30.0 RLE Publications and Papers Presented

The first section of this bibliography includes papers presented at conferences and meetings by RLE faculty, staff and students during 1987, and is in chronological order by the month the conference was held. Reprints of papers may be obtained by contacting the authors directly.

Sections 30.2 and 30.3 are alphabetical listings by author of journal articles and letters to the editor that were published or accepted for publication. Chapters by RLE authors within books are given in Section 30.4. The last two sections of the bibliography list RLE technical reports and special publications.

30.1 Meeting Papers Presented

January 1987

Physics of Quantum Electronics Conference, Snowbird, Utah, January 3-7, 1987

Ippen, E.P., “Femtosecond Studies of Material and Devices.”

169th Meeting of the American Astronomical Society, Pasadena, California, January 4-8, 1987


Opto-Electronic Laser ’87 and Electro-Optic Imaging Symposium, Los Angeles, California, January 11-16, 1987

Papers in SPIE 751:

*National Radio Science Meeting*, University of Colorado, Boulder, Colorado, January 12-15, 1987

Abstract in *Proceedings*:

*Second Topical Meeting on Picosecond Electronics and Optoelectronics*, Incline Village, Nevada, January 14-16, 1987


*Colloquium on Energy*, Polytechnic of Milan and University of Pavia, Voghera, Italy, January 17, 1987

Coppi, B., “Energy in the Universe.”

**February 1987**

*Midwinter Meeting of the Association for Research in Otolaryngology*, Clearwater, Florida, February 1-6, 1987


*Second Airborne Science Workshop*, University of Miami, Miami, Florida, February 3-6, 1987


*International Rosenbluth Symposium on Dynamics of Particles and Plasmas*, University of Texas, Austin, Texas, February 5-6, 1987

Coppi, B., “Plasma Collective Modes and Transport.”

*Optical Society of America Symposium on the Microphysics of Surfaces, Beams, and Adsorbates*, Santa Fe, New Mexico, February 14-17, 1987

Shedd, G.M., A.D. Dubner, H. Lezec, and J. Melngailis, “Focused Ion Beam Induced Deposition of Gold.”


Allen, J., Moderator for panel, “ASIC Architectures for the ’90’s.”


Coppi, B., “State and Problems on Nuclear Fusion Research.”

**March 1987**

*Advanced Course in Physics,* University of Pavia, Pavia, Italy, March 4, 1987


Abstract in *Proceedings*:


*March Meeting of the American Physical Society,* New York, March 16-20, 1987

Abstracts in *Proceedings*:


Birgeneau, R.J., “Scattering Studies of Novel Low Dimensional Phases and Phase Transitions,” p. 503.


Kaxiras, E., “Variable Stoichiometry Surface Reconstruction: New Models and Phase Transitions on GaAs(111)2x2,” p. 709. (invited paper)

Kaxiras, E., J.D. Joannopoulos, and K.C. Pandey, “New Models for the (2x4), c(2x8) and c(4x4) Surface Reconstructions of GaAs(100),” p. 710.


Needels, M.C., M.C. Payne, and J.D. Joannopoulos, “Ab-Initio Molecular Dynamics on the Ge(100) Surface,” p. 572.


New England Combined Chapter of the American Vacuum Society, Bedford, Massachusetts, March 18, 1987

Melngailis, J., “Focused Ion Beam Microfabrication.” (invited paper)


Birgeneau, R.J., “ Liquids, Crystals and Liquid Crystals.”


Selvige, C., and L. Glasser, “Power and Communications Techniques for Physically Isolated Integrated Circuits.”


Papers in Proceedings:


April 1987

Sherwood Theory Conference, San Diego, California, April 6-8, 1987

Abstracts in Proceedings:


Englade, R., “Profile Consistency and Transport Modelling,” paper 3B15.


Ramos, J.J., “Internal Kink Modes in Elongated Tokamaks with Flat Rotational Transform,” paper 2D2.


Presentation to Texas Instruments, Dallas, Texas, April 6, 1987

Allen, J., “Future Directions in DSP Chips.” (invited paper)

IEEE International Conference on Acoustics, Speech and Signal Processing, Dallas, Texas, April 6-9, 1987

Papers in ICASSP ‘87:

Allen, J., Chairman of panel, “VLSI Signal Processing Architectural Choices.”


Oak Ridge National Laboratory, Energy Division, Oak Ridge, Tennessee, April 16, 1987

Coppi, B., “Physics and Engineering Issues for Fusion Ignition Experiments.”

Conference on Lasers and Electro-Optics, Baltimore, Maryland, April 26 - May 1, 1987
Papers in *CLEO '87*:

15th *International Conference on Quantum Electronics*, Baltimore, Maryland, April 27-May 1, 1987

Papers in *IQEC '87*:
Shapiro, J.H., “Generation, Propagation, and Detection of Squeezed State Light.” (invited paper)

*IEEE Circuit Analysis and Design Workshop*, Destin, Florida, April 28, 1987

Allen, J., Organizer and chairman of the session, “Performance Directed Synthesis.”

*GEC Hirst Research Center*, Wembley, England, April 29, 1987

Melngailis, J., “Focused Ion Beam Fabrication.” (invited seminar)

*CNET*, Grenoble, France, April 30, 1987

Melngailis, J., “Microfabrication par Faisceaux D’ion Focalises.” (invited seminar)

**May 1987**

*Seventh APS Topical Conference on Applications of Radio-Frequency Power to Plasmas*, Kissimmee, Florida, May 4-6, 1987

Francis, G., A. Bers, and A.K. Ram, “Non-Resonant Mode-Coupling Model of ICRF Heating.”
NATO Workshop on Emerging Technologies for In Situ Processing, Institute of Scientific Studies at Cargese, Corsica, France, May 4-8, 1987

Melngailis, J., Organizer and co-chairman of the workshop.
Melngailis, J., “Focused Ion Beam Induced Deposition.” (invited paper)

Annual Spring Meeting of the Association for Research in Vision and Ophthalmology, Sarasota, Florida, May 4-8, 1987

Abstracts in ARVO 1987:

Hewlett Packard Internal Design Review Meeting, Berkeley, California, May 5, 1987

Allen, J., Keynote Speaker on Silicon Compilation

113th Meeting of the Acoustical Society of America, Indianapolis, Indiana, May 11-15, 1987


CNET/CNRS, Bagneux, France, May 12, 1987

Melngailis, J., “Microfabrication par faisceaux d’ions focalises.” (invited seminar)

Thompson CSF, Orsay, France, May 13, 1987

Melngailis, J., “Microfabrication par faisceaux d’ions focalises.” (invited seminar)

Bull Research Center, Paris, France, May 14, 1987

Melngailis, J., “Microfabrication par faisceaux d’ions focalises.” (invited seminar)


Papers in SPIE Proceedings 783:

International Geoscience and Remote Sensing Symposium and URSI Meeting, University of Michigan, Ann Arbor, Michigan, May 18-21, 1987


Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 18-22, 1987


Allen, J., “Performance-Directed Synthesis.”

International Workshop on High-Speed Optical Processes and Optoelectronics Devices Based on Compound Semiconductors, University of Michigan, Ann Arbor, Michigan, May 27-29, 1987

Ippen, E.P., “Femtosecond Dynamics in AlGaAs Materials and Devices.”

June 1987

Conference on Passive Microwave Observing from Environmental Satellites, Williamsburg, Virginia, June 1-4, 1987


Rosenkranz, P., “Recent Developments in Transmittance.”


Staelin, D.H., “Precipitation and Water Vapor.”

Fourth International Symposium on Gyrotron and Free Electron Laser, Chengdu, China, June 1-5, 1987


*Picture Coding Symposium*, Stockholm, Sweden, June 7-12, 1987

Martinez, D.M., and J.S. Lim, “Restoration and Interpolation of Motion Pictures by Motion Compensation.”

*IEEE Microwave and Millimeter-Wave Monolithic Circuits Symposium*, Las Vegas, Nevada, June 8-9, 1987


*Second Haystack Observatory Meeting on Interstellar Matter, Barrett Symposium*, Cambridge, Massachusetts, June 8-12, 1987

Burke, B.F., “Alan Barrett and Future Directions in Astronomy.”


*General Electric Company and Record Company of America Research Briefing*, Massachusetts Institute of Technology, Cambridge, Massachusetts, June 10, 1987

Allan, J., “Microwave and Quantum Electronics, and Microelectronics: Outlook on RLE/Lincoln Supported Research.”


*International Astronomical Union Colloquium on Bioastronomy - The Next Step*, Balatonfured, Hungary, June 14-20, 1987


*International Astronomical Union Symposium on Evolution of Large Scale Structures in the Universe*, Balatonfured, Hungary, June 14-20, 1987

Burke, B.F., “Gravitational Lenses.”
Department of Defence Alpha Particle Workshop, Germantown, Maryland, June 15-16, 1987

Coppi, B., “Plasma Oscillation Bursts and Scattering of Slowed-down MeV Particles.”

10th Annual Conference, Rehabilitation Engineering Society of North America San Jose, California, June 21-23, 1987

Durlach, N.I., C. R. Corbett, M.V.C. McConnell, W.M. Rabinowitz, P.M. Peterson, and P.M. Zurek, “Multimicrophone Monoaural Hearing Aids.”

Lin Symposium, Massachusetts Institute of Technology, Cambridge, Massachusetts, June 22-24, 1987

Coppi, B., “Physics of Space and Laboratory Plasmas.”

Eighth International Conference on Laser Spectroscopy, Are, Sweden, June 22-26, 1987

Papers in Proceedings:


Coppi, B., “Profile Consistency in Tokamaks.”

14th European Conference on Controlled Fusion and Plasma Heating, Madrid, Spain, June 22-26, 1987

Coppi, B., P. Detregiache, and F. Pegoraro, “Internal Kink Modes in the Large Larmor Radius, Long Mean Free Path Regime.”

Pegoraro, F., F. Porcelli, and T.J. Schep, “Kink Modes in the Large Gyroradius Regime.”

Conference on Electron Properties of Microstructures, Santa Barbara, California, June 29 - July 2, 1987


Rabinowitz, W.M., “Tactile Aids for the Deaf.” (invited presentation)
July 1987

Fifth International Conference on Hot Carriers in Semiconductors, Boston, Massachusetts, July 20-24, 1987

Papers in Proceedings:

United States-Japan Seminar on Quantum Mechanical Aspects of Quantum Electronics, Monterey, California, July 21-24, 1987

Papers in Proceedings:

Japan-United States Transcultural Seminar, Sendai, Japan, July 26-August 1, 1987

Kleppner, D., Plenary Address.


NASA Global Scale Atmospheric Processes Research Program Review, Columbia, Maryland, July 29, 1987


August 1987

Eleventh International Congress of Phonetic Sciences, Tallinn, Estonia, August 1-7, 1987

Papers in Proceedings:


Coppi, B., “First Ignition Experiments: Problems and Perspectives.”

International Symposium on Signal Processing and Its Applications, Brisbane, Australia, August 24-28, 1987

Papers in ISSPA ’87:


September 1987


Hartemann, F., and K. Xu, “Pulse Compression in a Free Electron Laser Amplifier.”

Second CIT-Ignition Design Meeting, Massachusetts Institute of Technology, Cambridge, Massachusetts, September 21, 1987

Coppi, B., “Compact Ignition Experiments: Physics and Design Issues”


Papers in Proceedings:


Workshop on Defects and Interfaces in Solids, Columbus, Ohio, September 29 - October 1, 1987

Joannopoulos, J.D., “Grain Boundary in Solids.”

October 1987


Allen, J., “Representation Issues for System Synthesis.”


38th International Astronautical Federation Congress, Brighton, England, October 10-17, 1987


Optical Society of America Annual Meeting, Rochester, New York, October 18-23, 1987

Workshop on Active Experiments in Space, Kyoto, Japan, October 19-20, 1987


Allen, J., Invited Presentation.


Melngailis, J., “Focused Ion Beam Processing of Compound Semiconductor.”
(invited paper)


Smith, H.I., “Fabrication and Performance of Sub-100 nm Electronic Devices.”

November 1987

Fall Meeting of the Division of Plasma Physics, American Physical Society, San Diego, California, November 2-7, 1987


Bekefi, G., “Measurements of Wave Profile Modification (Optical Guiding) Induced by the Free Electron Laser Interaction.”


Chow, C., A.K. Ram, and A. Bers, “Mode-Conversion and Damping in ICRH at Finite Ion-Betas.”


Coppi, B., “Global and Nonlinear Energy Transport.”

Detregiache, P., B. Coppi, and F. Pegoraro, “Resistive Kink Modes in Kinetic Plasma Regimes.”

Englade, R., “Ohmic Ignition in a Compact Toroidal Device of Ignitor Type.”

Francis, G., A. Bers, and A.K. Ram, “Mode-Boundary Expansion of Coupled Mode Instabilities in Inhomogeneous Plasmas.”


Porcelli, F., B. Coppi, and S. Migliuolo, “Plasma Oscillations Bursts and Scattering of Intermediate Energy $\alpha$ Particles.”

Pu, Y.K., S. Migliuolo, and B. Coppi, “Collisional Ubiquitous Mode.”


*Speech Processing Symposium, Middletown, New Jersey, November 4-6, 1987*
Lim, J.S., “4800 BPS High Quality Speech Coding System.”

*NEC*, Kawasaki, Japan, November 10, 1987

Melngailis, J., “Focused Ion Beam Research at MIT.” (invited seminar)

*International Conference on Computer-Aided Design*, Santa Clara, California, November 12, 1987

Allen, J., Chairman of session on control path synthesis.

*NTT/Astugi Laboratories*, Astugi, Japan, November 12, 1987

Melngailis, J., “Focused Ion Beam Research at MIT.” (invited seminar)

*Hitachi Research Center*, Kokubunji, Japan, November 13, 1987

Melngailis, J., “Focused Ion Beam Research at MIT.” (invited seminar)


*Joint Japan/United States Seminar on Focused Ion Beam Technology and Applications*, Osaka, Japan, November 15-20, 1987

Melngailis, J., U.S. chairman of the seminar.


Ro, J.S., A.D. Dubner, C.V. Thompson, and J. Melngailis, “Ion Induced Deposition of Gold Films.”

*114th Meeting of the Acoustical Society of America*, Miami, Florida, November 16-20, 1987


Grant, K.W., “Evaluating the Articulation Index for the Auditory-Visual Input.”

Isabelle, S.K., and H.S. Colburn, “Effects of Target Phase in Narrowband Frozen Noise Detection Data.”


Rabinowitz, W.M., and P.M. Peterson, “Directional Processing for Interference Reduction in Hearing Aids.”


Reed, C.M., W.M. Rabinowitz, and N.I. Durlach, “Tactile Speech Reception Using Augmented Tadoma.”


Fujitsu Laboratories, Atsugi, Japan, November 30, 1987

Melngailis, J., “Focused Ion Beam Research at MIT.” (invited seminar)

Toshiba Laboratories, Kawasaki, Japan, November 30, 1987

Melngailis, J., “Focused Ion Beam Research at MIT.” (invited seminar)

Materials Research Society Meeting, Boston, Massachusetts, November 30-December 5, 1987

Papers in Proceedings:


Ro, J.S., A.D. Dubner, C.V. Thompson, and J. Melngailis, “Microstructure of Gold Films Grown by Ion Induced Deposition.”

December 1987

Workshop on Femtosecond Physics in Semiconductors, Arizona State University, Tempe, Arizona, December 9-11, 1987

Fujimoto, J.G. “Femtosecond Transient Absorption Saturation Studies of Carrier Relaxation in GaAs.”

National Science Foundation Workshop on Physics of Devices, Madras, India, December 10-12, 1987

Allen, J., “Performance Directed Synthesis of VLSI Systems.”

Symposium on Speech Communication and Processing, Massachusetts Institute of Technology, Cambridge, Massachusetts, December 14, 1987
Allen, J., Welcome and introduction.
Braida, L.D., “Speech Processing Aids for the Handicapped.”
Lim, J.S., “Coding, Enhancement, and Time Scale Modification of Speech.”


58th Statistical Mechanics Meeting, Rutgers University, New Brunswick, New Jersey, December 17-18, 1987
Hui, K., “Reentrant Behavior of an Anti-Metamagnet in a Magnetic Field.”

30.2 Journal Articles

30.2.1 Published Journal Articles


30.2.2 Articles Accepted for Publication in Journals


Simonson, R.J., J.R. Wang, and S.T. Ceyer, “Spectroscopy Study of the Adsorption of $\text{C}_2\text{H}_4$ and $\text{C}_2\text{H}_2$ on a Rare Earth Single Crystal. II. Oxidized Gd(0001),” *J. Phys. Chem*.


### 30.3 Letters to the Editor

#### 30.3.1 Published Letters


### 30.3.2 Letters to the Editor Accepted for Publication


### 30.4 Chapters in Books


### 30.5 Reports Published

These reports may be obtained from the Communications Office, 36-412, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, at the cost listed. Please include a check made out to RLE and allow six to eight weeks for surface mail. Foreign airmail postage is an additional $4.00 for each report ordered.


Coppi, B., Direct Approach to Achieving Ignition Conditions. RLE PTP-87-4. MIT, 1987. $5.00.


### 30.6 Special Publications

The publications listed below are available from RLE at no cost.


Seated: Senior Staff Assistant Donna L. Gale. Standing: Administrative Assistant Cynthia Y. Kopf.

Administrative Assistant Andrea L. Gelinans and Technical Staff John D. Kierstead.

Left to right: Technical Staff John W. Barrett and Research Associate Dr. Phillip W. Rosenkranz.