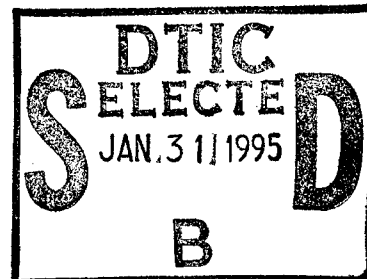


Final Report

1994 Gordon Research Conference on Point Defects, Line Defects, and Interfaces in Semiconductors

Office of Naval Research
Grant No: N00014-94-1-0578
Principal Investigator: Michael Stavola
Scientific Officer: Larry R. Cooper



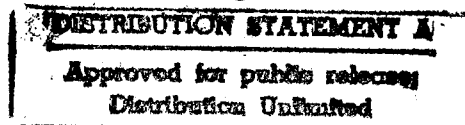
The Gordon Conference on Point Defects, Line Defects and Interfaces in Semiconductors was held from July 31 - August 5, 1994 at Plymouth State College in Plymouth, New Hampshire. The conference chair was Michael Stavola, Lehigh University, and the vice-chair was Leonard Feldman, AT&T Bell Laboratories. By any measure, the conference was highly successful.

The Final Fiscal Report for the conference will be sent by the Gordon Conference Office. A summary of the final budget is attached to this report (Sec. A). Conference funds were used primarily to support the registration fees of participants. Of those supported, roughly 28 were invited speakers or discussion leaders, 14 were graduate students or postdocs, and 14 were other professionals. The registration fees that were provided allowed many attendees to obtain travel support from their home institutions. These funds greatly increased the number of qualified scientists who could attend and also the quality of the meeting. The interest and support of the agencies listed on p. A-1 are greatly appreciated by the community working on defects in semiconductors.

There is no abstract booklet or proceedings printed for a Gordon Conference. The invited program (Sec. B) and poster program (Sec. C) are included here as the final technical report. The invited program was constructed from suggestions solicited from the defects community by a program committee that included J. Chadi, NEC, L. Feldman, AT&T, W.B. Fowler, Lehigh, R. Hull, AT&T, P. Mooney, IBM, G.D. Watkins, Lehigh, and N. Wilsey, NRL. There were 23 invited presentations and 50 posters. The invited talks were extremely well received. These were followed by long productive discussion periods that were organized by the session's discussion leader.

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DTIC QUALITY INSPECTED 3



The technical program has continued to evolve and to deal with the hottest new issues in the field of defects. There were two sessions on defects in wide bandgap semiconductors like the group III nitrides and II-VI materials that are receiving much recent attention because of renewed interest in visible optical devices. The presentation of very fundamental research was mixed with device-related defect problems which led to well balanced sessions which should help the community to focus on important issues. Heteroepitaxy and related defect issues continue to play an important role. Talks on strain relief in SiGe epitaxial layers and on the interactions of defects with surfaces and interfaces were especially exciting and well received. Studies of point defects continue to generate exciting results. The talks by Johnson and Estreicher on hydrogen in semiconductors raised several controversial issues which were vigorously discussed.

The Gordon Conference evaluation of the Point and Line Defect Conference came out very well (Sec. D). The conference was rated as well above average in all areas which include Science, Discussion, Management, and Atmosphere. Rating scores were higher than the previous conference in this series in all categories. The quality of the discussion periods was rated especially highly in comments by the attendees. The profile sheet shows that there was a very healthy balance in the age distribution, location and professional status of the attendees. For example 50% of the attendees were from U.S. institutions and 50% were non-U.S.; 29% were students or postdocs and 71% were professionals. There were 114 attendees at the meeting. A list of conference attendees is attached (Sec. E).

The next Gordon Conference on Point Defects, Line Defects and Interfaces in Semiconductors will be held in summer 1996. The meeting chair will be Leonard Feldman, At&T Bell Laboratories (elected at the 1992 meeting) and the meeting vice-chair will be Chris G. Van de Walle (elected at the 1994 meeting).

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DTIC QUALITY INSPECTED 3

A. CONFERENCE FINANCES

CONFERENCE SUPPORT

Gordon Research Conference Special Fund	\$15,000
Gordon Research Conference Chair's Fund	600
Gordon Research Conference Supplement	500
Office of Naval Research*	3,000
Army Research Office*	<u>5,000</u>
TOTAL	\$24,100

In addition to the above, the International Science Foundation fully supported the travel expenses of two attendees from the Former Soviet Union.

CONFERENCE EXPENSES

Registration Fees for Invited Speakers and Discussion Leaders*	\$12,200
Registration Fees and Travel Support for Participants	6,800
Registration Fees for Students and Postdocs	4,500
Miscellaneous Administrative Expenses	<u>600</u>
TOTAL	\$24,100

*Funds provided by the U.S. Navy Office of Naval Research and the U.S. Army Research Office were used to partially support the expenses of invited speakers and discussion leaders.

B. Conference Program

Gordon Research Conference Point Defects, Line Defects, and Interfaces in Semiconductors

Plymouth State College (South), Plymouth, NH USA
July 31-August 5, 1994

Chair: Michael Stavola

Vice Chair: L.C. Feldman

Monday 8:50 am

M. Stavola (Lehigh)	Welcome
G.D. Watkins (Lehigh)	In memory of James W. Corbett

Monday 9:00 am-12:15 pm

Lattice Location of Impurities

Discussion leader: B. Clerjaud (Paris)	
J.E. Northrup (Xerox)	Si Doping and Diffusion in GaAs
P.H. Citrin (AT&T)	EXAFS and NEXAFS Studies of Point Defects in Semiconductors
R.C. Newman (London)	The Dynamics of H-C _{As} Pairs in GaAs and AIAs Deduced from LVM Spectroscopy

Monday 7:30 pm

Advances in Structure Sensitive Techniques

Discussion leader: W. Jantsch (Linz)	
C. Corbel (Saclay)	Positron Annihilation Studies of Charge States and Metastability of Defects in Semiconductors
J.-M. Spaeth (Paderborn)	Electrical Detection of Electron Paramagnetic Resonance: New Possibilities for the Study of Point Defects

Tuesday 8:45 am-12:15 pm

Wide-Band-Gap Semiconductors I

Discussion leader: B. Monemar (Linköping)	
B.K. Meyer (Munich)	ODMR of Defects in CdZnTe
E.R. Glaser (NRL)	Optical and Magnetic Resonance Studies of Point Defects in GaN
Discussion leader: H. Kukimoto (Tokyo Inst. of Tech.)	
K. Nakano (SONY)	Characterization of ZnMgSSe Blue Laser Diodes

Tuesday 7:30 pm

Wide-Band-Gap Semiconductors II

Discussion leader: C.G. Van de Walle (Xerox)	
J.D. Chadi (NEC)	DX Centers in II-VI Semiconductors
P. Boguslawski (Warsaw)	Impurities and Defects in Wide Gap Nitrides

Wednesday 8:45 am-12:15 pm Hydrogen in Semiconductors

Discussion leader: J. Weber (MPI Stuttgart)

N.M. Johnson (Xerox) Diffusion and Charge States of Isolated Hydrogen in Si and GaAs

S.K. Estreicher (Texas Tech) States and Diffusion Properties of Hydrogen in Semiconductors: A View from Theory

Discussion leader: E.H. Poindexter (Fort Monmouth)

E.A. Cartier (IBM) Interaction of Atomic H with the Si/SiO₂ Interface

Wednesday 7:30 pm Dislocations

Discussion leader: E.R. Weber (Berkeley)

R. Jones (Exeter) Impurity-Dislocation Interaction in Si and GaAs

B. Farber (Case-Western) A New Approach for Studying Kink Dynamics on Dislocations in Semiconductors

Thursday 8:45 am-12:15 pm Heteroepitaxy

Discussion leader: E.A. Fitzgerald (AT&T)

K.L. Kavanagh (UCSD) Strain Relaxation of InGaAs/GaAs

F.K. LeGoues (IBM) Strain Relief in SiGe on Si

Diffusion

Discussion leader: U.M. Gösele (MPI Halle)

N. Moriya (AT&T) B Diffusion in SiGe Epitaxial Layers

A. Nylandsted Larsen (Aarhus) Enhanced Diffusion of High Concentration Impurities in Si: A Collective Phenomenon?

Thursday 7:30 pm After Banquet Presentation

Discussion leader: J.M. Langer (Warsaw)

E.E. Haller (UC Berkeley) Physics with Isotopically Controlled Semiconductors

Friday 8:30 am-11:30 am Interfaces, Defects, and Epitaxy

Discussion leader: M. Scheffler (Berlin)

B. Bennett (NRL) Interfacial Characterization and Control in Arsenide/Antimonide Heterostructures

H.J. Osten (Frankfurt, Oder) The Role of Foreign Atoms in Epitaxy

J.D. Tersoff (IBM) Interactions of Defects with Surfaces and Interfaces

C. PROGRAM FOR POSTER SESSIONS

July 28, 1994

Gordon Conference on Point Defects, Line Defects and Interfaces - 1994

Poster Sessions

Session 1:

Posters on Display Monday and Tuesday
"Official Viewing" Tuesday Evening
Posters M1-M6, T1-T14

Session 2:

Posters on Display Wednesday and Thursday
"Official Viewing" Wednesday Evening
Posters W1-W7, Th1-Th6, F1-F17

M- Novel Techniques

M-1 First use of radioactive dopants for a photoluminescence study: GaAs doped with ^{111}In decaying to ^{111}Cd

R. Magerle, A. Burchard, M. Deicher, T. Kerle, W. Pfeiffer, Konstanz

M-2 Effective Mass in Hydrogen-Impurity Pairs: The Roles of Anharmonicity and Lattice Interaction

S.N. Walck, W.B. Fowler, Lehigh

M-3 Ultrasound Stimulated Change of Diffusion Length in Si: New Approach in Defect Engineering

S. Ostapenko, South Florida

M-4 Ultrasound Enhancement of Cr-B Pairing in CZ Si

Ronald E. Ball II, U. South Florida

M-5 Characterization of defects in plastically deformed semiconductors

H.S. Leipner, R. Krause-Rehberg, A. Polity, T. Drost, O. Storbeck, Tohoku U.

M-6 Identification of Group-V Impurity-Related Complexes in Germanium Using Positron Annihilation as a Microscope Probe

V. Emtsev A.F. Ioffe, Russian Acad. Sciences

T- Wide Band Gap Materials

T-1 Deep iron acceptors in GaN and AlN

K. Maier, J. Baur, M. Kunzer, U. Kaufmann, J. Schneider, Fraunhofer-IAF

T-2 Formation Energies and Electronic Structure of Native Defects in GaN

J. Neugebauer, C.G. Van de Walle, Xerox

T-3 Non-Linear Spectroscopy of Deep Levels. Centres of Radiative and Nonradiative Recombination in ZnSe:Te

G. Raciukaitis, Vilnius U.

T-4 Nonlinear spectroscopic methods for the study of deep local defects of crystals

V. Gavryushin, G. Raciukaitis, A. Kazlauskas, Vilnius U.

T-5 Symmetry and Electronic Structure of the Mn-Impurity in ZnS Nanocrystals

T.A. Kennedy, P.B. Klein, E.R. Glaser, Naval Research Lab.; R.N. Bhargava, Nanocrystals Tech.

T-6 Identification of the neutral V^{4+} impurity in cubic 3C-SiC by electron-spin resonance and optically detected magnetic resonance

M. Kunzer, K.F. Dombrowski, U. Kaufmann, K. Maier, J. Schneider, Fraunhofer Inst.; V. Shields, M.G. Spencer, Howard U.

T-7 Strain-stabilized highly-concentrated pseudomorphic $Si_{1-x}C_x$ layers in Si
H. Rücker, M. Methfessel, E. Bugiel, H.J. Osten, Inst. für Halbleiterphysik

T-8 Microscopic structures of donors and acceptors in SiC

S. Greulich-Weber, M. Feege, J.-M. Spaeth, E.N. Kalabukhova, S.N. Lukin, E.N. Mokhov

T-9 Nickel Related Defects in High Pressure Synthetic Diamond

M.H. Nazare, J.C. Lopes, L.M. Rino, U. Aveiro

T-10 ODMR of Nitrogen and Nickel in Diamond

P.W. Mason, G.D. Watkins, Lehigh U.; M.H. Nazare, U. de Aveiro.

T-11 Phosphorous Doping of Diamond: an EPR Study

M.E. Zvanut, U. Alabama; W.E. Carlos, Naval Res. Lab.; J.A. Freitas, Jr., Sachs Freeman Assoc.; K. Jamison, Si Diamond Tech.

T-12 Room Temperature Electric Field-Induced Control Over Composition and Properties of Chalcogenide Semiconductors

L. Chernyak, D. Cahen, I. Lyubomirsky, Weizmann Inst. Sci.

T-13 A DX Behavior for Holes Implied from Observation of Metastable Acceptor States

J. Han, M.D. Ringle, Y. Fan, R.L. Gunshor, Purdue U.; A.V. Nurmikko, Brown U.

T-14 A New Tight-Binding Model for the Study of Materials

M.J. Burnhard, G.G. DeLeo, Lehigh U.

W- Hydrogen in Semiconductors and Dislocations

W-1 Microscopic structure of donor-two-hydrogen complexes in n-type crystalline silicon

Z.N. Liang, C. Hass, L. Niesen, Groningen U.; P.J.H. Denteneer, Leiden U.

W-2 Hydrogen Vibrations of Three Charge States of the Pt-H₂ Center in Si

S. Uftring, M. Stavola, P.M. Williams, G.D. Watkins, Lehigh U.

W-3 Preferential alignment of complexes containing carbon and hydrogen in GaAs epilayers grown by metal-organic vapour phase epitaxy (MOVPE)

B.R. Davidson, R.C. Newman, Imperial College; K.H. Bachem, Fraunhofer Inst.

W-4 Atomic Modes of Dislocation Mobility in Silicon

V.V. Bulatov, S. Yip, A.S. Argon, MIT

W-5 Plasma Etching of Dislocations in Silicon

E.M. Nadgorny, Mich. Tech. U

W-6 Effect of Dislocations on the Reactive Ion Etching of Silicon Surfaces

E.M. Nadgorny, Mich. Tech. U

W-7 Hydrogen-related shallow thermal donors in Czochralski silicon

S.A. McQuaid, R.C. Newman, Imperial College.

Th- Heteroepitaxy and Diffusion

TH-1 Electrical and Optical States Related to Dislocations in Si_{1-x}Ge_x Layers

L.P. Tilly, P.M. Mooney, F.K. LeGoues, J.O. Chu, S. Zollner, R.T. Collins, IBM

TH-2 Photoluminescence of Si_{1-x}Ge_x Double and Triple Quantum Wells

H.-M. Latuske, U. Mantz, K. Thonke, R. Sauer, U. Ulm; F. Schäffler, H.-J. Herzog, Daimler-Benz

TH-3 Diffusion in Strained SiGe

N. Cowern, Philips Res

TH-4 Boron Diffusion in Si_{1-x}Ge_x

P. Kuo, J.L. Hoyt, J.F. Gibbons, Stanford U.; J.E. Turner, D. Lefforge, T.I. Kamins, Hewlett-Packard

TH-5 Isoconcentration Study of Phosphorus Diffusion in Silicon

F. Wittel, S. Dunham, Boston U.

TH-6 Si and Be Diffusion in GaAs Delta Doping Layers Studied by Magneto-Transport and Scanning Tunneling Microscopy

P.M. Koenraad, Eindhoven; M.B.J. Johnson, H.W.M. Salemink, J.H. Wolter, IBM; J.A.A.J. Perenboom, U. Nijmegen

F- Defects and "Granular" Si

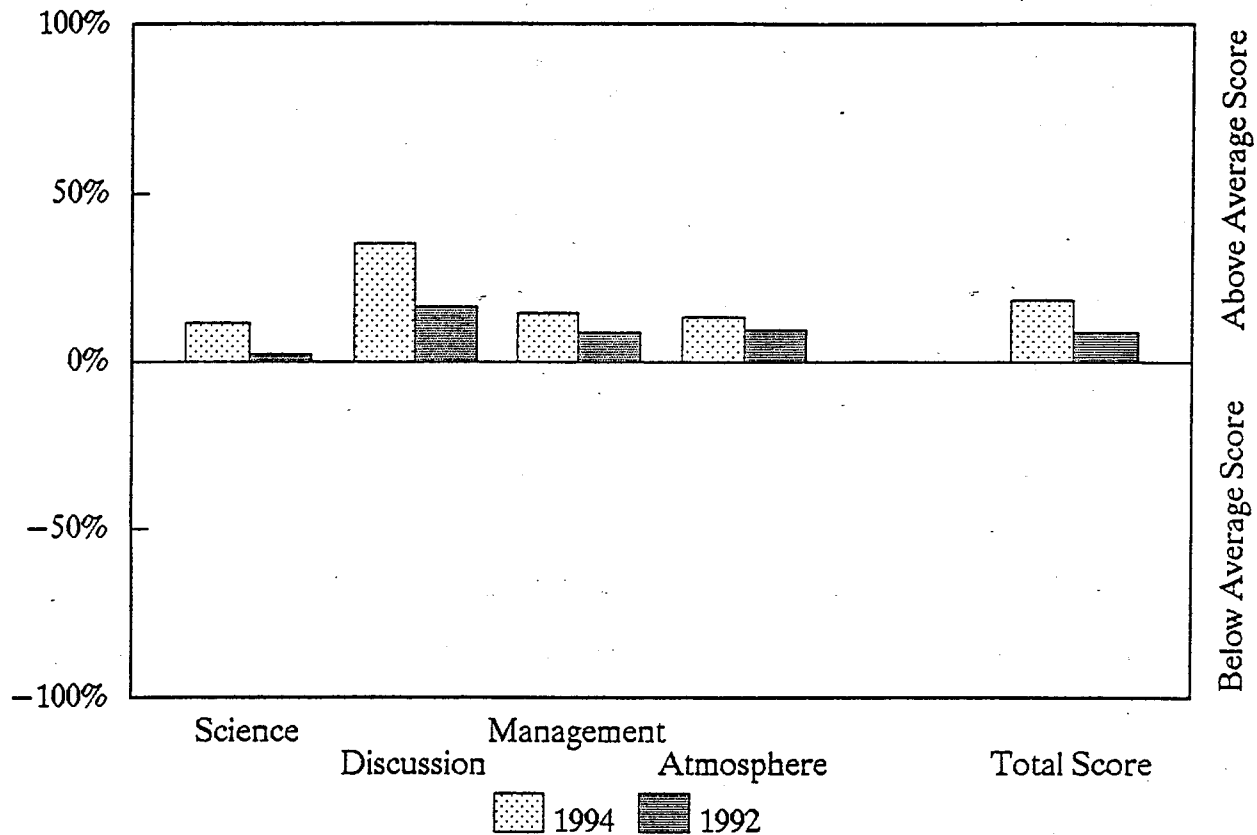
F-1 Investigation of As_{Ga} Related Defects in Low Temperature Grown GaAs through MCDA and ODMR

A. Prasad, X. Liu, W.M. Chen, E.R. Weber, U. CA Berkeley

- F-2 Defects in GaAs Grown at Low Temperature
C.G. Morgan, J.I. Landman, Wayne State; J.T. Schick, Villanova
- F-3 Metastable Radiation Induced Defects in GaAs
F.D. Auret, S.A. Goodman, R.M. Erasmus, W.E. Meyer, U. Pretoria
- F-4 Passivation of Shallow and Deep Levels by Lithium in GaAs
H.P. Gislason, T. Egilsson, Baohua Yang, U. Iceland
- F-5 Local Investigation of the Electrical Properties of Grain Boundaries in Silicon
J. Palm, MIT; D. Steinbach, H. Alexander, U. Köln
- F-6 Light Emission Properties of Porous Silicon
S.M. Prokes, Naval Res
- F-7 Metastability of Electronic Defects Caused by Configuration and Temperature
Dependent Entropy Variation
S.V. Kovesnikov, A. Agarwal, G.A. Rozgonyi, N.C. State
- F-8 Recent Applications of Spin-Dependent Recombination in Group IV
Semiconductors
M.S. Brandt, C.F.O. Graeff, M. Stutzmann, Walter Schottky Inst
- F-9 The Nitrogen-Pair Defect in Silicon, Germanium and Silicon-Germanium Alloys
F.B. Rasmussen, B.B. Nielsen, U. Aarhus; R. Jones, U. Exeter; S. Oberg, U. Lulea
- F-10 Structure of the Neutral Charge State of Interstitial Carbons in Si
J.F. Zheng, M. Stavola, G.D. Watkins, Lehigh U.
- F-11 Lattice Relaxations and Bound Excitons
G. Davies, King's College
- F-12 The Electrical Properties of He-Implantation-Produced Nanocavities in Silicon
C.H. Seager, S.M. Myers, R.A. Anderson, W.L. Warren, D.M. Follstaedt, Sandia
- F-13 EPR of Au-Complexes in Heat-Treated Silicon
P.M. Williams, G.D. Watkins, Lehigh U.
- F-14 Alternative Defect Model for Si-NL52
K.L. Brower, S.M. Myers, Sandia; A.H. Edwards, U. North Carolina; N.M. Johnson,
Chris G. Van de Walle, Xerox Palo Alto; E.H. Poindexter, Ft. Monmouth
- F-15 Chemical bond and reconstruction of impurity centers in semiconductors
A. Ryskin, Vavilov State Optical Institute
- F-16 Intentional introduction of Al-O complexes into GaAs grown by Organometallic
Vapor Phase Epitaxy
Y. Park, M. Skowronski, Carnegie-Mellon U.
- F-17 Bistability of Dangling Bonds in Amorphous and Crystalline Silicon by *ab initio*
Molecular Dynamics Simulation
H. Katayama-Yoshida, Tohoku U.

1994 Overall Conference Comparison

Point & Line Defects in Semiconductors



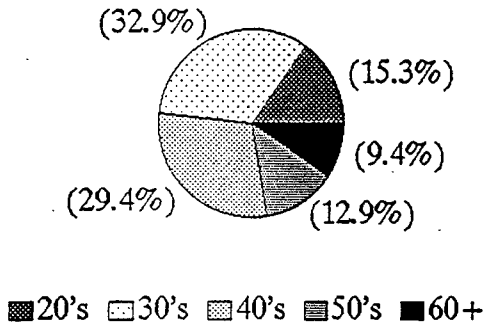
CONFERENCE SCORES:

Point & Line Defects in Semiconductors

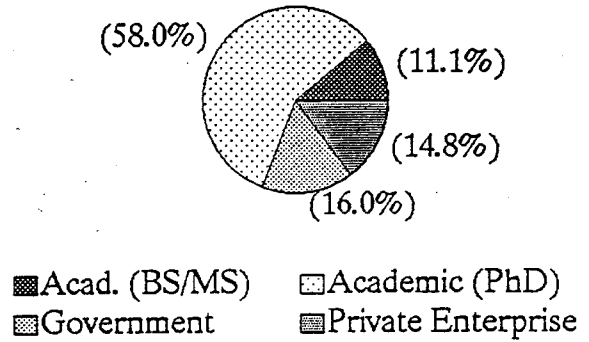
Conference Scores:	1994	1992	Average Conference Scores
Science:	24.50	22.44	21.93
Discussion:	23.14	19.91	17.08
Management:	16.70	15.87	14.56
Atmosphere:	17.72	17.08	15.61
Total Score:	82.06	75.30	69.19

Point & Line Defects in Semiconductors
 Conferee Profile Sheet

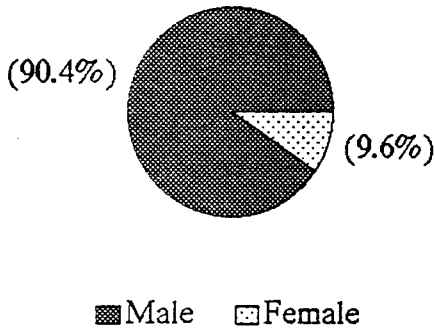
Age Distribution
 Average Age: 41.8



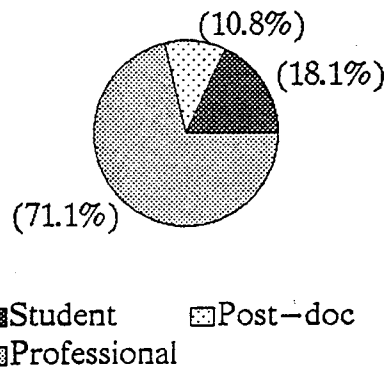
Employer/Occupation Location



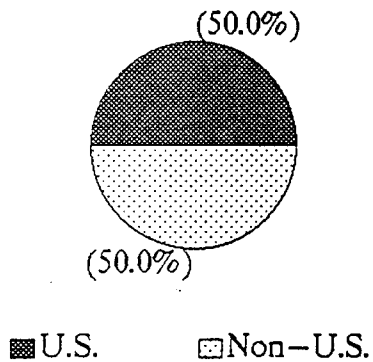
Sex of Conferees



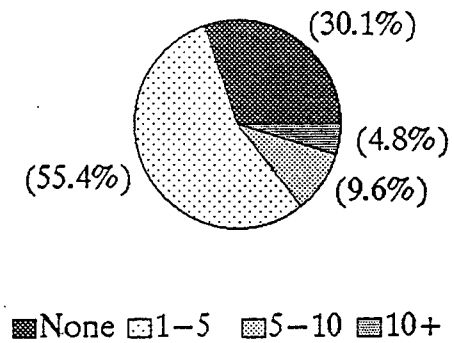
Professional Status



Country Represented



GRC's Previously Attended



POINT & LINE DEFECTS IN SEMICONDUCTORS - PLYMOUTH STATE COLLEGE (S)
1994 CONFERE COMMENTES

SCIENCE:

1. It seems it would be useful to present at this meeting more quantity of conceptual talks devoted to general problems of defects. Too many very concrete talks have been presented.
2. Should include more innovative research (new fields of defects, etc.).
3. The conference seem to attract more theorists than experimentalists. Can this be corrected? It is becoming unbalanced. Poster sessions are too late!

DISCUSSION:

4. Excellent, especially discussion.
5. A wide variety of important topics were addressed and the ample open discussion provided an even greater exchange of information. Discussion was equally open to all individuals. All attendees were quite accessible. This is very good.
6. A well organized meeting with valuable opportunities for wide discussions.

MANAGEMENT:

7. Excellent organization by the chairman. Good preparation and mediation of the discussion leaders.
8. Excellent conference! The chair did a great job.
9. Have morning and afternoon sessions instead of morning and evening sessions.
10. Could have longer afternoons.
11. Very well organized, good program. Very informative.
12. Exceptional, even among GRCs. Conference session leaders were very effective: splendid and exciting discussions/question sessions. Excellent selection of timely and controversial topics still exciting after many years. Many new problems and important ideas.
13. 3 1/2 days might be better.
14. Very nice format.
15. I feel that having the poster sessions after 10:00 p.m. is bad. A late afternoon session would be much better. I feel that there were too many theorists represented, but not enough experimentalists.

ATMOSPHERE:

16. Very well organized. Extremely helpful and useful for the scientists from the former Soviet Union for establishing cooperation and receiving the new information.
17. Very good.
18. Best conference in our field!
19. Excellent.

E. ATTENDEE LIST

CONFERENCE #: 94-S-PSS-8
 CONFERENCE LOCATION: PLYMOUTH (SOUTH)

CONFERENCE TOPIC: POINT & LINE DEFECTS
 CONFERENCE DATE: JUL-31-94

CONFERENCE CHAIRMAN: MICHAEL STAVOLA

APPLICANT NAME ORGANIZATION	DATE SENT TO CHRMN	STATUS	PARTIC	APPLIC #
DR CORBEL C CE-SACLAY INSTN	JUN-09-94	ACCPT	SPEAKER	9418035
DR DAVID ADLER UNIV OF ILL, URBANA-CHAMPAIGN	JUN-24-94	ACCPT	ATTENDEE	9418723
DR CORNELIS J AMMERLAAN UNIV VAN AMSTERDAM	JUN-09-94	RGSTD	ATTENDEE	9418021
DR F D AURET UNIVERSITY OF PRETORIA	MAR-24-94	RGSTD	ATTENDEE	9406165
DR RONALD E BELL UST CENTER FOR MICROELECTRONICS RESEARCH	II JUN-09-94	ACCPT	ATTENDEE	9417719
DR BRIAN R BENNETT NAVAL RESEARCH LAB	JUN-09-94	RGSTD	SPEAKER	9418068
DR JERZY BERNHOLC NORTH CAROLINA STATE UNIVERSITY	MAY-26-94	RGSTD	ATTENDEE	1014797
DR PIOTR BOGUSLAWSKI INSTITUTE OF PHYSICS PAN	MAY-19-94	RGSTD	SPEAKER	9415011
DR VASILY V BULATOV MASS INST OF TECH	JUL-07-94	ACCPT	ATTENDEE	9419322
DR MATTHEW J BURHARD LEHIGH UNIVERSITY	JUN-09-94	RGSTD	ATTENDEE	9417907
DR MARILIA J CALDAS UNIVERSISADE DE SAO PAULO	JUL-01-94	ACCPT	ATTENDEE	9419124
DR WILLIAM E CARLOS NAVAL RESEARCH LABORATORY	JUN-09-94	ACCPT	ATTENDEE	9417644
DR EDUARD A CARTIER IBM RESEARCH DIVISION	JUN-02-94	ACCPT	SPEAKER	9416750
DR JAMES D CHADI NEC RESEARCH INSTITUTE	MAR-31-94	ACCPT	SPEAKER	9406983
DR LYNN L CHALFOUN MIT	JUN-16-94	ACCPT	ATTENDEE	9418519
DR LEONID CHERNYAK WEIZMANN INSTITUTE OF SCIENCE	APR-07-94	RGSTD	ATTENDEE	9408195
DR PAUL H CITRIN AT&T BELL LABORATORIES	APR-14-94	ACCPT	SPEAKER	9409365
DR BERNARD CLERJAUD UNIVERSITE PIERRE ET MARIE CURIE	MAY-26-94	RGSTD	DISC LDR	9416069
DR NICHOLAS E COWERN PHILIPS RESEARCH	JUN-16-94	ACCPT	ATTENDEE	9418399
DR BRAIN R DAVIDSON IMPERIAL COLLEGE, ICR SEMICONDUCTOR	APR-21-94	RGSTD	ATTENDEE	9410710
DR GORDON DAVIES PHYSICS DEPARTMENT	APR-07-94	RGSTD	ATTENDEE	9407725
DR PETER J DREVINSKY U.S. AIR FORCE	JUN-09-94	CANCEL	ATTENDEE	9417909

CONFERENCE CHAIRMAN: MICHAEL STAVOLA

APPLICANT NAME ORGANIZATION	DATE SENT TO CHRMN	STATUS	PARTIC	APPLIC #	NEW ST
DR VADIM V EMTSEV A.F. IOFFE PHYSICO-TECHNICAL INSTITUTE,	MAY-13-94	RGSTD	ATTENDEE	9413501	
DR STEFAN K ESTREICHER TEXAS TECH UNIVERSITY	MAR-24-94	RGSTD	SPEAKER	9404859	
DR BORIS Y FARBER ROSEMOUNT ANALYTICAL INC	JUN-09-94	RGSTD	SPEAKER	9418040	
DR LEONARD C FELDMAN AT&T BELL LABORATORIES	APR-14-94	RGSTD	V CHAIR	9408487	
DR EUGENE A FITZGERALD AT & T BELL LABORATORIES	MAY-19-94	RGSTD	DISC LDR	9415601	
DR W. B FOWLER LEHIGH UNIVERSITY	JUN-16-94	RGSTD	ATTENDEE	9418529	
DR VLADIMIR GAVRYUSHIN VILNNIUS UNIV, LAB OF NONLINEAR SPECT	MAY-13-94	ACCPT	ATTENDEE	9413617	
HAFLIDI P GISLASON UNIVERSITY OF ICELAND	JUN-16-94	ACCPT	ATTENDEE	1018589	
DR EVAN R GLASER NAVAL RESEARCH LABORATORY	MAY-13-94	RGSTD	SPEAKER	9414403	
DR ULRICH M GOELSELE MAX-PLANCK-INSTITUTE OF MICROSTRUCTURE	MAY-19-94	RGSTD	DISC LDR	9415604	
DR TOM GREGORKIEWICZ UNIVERSITY OF AMSTERDAM	MAR-24-94	RGSTD	ATTENDEE	9404861	
DR SIEGMUND GREULICH-WEBER UNIVERSITY OF PADERBORN	MAY-26-94	ACCPT	ATTENDEE	9416287	
DR HERMANN G GRIMMEISS UNIVERSITY OF LUND	MAY-13-94	ACCPT	DISC LDR	9413834	
DR EUGENE E HALLER UNIVERSITY OF CALIFORNIA BERKELEY	APR-21-94	ACCPT	SPEAKER	1006967	
DR JUNG HAN PURDUE UNIVERSITY	APR-29-94	RGSTD	ATTENDEE	9411716	
DR AKIRA ISHIBASHI SUNY CORPORATION RESEARCH CENTER	JUN-16-94	CANCEL	SPEAKER	9418532	
DR WOLFGANG JANTSCH JOHANNES KEPLER UNIVERSITAT	MAY-26-94	RGSTD	DISC LDR	9415833	
DR NOBLE M JOHNSON XEROX PARC	APR-29-94	RGSTD	SPEAKER	9410969	
DR R JONES UNIVERSITY OF EXETER	APR-21-94	RGSTD	SPEAKER	9409595	
PRO BRUNO KARL MEYER TECH UNIV MUNCHEN	JUN-24-94	ACCPT	SPEAKER	9418826	
DR HIROSHI KATAYAMA-YOSHIDA TOHOBU UNIVERSITY	JUN-09-94	RGSTD	ATTENDEE	9417997	
DR KAREN L KAVANAGH UCSD	MAY-13-94	RGSTD	SPEAKER	9413502	
DR THOMAS A KENNEDY NAVAL RESEARCH LAB	JUN-24-94	ACCPT	ATTENDEE	9418716	

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APPLICANT NAME ORGANIZATION	DATE SENT TO CHRMN	STATUS	PARTIC	APPLIC #	NEW S
DR LIONEL C KIMERLING MIT	JUN-16-94	ACCPT	ATTENDEE	9418526	
DR PAUL MARIA KOENRAAD EINDHOVEN UNIVERSITY OF TECHNOLOGY	JUL-07-94	ACCPT	ATTENDEE	9419462	
DR FREDRICH K KOSCHNICK UNIVERSITY OF PADERBORN	MAY-26-94	ACCPT	ATTENDEE	9416288	
DR SERGEI V KOVESHNIKOV UNIVERSITY OF NORTH CAROLINA	JUL-01-94	ACCPT	ATTENDEE	9419109	
DR HIROSHI KUKIMOTO TOKYO INST OF TECH	JUN-24-94	ACCPT	DISC LDR	9418825	
MICHAEL KUNZER FRAUNHOFER INSTITUTE FOR APPLIED	APR-14-94	RGSTD	ATTENDEE	9409362	
DR PAOHUA KUO STANFORD UNIV	JUL-07-94	ACCPT	ATTENDEE	9419320	
DR PAOHUA KUO STANFORD UNIVERSITY	JUL-14-94	OPEN	ATTENDEE	9419510	ACCPT
DR ERIC P KVAM PURDUE UNIVERSITY	JUN-02-94	ACCPT	ATTENDEE	1014725	
DR J M LANGER INST PHYS POLISH AC SCI	MAY-19-94	RGSTD	DISC LDR	1014764	
DR JAMES P LAVINE EASTMAN KODAK COMPANY	MAR-24-94	CANCEL	ATTENDEE	9404763	
DR FRANCOISE K LEGOUES IBM T.J. WATSON RESEARCH CENTER	APR-14-94	RGSTD	SPEAKER	9408828	
DR HARTMUT S LEIPNER TOHOKU UNIVERSITY	APR-29-94	RGSTD	ATTENDEE	9411717	
DR ZHONGNING LIANG GRONINGEN UNIVERSITY	JUN-09-94	ACCPT	ATTENDEE	9417483	
DR ROGER L LICHTI TEXAS TECH UNIVERSITY	APR-21-94	RGSTD	ATTENDEE	9410182	
DR JEROME C LICINI LEHIGH UNIVERSITY	JUN-24-94	ACCPT	ATTENDEE	1014767	
DR J. LENNART LINDSTROM LINLISPING UNIVERSITY	MAR-24-94	RGSTD	ATTENDEE	9406205	
DR ROBERT MAGERLE UNIVERSITAT KONSTANZ	JUN-02-94	ACCPT	ATTENDEE	9417002	
DR KARIN MAIER FRAUNHOFER-IAF	APR-14-94	CANCEL	ATTENDEE	9409364	
DR PHILLIP W MASON LEHIGH UNIVERSITY	MAY-26-94	RGSTD	ATTENDEE	9416331	
DR SEAMUS A MCQUAID INTERDISCIPLINARY RESEARCH CENTRE FOR	APR-21-94	RGSTD	ATTENDEE	9410271	
DR MICHAEL S METHFESSEL INST F HALBLEITERPHYSIK	JUN-09-94	ACCPT	ATTENDEE	9418027	
JURGEN MICHEL MASSACHUSETTS INSTITUTE OF TECHNOLOGY	JUN-16-94	ACCPT	ATTENDEE	1014738	

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APPLICANT NAME ORGANIZATION	DATE SENT TO CHRMN	STATUS	PARTIC	APPLIC #	NEW S
DR MASASHI MIZUTA NEC CORPORATION	APR-21-94	RGSTD	ATTENDEE	1014771	
DR BO A MONEMAR LINKOPING UNIVERSITY	MAR-24-94	RGSTD	DISC LDR	9404860	
DR FREDERICK F MOREHEAD SEMICONDUCTOR RES. AND DE. CTR., IBM	JUN-09-94	RGSTD	ATTENDEE	9417872	
DR CAROLINE G MORGAN WAYNE STATE UNIVERSITY	MAR-31-94	RGSTD	ATTENDEE	9407176	
DR MICHAEL T MORSE MIT	JUN-16-94	ACCPT	ATTENDEE	9418521	
DR EDWARD M NADGORN MICHIGAN TECHNOLOGICAL UNIVERSITY	APR-21-94	RGSTD	ATTENDEE	9410492	
DR KAZUSHI NAKANO SONY CORPORATION RESEARCH CENTER	JUL-14-94	ACCPT	SPEAKER	9419633	
DR HELENA V NAZARE UNIVERSITY OF AVEIRO	APR-29-94	RGSTD	ATTENDEE	9410973	
DR RONALD C NEWMAN INTERDISCIPLINARY RESEARCH CENTRE FOR	APR-21-94	RGSTD	SPEAKER	9410272	
DR BRAIN C NIELSEN UNIVERSITY OF AARHUS	MAY-05-94	RGSTD	ATTENDEE	9412386	
DR LAMBERTUS NIESEN NUCLEAR SOLID STATE PHYSICS MATERIALS-	JUN-09-94	ACCPT	ATTENDEE	9418044	
DR JOHN E NORTHROP XEROX PARC	JUN-09-94	RGSTD	SPEAKER	9417873	
DR ARNE NYLANDSTED LARSEN AARHUS UNIVERSITY	MAY-26-94	RGSTD	SPEAKER	9415836	
DR ATUSUSHI OSHIYAMA FUNDAMENTAL RESEARCH LABORATORIS	MAY-13-94	ACCPT	ATTENDEE	9413504	
DR SERGI OSTAPENKO UNIVERSITY OF FLORIDA	JUN-02-94	ACCPT	ATTENDEE	9417180	
DR H JORG OSTEN INST OF SEMICONDUCTOR PHYSICS	MAY-19-94	RGSTD	SPEAKER	9415335	
DR JORG PALM MIT	JUN-16-94	ACCPT	ATTENDEE	9418523	
DR DEREK W PALMER UNIVERSITY OF SUSSEX	APR-14-94	RGSTD	ATTENDEE	9409360	
DR YONGJO PARK CARMEIGE MELON UNIVERSITY	JUN-24-94	ACCPT	ATTENDEE	9418999	
DR EDWARD H POINDEXTER ARMY RESEARCH LABORATORY	APR-21-94	RGSTD	DISC LDR	9410273	
DR ARTI PRASAD UNIVERSITY OF CALIFORNIA	JUN-24-94	ACCPT	ATTENDEE	9418761	
DR JOHN T PRATER ARMY RESEARCH OFFICE	APR-14-94	RGSTD	ATTENDEE	9409180	
DR SHARKA M PROKES NAVEL RESEARCH LAB	MAY-26-94	ACCPT	ATTENDEE	9416285	

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APPLICANT NAME ORGANIZATION	DATE SENT TO CHRMN	STATUS	PARTIC	APPLIC #	NEW ST
DR GEDIMINAS RACIUKAITIS VILNIUS UNIVERSITY	JUN-16-94	WTLIST	ATTENDEE	9418401	
DR FRANK B RASMUSSEN UNIVERSITY OF AARHUS	MAY-05-94	RGSTD	ATTENDEE	9412388	
**MISSING RCD. CHRMN DATE					
DR ALEXANDER I RYSKIN S. I. VAVIALOV STATE OPTICAL INSTITUTE	JUL-14-94	ACCPT	ATTENDEE	9419490	
DR AKIRA SAKAI MICROELECTRONICS RESEARCH LAB	JUN-24-94	ACCPT	ATTENDEE	9418824	
DR MATTHIAS SCHEFFLER FRITZ-HABER-INSTITUT	MAY-13-94	RGSTD	DISC LDR	9414405	
Joseph Schick Dept. of Physics	MAR-31-94	RGSTD	ATTENDEE	1000725	
DR STEFAN SCHUPPLER AT&T BELL LABORATORIES	JUN-16-94	ACCPT	ATTENDEE	9418530	
DR CARLETON H SEAGER SANDIA NATIONAL LABORATORIES	JUN-09-94	ACCPT	ATTENDEE	9418029	
**MISSING RCD. CHRMN DATE					
DR MOISZEI K SHEINKMAN INSTITUTE OF SEMICONDUCTOR PHYSICS	JUL-14-94	ACCPT	ATTENDEE	9419491	
DR LAWRENCE C SNYDER STATE UNIV OF NEW YORK, ALBANY	MAY-19-94	RGSTD	ATTENDEE	9414901	
DR FENG SONGLIN CHINESE ACADEMY OF SCIENCES	MAY-13-94	RGSTD	ATTENDEE	9414017	
DR JOHANN M SPAETH UNIVERSITY OF PADERBORN	MAY-26-94	ACCPT	SPEAKER	9416286	
DR PETER STALLINGA UNIVERSITEIT VAN AMSTERDAM	MAY-26-94	ACCPT	ATTENDEE	9416332	
DR MICHAEL J STAVOLA LEHIGH UNIVERSITY	MAY-26-94	RGSTD	CHAIR	9415832	
DR MARTIN STUTZMANN TECHNICAL UNIVERSITY MUNICH	MAR-31-94	RGSTD	ATTENDEE	9406573	
DR KOJI SUMINO INSTITUTE FOR MATERIALS RESEARCH	JUN-02-94	RGSTD	ATTENDEE	9417183	
DR JERRY D TERSOFF IBM	MAY-05-94	RGSTD	SPEAKER	9412714	
DR ANNALENA K THILDERKVIST UNIVERSITY OF LUND	JUN-02-94	RGSTD	ATTENDEE	9417003	
DR KLAUS THONKE UNIVERSITAT ULM	APR-21-94	ACCPT	ATTENDEE	1014742	
DR LARS P TILLY IBM	JUN-09-94	ACCPT	ATTENDEE	9418048	
DR STEPHEN J UFTRING LEHIGH UNIVERSITY	MAY-26-94	RGSTD	ATTENDEE	9416066	
DR CHRIS G VAN DE WALLE XEROX PARC	JUN-02-94	RGSTD	DISC LDR	9416751	

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APPLICANT NAME ORGANIZATION	DATE SENT TO CHRMM	STATUS	PARTIC	APPLIC #	NEW STA
DR KAZUMI WADA NIT LSI LABS	JUN-02-94	ACCPT	ATTENDEE	9416752	
DR SCOTT N WALCK LEHIGH UNIVERSITY	MAY-19-94	RGSTD	ATTENDEE	9415237	
DR WILLIAM W WARREN -OREGON STATE UNIVERSITY	MAR-24-94	RGSTD	ATTENDEE	9405473	
DR GEORGE D WATKINS LEHIGH UNIVERSITY	MAY-26-94	RGSTD	ATTENDEE	9416329	
DR EICKE R WEBER UC BERKELEY	MAY-05-94	ACCPT	DISC LDR	9412713	
DR JOERG WEBER MAX-PLANCK-INSTITUT F FESTKORPESFORSCH	JUN-16-94	ACCPT	DISC LDR	1014777	
DR BRUCE WESSELS NORTHWESTERN UNIVERSITY	MAR-31-94	ACCPT	ATTENDEE	1014801	
DR PHILLIP M WILLIAMS LEHIGH UNIVERSITY	MAY-26-94	ACCPT	ATTENDEE	9416330	
DR ARTHUR F WILLOUGHBY SOUTHAMPTON UNIVESITY	MAR-24-94	RGSTD	ATTENDEE	9404237	
DR NEAL D WILSEY NAVEL RESEARCH LABORATORY	JUN-24-94	ACCPT	ATTENDEE	9418760	
DR FREDERICK P WITTEL BOSTON UNIVERSITY	MAY-26-94	ACCPT	ATTENDEE	9415834	
YAHONG XIE AT&T BELL LABORATORIES	APR-21-94	RGSTD	ATTENDEE	1018327	
DR YANG YANG LEHIGH UNIVERSITY PHYSICS DEPT	JUN-24-94	ACCPT	ATTENDEE	9418931	
DR JIEFEI ZHENG LEHIGH UNIVERSITY	JUN-09-94	ACCPT	ATTENDEE	9418079	

ATTENDEES AVAILABLE:	-12
GUESTS AVAILABLE	-9
TOTAL OPEN	1
ATTENDEES ACCEPTED	121
REGISTERED	64
CANCELLED	4
WAIT LISTED	1
GUESTS ACCEPTED	9

APPROVED BY: _____

DATE: _____