"X-Ray Spectroscopy of Laser-Produced High Density Plasmas" (40min.) 29
5. Naohiro Yamaguchi, Jun-ichi Mizui, Junji Fujita (IPP, Nagoya University), and Makoto Shiho (Japan Atomic Energy Research Institute)
"X-Ray Spectroscopy of Laser-Produced Plasma" (30min.) 41
6. Takako Kato (IPP, Nagoya University) and Takashi Fujimoto (Kyoto University)
"Spectroscopic Diagnostics of a Laser-Produced Aluminum Plasma" (20min.) 45

May 9 (Wednesday), Kyodai Kaikan

Morning Session (9:00 - 12:00)

(Chairman: K. Ishii)

1. Steven T. Manson (Georgia State University)
"Spectral, Scattering, and Structural Properties of Positive Atomic Ions" (40min.) 49
2. W. L. Wiese (National Bureau of Standards)
"Radiation Data for Highly Ionized Atoms--Status and Needs" (40min.) 53

Discussion and Coffee Break (10:20 - 10:40)

(Chairman: S. T. Manson)

3. Keishi Ishii (Kyoto University)
"Systematic Trends of Lifetimes and Oscillator Strengths for $\Delta n=0$ Transitions in Multiply Charged Ions along Iso-electronic Sequences" (20min.) 54
4. I. Martinson (Lund University, Sweden)
"Studies of Energy Levels and Transition Probabilities in Highly Ionized Atoms Using Ion-Beam Atomic Spectroscopy" (40min.) 58
5. Comment
Myron H. Miller (United States Naval Academy and University of Maryland) and Roger D. Bengtson (University of Texas)
"Oscillator Strength Trends in Group IVb Homologous Ions" (10min.) 59

6. Yukikazu Itikawa (IPP, Nagoya University)
 "Activities on Atomic Data for Fusion of Research
 Information Center, Institute of Plasma Physics"
 (20min.) 60

12:00 - 13:00 Lunch

Afternoon

Visit to Institute of Laser Engineering, Osaka University

May 10 (Thursday), Kyoto International Conference Hall

Morning Session (9:00 - 12:00)

(Chairman: H. Narumi)

1. Toshiatsu Oda, Tadashi Ōgo and Yoshifumi Itō (Hiroshima University)
 "Spectroscopic Measurements of Fluctuating Field and
 Ion Temperature in a Theta Pinch Plasma" (40min.) 62

2. Yō Mizuta and Akiko Ohno (Hokkaido University)
 "Line Shape of Optical Satellites in a Magnetized Turbu-
 lent Plasma" (40min.) 66

Discussion and Coffee Break (10:20 - 10:40)

(Chairman: W. L. Wiese)

3. Hans R. Griem (University of Maryland)
 "Stark-Broadened X-Ray Lines in Laser Fusion Research"
 (40min.) 70

4. Kenji Yamamoto and Hajime Narumi (Hiroshima University)
 "A Quantum Scattering Approach to the Complex Level Shift
 of Spectral Lines in Plasmas" (40min.) 71

12:00 - 14:00 Lunch

Afternoon Session (14:00 - 17:15)

(Chairman: T. Fujimoto)

1. Hidetoshi Suemitsu and Kuniya Fukuda (Kyoto University)
 "XUV Spectroscopy of Impurity Ions in Z-Pinch He Plasma"
 (25min.) 74

2. Rei Okasaka and Kuniya Fukuda (Kyoto University)
 "Spectroscopic Studies of Collisions between Rare-Gas
 Ion or Light-Atom Ion and Rare gas at 1-10 keV Energy
 Range" (15min.) 78

3. R. C. Isler (Oak Ridge National Laboratory)
 "Spectral Excitation due to Charge Transfer" (40min.) 80
- Discussion and Coffee Break (15:20 - 15:40)
- (Chairman: E. Hinnov)
4. Masamoto Otsuka, Kuninori Sato, Kazushige Ishii, Junji Fujita, Minoru Hosokawa (IPP, Nagoya University), Taizo Sasaki, Katsumi Sakurai, Hideki Maezawa (The University of Tokyo), Toshiatsu Oda, Ryuiti Ikee (Hiroshima University), and Hidenao Sugawara (Tohoku University)
 "Stationary Population Inversion in a Recombining Plasma in Contact with a Neutral Gas" (40min.) 84
5. Comment
 Kuninori Sato, Junji Fujita, Shigeru Morita and Masamoto Otsuka (IPP, Nagoya University)
 "The Branching Ratio of the Pair of HeII 243A and HeII 4686A" (15min.) 88
6. Takashi Fujimoto and Kuniya Fukuda (Kyoto University)
 "Population Density of Excited Ions in a Plasma" (40min.) 91

May 11 (Friday), Kyoto International Conference Hall

Morning Session (9:00 - 12:00)

(Chairman: D. L. Judge)

1. Masatoshi Nakamura and Yoshihiro Iida (University of Tsukuba)
 "Photoelectron Spectroscopy of Several Gases Using He Resonance Lines" (40min.) 95
2. James A. R. Samson, T. Masuoka, and P. Pareek (University of Nebraska)
 "Photoionization Mass Spectroscopy and Photoelectron Spectroscopy of Atoms and Molecules" (40min.) 99

Discussion and Coffee Break (10:20 - 10:40)

(Chairman: J. A. R. Samson)

3. Kozo Ando, Kiyohiko Okazaki, Suck Hee Be and Kazuo Mori (The Institute of Physical and Chemical Research)
 "Spectroscopic Study by 10m Grazing Incidence Spectrograph with Vacuum Spark" (40min.) 100

4. Comments

H. Warren Moos (The Johns Hopkins University)

"Extreme Ultraviolet Instrumentation and Photometric Calibration" (15min.)

Takeshi Namioka (Tohoku University)

"Focussing Property of a Concave Grating in a Grazing Incidence Spectrometer" (20min.)

12:00 - 14:00 Lunch

Afternoon (14:00 - 15:30)

Informal Discussions in small groups

on "Instrumentation of XUV Spectroscopy" and

"Radiation Processes in Laser Plasmas"

16:00 - 17:00 Beer Party (Holiday Inn)

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LIST OF PARTICIPANTS AND OBSERVERS

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