

SATURDAY SEPTEMBER 10

Morning

HOT ELECTRONS (9:00-12:40)

- I-10a-1** Some Aspects of Non-Ohmic Conduction
 E.G.S. Paige (9:00-9:50)
- I-10a-2 Non-Ohmic Behaviour and Oscillation Phenomena in
 ZnO Single Crystals
 N.I. Meyer, M.H. Jørgensen and E. Mosekilde .. (10:00-10:20)
- I-10a-3 Non-Linear Galvanomagnetic Effects Due to Hot
 Electrons in n-Type InSb in the Quantum Limit
 N. Kotera, K.F. Komatsubara and E. Yamada .. (10:20-10:40)
- I-10a-4 Energy Relaxation and Intervalley Relaxation of
 Hot Electrons in n-Type Germanium
 K. Seeger and D. Schweitzer (11:00-11:20)
- I-10a-5 Hot Carriers and the Path Variable Method
 H.F. Budd (11:20-11:40)
- I-10a-6 Monte Carlo Calculation of Hot Electron Problems
 T. Kurosawa (11:40-12:00)
- I-10a-7 Energy Losses by Hot Electrons in Solids:
 A Semiclassical Approach
 A. Rose (12:00-12:20)
- I-10a-8 Avalanche Multiplication in Ge and GaAs p-n
 Junctions
 R.A. Logan and S.M. Sze (12:20-12:40)
- I-10a-9† High Field Mobility of Photoelectrons in CdS
 M. Onuki and K. Shiga

** review paper

† read by title

SATURDAY SEPTEMBER 10

Morning

OPTICAL PROPERTIES -Lattice- (10:00-12:20)

- II-10a-1* The Phenomenological Interpretation of the Second Order Raman and the Two Phonon Infrared Absorption Spectra
F.A. Johnson and C.T. Sennett (10:00-10:30)
- II-10a-2 Far Infrared Lattice Bands in Indium Antimonide
D.L. Stierwalt (11:00-11:20)
- II-10a-3 Optically-Active Multiphonon Processes in II-VI Semiconductors
S.S. Mitra (11:20-11:40)
- II-10a-4 Localized Modes of Substitutional Impurities in Intermetallic Compounds
S.D. Smith, R.E.V. Chaddock and A.R. Goodwin (11:40-12:00)
- II-10a-5 Infrared Absorption of Localized Vibration Due to Lithium in Zinc Selenide and Cadmium Sulfide
A. Mitsuishi, A. Manabe, H. Yoshinaga, S. Ibuki and H. Komiya (12:00-12:20)

* invited paper

SATURDAY SEPTEMBER 10

Afternoon

ELECTRON-PHONON INTERACTION (14:00-18:00)

- I-10p-1 On Amplification of Hypersound and Space Charge Waves in Semiconductors
S.I. Peker (14:00-14:20)
- I-10p-2 Theory of Sound Amplification in Many-Valley Semiconductors
S.V. Gantsevich and V.L. Gurevich (14:20-14:40)
- I-10p-3 Electron-Phonon Interaction in Strong Electric Fields
J. Yamashita and K. Nakamura (14:40-15:00)
- I-10p-4 Transmission of Microwave Radiation through "Acousto-Electrically Amplifying" CdS
G.S. Hobson and E.G.S. Paige (15:00-15:20)
- I-10p-5 Current Saturation and Instabilities in CdS Crystals
A. Ishida, C. Hamaguchi and Y. Inuishi (15:20-15:40)
- I-10p-6 Acoustoelectric Effect in Semiconducting CdS
A. Many and I. Balberg..... (16:00-16:20)
- I-10p-7 Acoustoelectric Domain Effects in III-V Semiconductors
R. Bray, C.S. Kumar, J.B. Ross and P.O. Sliva (16:20-16:40)
- I-10p-8 Ultrasonic Amplification and Non-Ohmic Behavior in Tellurium
T. Ishiguro and T. Tanaka (16:40-17:00)
- I-10p-9 Acoustoelectric Phenomena in Tellurium
G. Quentin and J.M. Thuillier (17:00-17:20)
- I-10p-10 Polaron Induced Anomalies in InSb
D.M. Larsen and E.J. Johnson (17:20-17:40)
- I-10p-11 Building-up of Phonons in Germanium
T. Arizumi, M. Umeno and S. Iwai (17:40-18:00)
- I-10p-12[†] Behavior of Phonons in Cadmium Sulfide
E. Maruyama and Y. Murayama
- I-10p-13[†] A Nonlinear Theory of Electron-Phonon Interaction in Semiconductors
N. Mikoshiba

[†] read by title

SATURDAY SEPTEMBER 10

Afternoon

MAGNETO-OPTICS (14:00-17:40)

- II-10p-1* Magneto Optical Phenomena
 B. Lax. (14:00-14:30)
- II-10p-2* Magneto-Optical Studies of Exciton Effects in
 Layer-Type Semiconductors
 K. Aoyagi, A. Misu, G. Kuwabara, Y. Nishina,
 S. Kurita, T. Fukuroi, O. Akimoto, H.
 Hasegawa, M. Shinada and S. Sugano (14:30-15:00)
- II-10p-3 Oscillatory Magnetoabsorption of the Direct
 Transition in the Layer Compound GaSe at 1.5 °K
 J. Halpern (15:00-15:20)
- II-10p-4 Magneto-Piezo-Optical Experiments in Semicon-
 ductors
 J.G. Mavroides, M.S. Dresselhaus, R.L.
 Aggarwal and G.F. Dresselhaus (15:20-15:40)
- II-10p-5 High Field Magneto-Optical Studies of Cd₃As₂
 E.D. Haidemenakis, M. Balkanski,
 E.D. Palik and J. Tavernier (16:00-16:20)
- II-10p-6 Oscillatory Magnetoabsorption in Tellurium
 C. Rigaux and G. Drilhon (16:20-16:40)
- II-10p-7 The Effects of Band Population on Interband
 Magneto-Optical Phenomena
 D.L. Mitchell, E.D. Palik and R.F. Wallis (16:40-17:00)
- II-10p-8 Cyclotron Resonance in Tellurium at Submillimeter
 Wavelengths
 J.C. Picard and D.L. Carter (17:00-17:20)
- II-10p-9 Electron Effective Mass in Gallium Arsenide as a
 Function of Doping
 H. Piller (17:20-17:40)

* invited paper

MONDAY SEPTEMBER 12

Morning

OPTICAL PROPERTIES -Electronic- (9:00-12:40)

- I-12a-1** Aspects of Polaritons
J.J. Hopfield (9:00-9:50)
- I-12a-2 Electroreflectance in Semiconductors
M. Cardona, F.H. Pollak and K.L. Shaklee (10:00-10:20)
- I-12a-3 A Theoretical and Experimental Study of Optical
Transition in Semiconductors Induced by Carrier
Interaction
A.A. Grinberg, N.I. Kramer, A.A. Rogachev
and S.M. Ryvkin (10:20-10:40)
- I-12a-4 Interband Piezo-Absorption in GaP
I. Balslev (11:00-11:20)
- I-12a-5 Optical Properties of Germanium in the Spectral
Region 1.7 eV to 2.1 eV
R.F. Potter (11:20-11:40)
- I-12a-6 Oscillatory Electro-Absorption Effects Near the
Direct Edge of Germanium
Y. Hamakawa, F. Germano and P. Handler (11:40-12:00)
- I-12a-7 The Anomalous Temperature Dependence of Infra-
red Absorption by Free Carriers in p-Type
Germanium
A.C. Baynham and E.G.S. Paige (12:00-12:20)
- I-12a-8 Optical Properties and Electronic Structure of
Amorphous Ge
J. Tauc, R. Grigorovici and A. Vancu (12:20-12:40)
- I-12a-9† Optical Properties and Energy Band Structure of
ZnS-CdS Single Crystals
M.S. Brodin, M.V. Kurik and N.I. Vitrikhovskii

** review paper

† read by title

Morning

TRANSPORT PHENOMENA (10:00-12:40)

- II-12a-1 Scattering of Spin Polarized Carriers from Spin Polarized Impurities in Semiconductors
A. Honig and R. Maxwell (10:00-10:20)
- II-12a-2 Effect of Carrier-Carrier Scattering on the Hall Effect in Graphite
K. Sugihara (10:20-10:40)
- II-12a-3 Cyclotron Resonance Study of Electron Scattering by Neutralized Acceptors in Si and Ge
E. Otsuka, K. Murase and T. Ohyama (11:00-11:20)
- II-12a-4 Oscillatory Magneto-Conductance in Si Surfaces
A.B. Fowler, F.F. Fang, W.E. Howard and P.J. Stiles (11:20-11:40)
- II-12a-5 Galvanomagnetic Properties of Surface Layers in Indium Arsenide
S. Kawaji and Y. Kawaguchi (11:40-12:00)
- II-12a-6 Galvanomagnetic Effects and Band Structure of CdSb
T. Kawasaki (12:00-12:20)
- II-12a-7 The Structure of the Conduction Band and the Anisotropy of Electrons Scattering in n-GaAs
A.F. Kravchenko, W.S. Sardarjan and W.W. Efimov (12:20-12:40)
- II-12a-8[†] The Size Effects in Conducitivity of Semiconductors with a Few Types of Carriers
E.I. Rashba, I.I. Boiko, V.A. Cochelap, Z.S. Gribnikov, V.A. Romanov and I.P. Zhad'ko

† read by title

MONDAY SEPTEMBER 12

Afternoon

IMPURITY STATE (14:00-17:20)

- I-12p-1* Impurity Band Tails in Degenerate Semiconductors
M. Lax and B.I. Halperin (14:00-14:30)
- I-12p-2* A Piezo-Spectroscopic Determination of the Symmetries of Acceptor States in Silicon and Germanium
P. Fisher, R.L. Jones, A. Onton and
A.K. Ramdas (14:30-15:00)
- I-12p-3 Sulfur Donors in Silicon: Infrared Transitions and the Effects of Calibrated Uniaxial Stress
W.E. Krag, W.H. Kleiner, H.J. Zeiger and
S. Fischler (15:00-15:20)
- I-12p-4 Chemical Shifts of Shallow Donor Levels in Silicon
A. Morita and H. Nara (15:20-15:40)
- I-12p-5 The Application of Crystal Field Theory to the Electrical Properties of Co Impurities in GaP
D.H. Loescher, J.W. Allen and G.L. Pearson .. (15:40-16:00)
- I-12p-6 Zeeman Effect of Acceptor States in Semiconducting Diamond
D.M.S. Bagguley, S.D. Smith, C.J. Summers
and G. Vella-Coleiro (16:20-16:40)
- I-12p-7 Magneto-optical Study of Hydrogenic Donor Impurity States in InSb
R. Kaplan (16:40-17:00)
- I-12p-8 Analysis of Zero-Phonon Lines in Absorption and Emission Spectra of Copper Impurities in ZnS Single Crystals
I. Broser and H. Maier..... (17:00-17:20)
- I-12p-9† Investigation of the Nature of Impurity States in CdTe
N.B. Urli

* invited paper

† read by title

MONDAY SEPTEMBER 12

Afternoon

CURRENT INSTABILITY (14:00-17:20)

- II-12p-1* Electronic Transport Properties Relevant to
Instabilities in GaAs
 J.B. Gunn (14:00-14:30)
- II-12p-2* On the Theory of Electrical Domains in Hot
Electron Semiconductors
 V.L. Bonch-Bruevich (14:30-15:00)
- II-12p-3* Mechanism of the Gunn Effect
 A.G. Chynoweth, W.L. Feldmann and
 D.E. McCumber (15:00-15:30)
- II-12p-4 Numerical Studies of a Two-Valley Model of the
Gunn Effect
 D.E. McCumber (15:30-15:50)
- II-12p-5 Intervalley Scattering Rate and High-Field
Electron Distributions in GaAs
 E.M. Conwell and M.O. Vassell (16:20-16:40)
- II-12p-6 Mixed Scattering in III-V Compounds
 C. Hilsum and J. Welborn (16:40-17:00)
- II-12p-7 Electrical Instability in Germanium Due to Hot
Electron Recombination on Repulsive Centers
 M.S. Kagan and S.G. Kalashnikov (17:00-17:20)

* invited paper

TUESDAY SEPTEMBER 13

Morning

RECOMBINATION (9:00-12:10)

- I-13a-1** Radiative Recombination at Isoelectronic Traps
D.G. Thomas (9:00-9:50)
- I-13a-2* Semiconductor Lasers Using Optical Pumping
N.G. Basov, A.Z. Grasiuk, V.F. Efimkov,
I.G. Zubarev and V.A. Katulin (10:00-10:30)
- I-13a-3 Recombination Processes in GaP Diodes as
Functions of Temperature
M.R. Lorenz, T.N. Morgan, M.H. Pilkuhn and
G.D. Pettit (10:30-10:50)
- I-13a-4 Piezoemission of Indium Antimonide
C. Benoit á la Guillaume and P. Lavallard (10:50-11:10)
- I-13a-5 Edge Absorption and Photoluminescence in Dis-
ordered Gallium Arsenide
C.C. Hsu, E.W.J. Mitchell and C. Norris (11:30-11:50)
- I-13a-6 High Field Effects in n-Type InSb
J.C. McGroddy and M.I. Nathan (11:50-12:10)
- I-13a-7† Cathodoluminescence of p-Type GaAs
J.I. Pankove
- I-13a-8† On the Mechanism of Recombination Radiation of
p-n Junctions in GaAs
D.N. Nasledov and B.V. Tsarenkov
- I-13a-9† Radiation Ionization Energies in Semiconductors:
Speculations about the Role of Plasmons
C.A. Klein
- I-13a-10† Surface Recombination Velocities and Diffusion
Lengths in GaAs
D.B. Wittry and D.F. Kyser

** review paper

* invited paper

† read by title

TUESDAY SEPTEMBER 13

Morning

MAGNETIC SEMICONDUCTORS (10:00-11:20)

- II-13a-1 Magnetic Field Effects on Resistivity and
 Thermoelectric Power of Single Crystal MnP
 T. Suzuki, Y. Matsumura and E. Hirahara (10:00-10:20)
- II-13a-2 Magnetic Resonance Experiments on VO₂
 J. Umeda, H. Kusumoto and K. Narita (10:20-10:40)
- II-13a-3 Optical Properties of α -MnS in the Fundamental
 Absorption Region
 D.R. Huffman, R.L. Wild and J. Callaway (10:40-11:00)
- II-13a-4 Magnetic Interactions between Mn Spins Diluted in
 GeTe
 M. Rodot, J. Cohen, J. Lewis, P. Mollard,
 H. Rodot and G. Villers (11:00-11:20)

SUPERCONDUCTIVITY (11:30-12:50)

- II-13a-5* Superconductivity in Degenerate Semiconductors
 M.L. Cohen and C.S. Koonce (11:30-12:00)
- II-13a-6* Superconductivity in Semiconducting SrTiO₃
 J.F. Schooley and W.R. Thurber (12:00-12:30)
- II-13a-7 Superconducting Properties of Germanium Telluride
 R.A. Hein, J.W. Gibson, R.L. Falge, Jr.,
 R. Mazelsky, R.C. Miller and J.K. Hulm (12:30-12:50)

* invited paper