30aA1

9:50 - 10:20 Opening Ceremony

Chairman: K. Ishiguro (University of Tokyo)

Speakers

Y. Fujioka (Chairman of the Organizing Committee of the Conference)

J. Itoh (President, Physical Society of Japan)

W. C. Price (King's College)

30aA2

10:20 - 11:00 Opening Lecture

Chairman: Y. Toyozawa (University of Tokyo)

U. Fano (University of Chicago)

Inner-shell photoabsorption in atoms, molecules and crystals. 40

11:00 - 11:30 Intermission

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11:30 - 12:30 Solid State

Chairman: M. Cardona (Brown University)

1. F. C. Brown (University of Illinois)

Solid state spectroscopy with use of a storage ring light source. 30

2. Y. Toyozawa (University of Tokyo)

Giant, subgiant and fine structures in the inner-shell photoabsorption spectra of solids. 30

12:30 - 14:00 Lunch

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14:00 - 15:30 Alkali Halides - 1

Chairman: F. C. Brown (University of Illinois)

1. C. Sanches and M. Cardona (Brown University)
   Piezobirefringence in the vacuum ultraviolet : Alkali halides and alkaline earth fluorides. 15

2. T. Murata and S. Hashimoto (Kyoto University of Education)
   Intrinsic absorption of LiBr-NaBr solid solutions. 15

3. Y. Petroff, R. Pinchaus, C. Chekroun and M. Balkanski (University of Paris)
   Excitonic structures in alkali halides. 15

4. Y. Nakai, H. Nakagawa, M. Itoh and H. Asahina (Kyoto University)
   Luminescence of localized excitons in NaCl-NaBr solid solutions. 15

5. N. Kristianpoller and M. Israeli (Tel-Aviv University)
   Thermoluminescence of alkali-halide crystals excited by vacuum ultraviolet radiation. 15

6. R. Onaka and H. Onuki (Kyoiku University)
   Photoluminescence and electrophotoluminescence of alkali halide phosphors. 15

15:30 - 15 :50 Intermission

30pA2

15:50 - 17:35 Techniques and Instrumentation - 1

Chairman: J. A. R. Samson (University of Nebraska)

1. Y. Cauchois (University of Paris)

   Research means and lines of interest in soft x-ray and x-u. v. spectroscopy at the Laboratoire de Chimie Physique de l'Université de Paris VI. 30

2. E. Dietz, U. Gerhardt and H. Becker (University of Frankfurt)

   Properties of laboratory-built channel-electron multiplier : its use as a detector in the vacuum u. v. 15

3. F. Masuda and J. Fukuda (Kyoiku University)

   Absolute intensity measurements in the vacuum ultraviolet region with a thermocouple.

4. M. Schledermann and M. Skibowski (University of Hamburg, University of München)

   Ellipsometry in the extreme ultraviolet. 15

5. R. Abjean, A. Mehu and A. Johannin-Gilles (University of Brest)

   Pérot-Fabry interferometry in vacuum ultraviolet. 15

6. R. W. Waynant and R. C. Elton (Naval Research Laboratory)

   High power gas lasers for wavelengths shorter than 2000 A. 15

7. J. N. Fox, J. E. G. Wheaton and E. W. Lewis (Imperial College)

   The B. R. V. continuum source. 15

8. J. A. Muscari (Martin Marietta Corporation)

   Optical surface contamination analysis reflectometer.

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9:30 - 10:40 Techniques and Instrumentation - 2

Chairman: T. Sagawa (Tohoku University)

1. B. Vodar and J. Romand (Laboratory of Bellevue)

   General review on vacuum u. v. instrumentation and techniques at CNRS Bellevue. 40

2. K. Goto, M. Seya, T. Namioka and S. Morizumi (Shinshu University, Kyoiku University)

   The theory of the concave grating. 15

3. A. Johannin-Gilles (University of Brest)

   Concave grating aberrations and focalisation of a monochromator in vacuum ultraviolet. 15

10:40 - 11:00 Intermission

11:00 - 12:15 Techniques and Instrumentation - 3

Chairman: B. Vodar (Laboratory of Bellevue)

1. T. Oshio and E. Ishiguro (Osaka City University)
   Stigmatic conditions of the spherical concave grating. 15

2. M. Pouey (Laboratory of Bellevue)
   Design of far ultraviolet corrected monochromators. 15

3. R. Kato, H. Yamashita, M. Watanabe, T. Ishii, S. Sato, T. Iizuka, M. Sawada and K. P. Miyake (Kyoto University, Tohoku University, Tokyo Metropolitan University, Kyoiku University)
   A soft x-ray monochromator for synchrotron orbital radiation. 15

4. U. Gerhardt, E. Dietz and N. Rehfeld (University of Frankfurt)
   An integrated optical system for the vacuum u. v. region. 15

5. C. H. Pruett, N. C. Lien and J. D. Steben (University of Wisconsin)
   Vacuum ultraviolet monochromator developments at the University of Wisconsin Physical Sciences Laboratory. 15

12:15 - 13:45 Lunch

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13:45 - 15:10 Plasmon

Chairman: W. Steinmann (University of München)

1. E. T. Arakawa (Oak Ridge National Laboratory)

   Experimental studies of surface plasmons. 40

2. R. H. Ritchie (Oak Ridge National Laboratory)

   Theoretical developments of plasmons in solids. 15

3. K. L. Kliewer, R. Fuchs, J. M. Keller and P. B. Moore (Iowa State University)

   Nonlocal effects in the optical properties of metals. 15

4. A. Daudé, A. Savary and S. Robin (University of Rennes)

   Effect of increasing surface roughness on the excitation by photons of surface plasmon of aluminium. 15

15:10 - 15:30 Intermission

15:30 - 17:00 Insulators - 1

Chairman: S. Nagakura (University of Tokyo)

1. H. Yamashita and R. Kato (Kyoto University)
   Optical properties of sodium nitrate in the vacuum ultraviolet region. 15

2. G. Pastori-Parravicini and L. Resca (University of Pisa)
   Relationship between electronic states in free water molecule and cubic ice. 15

3. R. Klucker, M. Skibowski and W. Steinmann (University of München)
   Optical anisotropy of graphite in the 3 - 40 eV photon energy range. 15

4. M. Brith and R. Lubart (Bar-Ilan University)
   Reflection and absorption spectra of the higher $\pi - \pi^*$ transition of solid benzene. 15

5. E. E. Koch and A. Otto (University of München)
   Optical anisotropy of anthracene single crystals for excitation energies from 4.5 to 11.5 eV. 15

6. Y. Nakai, K. Matsuda, T. Takagaki and T. Ideta (Japan Atomic Energy Research Institute)
   Optical properties of polystyrene and styren-MMA copolymers in the vacuum ultraviolet. 15

Wednesday, September 1

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9:30 - 10:50 Molecules - 1

Chairman: W. C. Price (King's College)

1. A. E. Douglas (National Research Council of Canada)

   High resolution studies of molecular spectra. 40

2. F. J. Comes, G. Schumpe and U. Wenning (University of Bonn)

   Radiationless transitions in the uv-spectrum of molecular hydrogen. 40

10:50 - 11:10 Intermission

11:10 - 12:50 Solid Rare Gases

Chairman: D. L. Ederer (National Bureau of Standards)

1. R. Haensel (University of Hamburg)
   Optical properties of solid rare gases in the extreme ultraviolet. 40

2. U. Roessler and O. Schütz (University of Marburg)
   The effect of density of states and electron-hole interaction on the optical constants of solid rare gases. 15

3. R. Haensel, E. E. Koch, U. Nielsen and M. Skibowski (University of Hamburg, University of München)
   Reflection spectroscopy of condensed gases in the extreme ultraviolet. 15

4. N. Nagasawa, T. Nanba and T. Karasawa (Tohoku University)
   Exciton absorption in Ar-Xe solid solution. 15

5. O. Cheshnovsky, B. Raz and J. Jortner (Tel-Aviv University)
   Vacuum u. v. α-induced luminescence phenomena in rare gas liquids and solid alloys. 15

12:50 - 14:20 Lunch

14:20 - 15:50 Molecules - 2

Chairman: A. E. Douglas (National Research Council of Canada)

1. S. Takezawa (Air Force Cambridge Research Laboratories)

   Rydberg series of the HD molecule. 15

2. J. A. R. Samson (University of Nebraska)

   Observation of double electron excitation in H_2 by photoelectron spectroscopy. 15

3. K. Yoshino and Y. Tanaka (Air Force Cambridge Research Laboratories)

   Emission band spectrum of mixture of He and Ar in the vacuum-uv region. 15

4. V. H. Dibeler, J. A. Walker, K. E. McCulloh and H. M. Rosenstock (National Bureau of Standards)

   Effect of hot bands on the ionization threshold of some diatomic halogen molecules. 15

5. G. L. Weissler, M. Ogawa and D. L. Judge (University of Southern California)

   Vacuum u. v. spectroscopy with cascade arcs ; Absorption series of CO and its photoionization fluorescence. 15

6. M. Nakamura, Y. Morioka, T. Hayaishi, E. Ishiguro and M. Sasanuma (Kyoiku University, Osaka City University)

   Absorption spectra of several gases in the 20 to 100 A region. 15

15:50 - 16:10 Intermission

16:10 - 17:55 Molecules - 3

Chairman: V. H. Dibeler (National Bureau of Standards)

1. S. Iwata and S. Nagakura (Institute of Physical and Chemical Research)

   Total and differential cross sections of photoionization calculated for some simple molecules. 15

2. W. C. Price and A. W. Potts (King's College)

   The photoelectron and vacuum u. v. spectra of the hydrides of the elements in groups IV, V, VI and VII. 15

3. M. Sasanuma, E. Ishiguro, Y. Morioka and M. Nakamura (Osaka City University, Kyoiku University)

   Absorption cross sections and ionization efficiencies of several gases in the 300-1000 A region. 15

4. V. L. Carter (Aerospace Corporation)

   High resolution N_2 absorption studies from 730 to 980 A. 15

5. H. Hertz and W. Sroka (University of Hamburg)

   Investigation of electron collisional processes in atomic and molecular gases by means of vuv spectroscopy. 15

6. M. Yoshino, J. Takeuchi, H. Suzuki and K. Wakiya (Shibaura Institute of Technology, Sophia University)

   Absorption and photoionization cross sections of aromatic hydrocarbons in the 600 - 2200 A wavelength region. 15

7. E. E. Koch, A. Otto and M. Skibowski (University of München)

   Optical investigation of vapours of hydrocarbons in the vuv. 15

14:20 - 15:50 Alkali Halides - 2

Chairman: U. Gerhardt (University of Frankfurt)

1. M. Watanabe, Y. Nakamura, S. Sato and Y. Nakai
(Kyoto University, Fukui University,
Tohoku University)

Cl^-- $L_{II,III}$ absorption in solid solutions of alkali chlorides. 15

2. H. Saito, S. Saito and R. Onaka (Kyoiku University)

Multiplet exciton bands of cesium halides in the extreme ultraviolet region. 15

3. J. -Y. Roncin and E. Boursey (Laboratory of Bellevue)

Absorption spectra of cesium halides and KCl down to 20K, from 12 to 25 eV. 15

4. A. Ejiri, M. Watanabe, H. Saito, H. Yamashita, T. Shibaguchi H. Nishida and S. Sato
(University of Tokyo, Kyoto University,
Kyoiku University, Tohoku University)

Absorption spectra of potassium and rubidium halides in the extreme ultraviolet. 15

5. D. Blechschmidt, M. Skibowski and W. Steinmann
(University of München)

Photoemission studies of the decay of core excitons in alkali halides. 15

6. Y. Iguchi, H. Sugawara and T. Sasaki
(Kyoiku University, Nagoya University,
University of Tokyo)

Photoelectric emission of alkali halides. 15

15:50 - 16:10 Intermission

16:10 - 17:55 Insulators - 2

Chairman: R. Haensel (University of Hamburg)

1. Y. Onodera (Kyoto Univèrsity)
   Interference of exciton with continuum absorption. 15

2. T. Miyakawa (Defence Academy)
   Effect of double-exciton excitation on the optical properties of insulators. 15

3. M. Elango and A. Saar
   (Institute of Physics and Astronomy, Estonia)
   Some regularities in the $Cl^{-}L_{2,3}$ absorption spectra of chlorides. 15

4. A. Couget, L. Martin and F. Pradal
   (Université Paul Sabatier)
   Optical properties of some layer type crystals (TiS_2, $TiSe_2$, $FeCl_2$, $FeBr_2$, $MnBr_2$) in the 2 to 10 eV range. 15

5. T. Ishii, S. Sato, I. Nagakura, T. Matsukawa
   Y. Sakisaka and T. Sagasa (Tohoku University)
   Ultraviolet and soft x-ray absorption spectra of some metal chlorides. 15

6. J. R. Stevenson, M. Zivits, H. Ellis and R. Bartlett
   (Georgia Institute of Technology)
   Reflectivity of $Cd_x\ Zn_{3-x}\ As_2$ semiconductor alloy systems. 15

7. Y. Hayasi and S. Kiyono (Tohoku University)
   L-emission spectra of silicon in silicon element, SiC, Si_3N_4, SiO_2 and silicides. 15

8. L. Pajasová (Czechoslovak Academy of Sciences)
   Optical properties of GeS in vuv region.

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9:30 - 11:10 Metal Vapors

Chairman: U. Fano (University of Chicago)

1. G. V. Marr (Reading University)

   Photoionization cross-section measurements on metal vapours. 40

2. D. L. Ederer, T. Lucatorto and R. P. Madden (National Bureau of Standards)

   Study of autoionizing spectra in metallic vapors. 15

3. R. Haensel, K. Radler, B. Sonntag and H. W. Wolff (University of Hamburg)

   Photoabsorption of atomic sodium in the xuv. 15

4. R. Lincke (University of Kiel)

   New autoionizing lines in the vacuum ultraviolet spectra of Cu I, Ag I and Au I as determined by photoionization and emission methods. 15

5. A. Carillon, P. Jaeglé, G. Jamelot, A. Sureau, P. Dhez and M. Cukier (University of Paris)

   Experimental evidence for the possible existence of a stimulated emission in the extreme uv range. 15

11:10 - 11:30 Intermission

11:30 - 13:00 Metals and Alloys

Chairman: E. T. Arakawa (Oak Ridge National Laboratory)

1. W. R. Hunter (Naval Research Laboratory)

   Comparison of the xuv reflectance spectra of evaporated films of some second and third series transition metals for wavelengths less than 2000 A. 15

2. T. Sasaki and M. Inokuti (Argonne National Laboratory)

   Optical constants of aluminum. 15

3. W. Gudat and C. Kunz (University of Hamburg)

   Optical properties of some alloys in the vacuum ultraviolet. 15

4. S. Yamaguchi, S. Sato, E. Ishiguro, O. Aita, T. Hanyu and H. Koike (Tokyo Metropolitan University, Tohoku University, Osaka City University, Miyagi University of Education)

   Al-$L_{2,3}$ absorption spectrum of Al-(3d) transition metal alloys. 15

5. T. O. Tuomi and B. Sonntag (Helsinki University of Technology, University of Hamburg)

   Investigation of the conduction band of tellurium. 15

6. I. Nagakura, O. Aita, K. Ichikawa, S. Suzuki, S. Kono, T. Ishii and T. Sagawa (Tohoku University, Miyagi University of Education)

   Optical and photoelectrical studies of the electronic energy state of lanthanum, cerium and yttrium in the soft x-ray region. 15

13:00 - 14:30 Lunch

2pC1

14:30 - 15:45 Photoemission

Chairman: G. L. Weissler (University of Southern California)

1. B. J. Waclawski, R. Y. Koyama, L. R. Hughey and R. P. Madden (National Bureau of Standards)

   Photoemission studies of surface states in W and bulk states in Au and Al. 15

2. Y. Harada, M. Kochi, T. Hitooka and H. Inokuchi (University of Tokyo)

   Photoemission from organic crystals in the vuv region. 15

3. S. Robin-Kandare, A. Divrechy and J. Robin (University of Montpellier)

   Photoelectric properties of GaSb between 7 and 25 eV. 15

4. C. J. Vesely and D. W. Langer (Aerospace Research Laboratories)

   X-ray induced electron emission studies in semiconducting compounds. 15

5. C. J. Vesely, R. L. Hengehold and D. W. Langer (Aerospace Research Laboratories)

   UV photoemission measurements of the upper d-levels in the IIB-VIA compounds. 15

6. K. Maeda and K. Hoshino (Electro Chemical Laboratory, Kokusai Electric Co., Ltd.)

   X-ray photoelectron spectra of metals and alloys.

15:45 - 16:05 Intermission

16:05 - Techniques and Instrumentation - 4

Chairman: T. Sasaki (University of Tokyo)

1. E. M. Rowe, R. N. Dexter, J. D. Steben and R. A. Otte (University of Wisconsin)

   The operation of the University of Wisconsin, Physical Sciences Laboratory, synchrotron radiation facility. 15

2. D. Stuck and B. Wende (Physikalisch-Technische Bundesanstalt)

   Photometric comparison between two calculable vacuum-uv standard radiators : synchrotron radiation and plasma blackbody radiation. 20

3. D. Stuck and B. Wende (Physikalisch-Technische Bundesanstalt)

   Measurement of transition probabilities of CI multiplets between 170 nm and 250 nm by means of arc plasma radiation and synchrotron calibrated secondary standard lamps.

4. W. R. Ott, P. Fieffe-Prevost and W. L. Wiese (National Bureau of Standards)

   Vacuum ultraviolet radiometry with a stabilized hydrogen arc. 15

Summary Talk

Chairman: T. Sasaki (University of Tokyo)

G. L. Weissler (University of Southern California)