Third Topical Meeting on Picosecond Phenomena

Garmisch-Partenkirchen, Fed. Rep. Germany, June 16–18, 1982

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K.B. Eisenthal and *A. Laubereau*, Program Co-Chairpersons

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Wednesday, June 16, 1982

Opening Remarks

R.M. Hochstrasser and W. Kaiser
Conference Co-Chairpersons

Session I (E.P. Ippen, Presider)

WA 1 *Invited Paper*
Moving from Picoseconds to Femtoseconds
C.V. Shank, R.L. Fork, and R.T. Yen
Bell Telephone Laboratories, Holmdel, NJ 07733, USA

WA 2 **Generation of Coherent, Tunable, Ultrashort Pulses in the XUV**
T. Srinivasan, K. Boyer, H. Egger, T.S. Luk, D.F. Muller, H. Pummer, and C.K. Rhodes
University of Illinois at Chicago Circle, Chicago, IL 60680, USA

WA 3 **New Infrared Dyes for Synchronously Picosecond Lasers**
A. Seilmeier, B. Kopainsky, W. Kranitzky, and W. Kaiser
Physik Department der Technischen Universität, D-8000 München, F. R. Germany
K.H. Drexhage
Physikalische Chemie der Universität, D-5900 Siegen, F. R. Germany

WA 4 *Invited Paper*
New Picosecond Sources and Techniques
A.E. Siegman
Edward L. Ginzton Laboratory, University, Stanford, CA 94305, USA
H. Vanherzeele
Vrije Universiteit Brussel, B-1050 Brussel, Belgium

WA 5 **Synchronously Pumped, Mode Locked Laser Action with Color Centers Having Microsecond Luminescence Decay Times**
L.F. Mollenauer
Bell Laboratories, Holmdel, NJ 07733, USA

Session II (W. Robinson, Presider)

WB 1 *Invited Paper*
Unimolecular Processes and Vibrational Energy Randomization
R.A. Marcus
A. A. Noyes Laboratory of Chemical Physics
California Institute of Technology, Pasadena, CA 91125, USA

WB 2 **Vibrational Predissociation of S-Tetrazine-Ar Van der Waals-Molecules**
J. Langelaar, J. Ramaekers, and R.P.H. Rettschnick
Laboratory for Physical Chemistry, University, NL-1018 WS Amsterdam, The Netherlands

WB 3 *Invited Paper*
Picosecond Coherent Excitation of Large Molecules in Supersonic Jets
A.H. Zewail
A.A. Noyes Laboratory of Chemical Physics, California Institute of Technology, Pasadena, CA 91125, USA

WB 4 *Invited Paper*
Electronic Relaxation in Large Ultracold Molecules
J. Jortner
Institute of Chemistry, University, IL-61390 Tel-Aviv, Israel

Session III (O. Svelto, Presider)

WC 1 *Invited Paper*
Studies of the Generation and Energy Relaxation in Chemical Intermediates. Divalent Carbon Molecules and Singlet Oxygen
K.B. Eisenthal
Department of Chemistry, Columbia University, New York, NY 10027, USA

WC 2 **Picosecond Dynamics of Unimolecular Ion Pair Formation**
K.G. Spears, T.H. Gray, and D. Huang
Department of Chemistry, Northwestern University, Evanston, IL 60201, USA

WC 3 **Picosecond Dynamics of Organic Reactions Involving Ion Pairs**
K.S. Peters
Department of Chemistry, Harvard University, Cambridge, MA 02138, USA

WC 4 *Invited Paper*
Subpicosecond Tunable Spectroscopy: Pulse Diagnostics and Molecular Dynamics in Liquids
G.A. Kenney-Wallace
Departments of Chemistry and Physics, University, Toronto, Canada M5S 1A1

WC 5 **Dynamics of Photoisomerization**
G.R. Fleming, S.P. Velsko, and D.H. Waldeck
Department of Chemistry and James Franck Institute, University, Chicago, IL 60637, USA

WC 6 **Study of Primary Process of Dimethylamino-phenylazide with the Use of Subpicosecond, Picosecond, and Nanosecond Lasers**
T. Kobayashi and H. Ohtani
Department of Physics, University, Hongo, Bunkyo, Tokyo, Japan
K. Suzuki
Department of Chemistry, University, Hongo, Bunkyo, Tokyo, Japan

Session IV – Poster Papers

WD 1 **Subpicosecond Pulse Shape Measurement and Modeling of a Passively Mode Locked Dye Laser Including Mutual Interaction in a Dye Jet**
J.-C. Diels, I.C. McMicheal
Center for Applied Quantum Electronics, North Texas State University, Denton, TX 76203, USA
J.-J. Fontaine
Laboratoire de Spectroscopie et d'Optique du Corps Solids (LSOCS, CNRS), Université, F-6700 Strasbourg, France
C.Y. Wang
Tientsi University, Optical Department, Tientsi, The Peoples Republic of China

WD 2 **Theoretical and Experimental Investigations of the Colliding Pulse Mode Locking (CPM)**
W. Dietel, D. Kühlke, W. Rudolph, and B. Wilhelmi
Sektion Physik der Friedrich Schiller Universität, DDR-6900 DDR-6900 Jena, German Democratic Republic

WD 3 **Single and Double Mode-Locked Ring Dye Lasers. Theory and Experiment**
K.K. Li, G. Arjavalingam, and J.R. Whinnery
Electronics Research Laboratory, University of California, Berkeley, CA 94720, USA
A. Dienes
Electronics Research Laboratory, University of California, Berkeley, and Department of Electrical Engineering and Computer Sciences, University of California, Davis, CA 95616, USA

WD 4 **Picosecond Distributed Feedback Dye Laser Tunable in a Broad Spectral Range**
A.N. Rubinov, I. Chesnulyavichus, and T.Sh. Efendiev
Institute of Physics, Academy of Sciences of the Byelorussian SSR, SU-220602 Minsk, USSR

WD 5 **Active Mode Stabilization of a Synchronously Pumped Dye Laser**
A.I. Ferguson and R.A. Taylor
Claredon Laboratory, University, Oxford OX1 3PU, UK

WD 6 **An Energy-Transfer Dye Mixture for Synchronously-Pumped Picosecond Pulse Generation from 710 to 800 nm**
R. Boggy and E.G. Marason
Spectra-Physics, Mountain View, CA 94042-7303, USA

WD 7 **Spectral Hole Burning in the Saturation Region of Mode-Locked Nd-Glass Lasers**
A. Penzkofer and N. Weinhardt
Naturwissenschaftliche Fakultät II – Physik, Universität, D-8400 Regensburg, F. R. Germany

WD 8 **Two Photon Pumped Bulk Semiconductor Laser for the Generation of Picosecond Pulses**
Wei-Lou Cao, Fei-Ming Tong, De-sen Shao, V.K. Mathur, and Chi H. Lee
Electrical Engineering Department, University of Maryland, College Park, MO 20742, USA

WD 9 **Acousto-Optic Stabilization of Mode-Locked Pulsed Nd:YAG Laser**
H.P. Kortz
Quantel International, Santa Clara, CA 95050, USA

WD 10 **A Novel Method of Generation Sub-Transform Limited Nd:YAG Picosecond Laser Pulses**
H.S. Kwok
Department of Electrical and Computer Engineering, State University of New York at Buffalo, Amherst, NY 14226, USA

WD 11 **Modelocking of a Wavelength Tunable High-Pressure CO_2-Laser by Synchronous Modulation of a Broadband Intracavity Saturable Absorber**
J.K. Ajo, Y. Hefetz, and A.V. Nurmikko
Division of Engineering, Brown University, Providence, RI 02912, USA

WD 12 **Picosecond Optoelectronic Modulation of Millimeter-Waves in GaAs Waveguide**
M.G. Li, V.K. Mathur, and Chi H. Lee
Department of Electrical Engineering, University of Maryland College Park, MD 20742, USA

WD 13 Surface Metal-Oxide-Silicon-Oxide-Metal Picosecond Photodetector

S. Thaniyavarn and T.K. Gustafson
Department of Electrical Engineering and Computer Science, and Electronics Research Laboratory, University of California, Berkeley, CA 94720, USA

WD 14 Solid-State Detector for Single-Photon Measurements of Fluorescence Decays with 100 ps FWHM Resolution

A. Andreoni, S. Cova, R. Cubeddu, and A. Longoni
Centro Elettronica Quantistica e Strumentazione Elettronica, C.N.R. Istituto di Fisica del Politecnico, I-20133 Milano, Italy

WD 15 Synchroscan Streak Camera Measurements of Mode Propagation in Optical Fibres

J.P. Willson, W. Sibbett, and P.G. May
Optics Section, Blackett Laboratory, Imperial College, London SW7 2BZ, England

WD 16 Jitter-Free Streak Camera System

W. Knox, T.M. Nordlund, and G. Mourou
Laboratory for Laser Energetics, University, Rochester, NY 14623, USA

WD 17 Femtosecond Continuum Generation

R.L. Fork, C.V. Shank, R.T. Yen, and C. Hirliman
Bell Laboratories, Holmdel, NJ 07733, USA

WD 18 A Broadband CARS Probe Using the Picosecond Continuum

L.S. Goldberg
Naval Research Laboratory, Washington, DC 20375, USA

WD 19 P-BR and its Role in the Photocycle of Bacteriorhodopsin

T. Gillbro and V. Sundström
Division of Physical Chemistry, University, S-901 87 Umeå, Sweden

WD 20 Picosecond Linear Dichroism Spectroscopy of Retinal

M.E. Lippitsch, M. Riegler, and F.R. Aussenegg
Institut für Experimentalphysik, Universität, A-8010 Graz, Austria
L. Margulies
Isotope Department, The Weizmann Institute of Science, Rehovot, Israel

WD 21 Picosecond Absorption Spectroscopy of Biliverdin

M.E. Lippitsch, M. Riegler, A. Leitner, and F.R. Aussenegg
Institut für Experimentalphysik, Universität, A-8010 Graz, Austria

WD 22 Subpicosecond Deoxymyoglobin Transient Absorption Spectrum from Photolysed Carbonmonoxy-Myoglobin

J.L. Martin, C. Poyart, A. Migus, Y. Lecarpentier, R. Astier, and J.P. Chambaret
Groupe de Spectroscopie Picoseconde, Laboratoire d'Optique Appliquée, Ecole Polytechnique, ENSTA, F-91120 Palaiseau, France

WD 23 Picosecond Fluorescence Spectroscopy of Hematoporphyrin Derivative. Derivative and Related Porphyrins

M. Yamashita and T. Sato
Laser Research Section, Radio- & Opto-Electronics Division, Electrotechnical Laboratory, Ibaraki-ken 305, Japan
K. Aizawa and H. Kato
Tokyo Medical College, Tokyo 160, Japan

Session V (Y.R. Shen, Presider)

WE 1 *Invited Paper*

Picosecond Laser Interaction with Solid Surfaces

N. Bloembergen
Harvard University, Division of Applied Sciences Cambridge, MA 02138, USA

WE 2 Picosecond Carrier Dynamics and Laser Action in Optically Pumped Buried Heterostructure Lasers

T.L. Koch, L.C. Chiu, C. Harder, and A. Yariv
California Institute of Technology, Pasadena, CA 91125, USA

WE 3 *Invited Paper*

Picosecond Spectroscopy of Excitonic Molecules and High Density Electron-Hole Plasma in Direct-Gap Semiconductors

S. Shionoya
The Institute for Solid State Physics, University, Tokyo 106, Japan

WE 4 Picosecond Time-Resolved Study of Highly Excited CuCl

D. Hulin and A. Mysyrowicz
G.P.S., Ecole Normale Supérieure, F-7500 Paris, France
A. Antonetti, G. Hamoniaux, and A. Migus
ENSTA, Ecole Polytechnique, F-91120 Palaiseau, France
L.L. Chase
Physics Department, Indiana University, Bloomington, IN 47405, USA

WE 5 Time-Resolved Measurements of Electron Population Distribution in ZnTe Following UV and Visible Picosecond Excitation

T.R. Royt, R.T. Williams, J.P. Long, J.C. Rife, and M.N. Kabler
Naval Research Laboratory, Washington, DC 20375, USA

Thursday, June 17, 1982

Session VI (J.A. Giordmaine, Presider)

TA 1 *Invited Paper*

Picosecond Lifetimes and Efficient Decay Channels of Vibrational Modes of Polyatomic Molecules in Liquids

C. Kolmeder, W. Zinth, and W. Kaiser
Physik Department der Technische Universität, D-8000 München, F. R. Germany

TA Mechanisms for Ultrafast Vibrational Energy Relaxation of Polyatomic Molecules

S.F. Fischer
Physik Department der Technischen Universität München, D-8046 Garching, F. R. Germany

TA 3 **Picosecond Studies of Intramolecular Vibrational Redistribution in S_1 p-Difluorobenzene Vapor**

C.S. Parmenter, B.M. Stone, S.C. Munchak, D.A. Dolson, and R.A. Coveleskie
Department of Chemistry, Indiana University, Bloomington, IN 47405, USA

TA 4 **Infrared Double Resonance Studies of Intramolecular Energy Transfer**

R.C. Sharp, E. Yablonovitch, and N. Bloembergen
Gordon McKay Laboratory, Harvard University, Cambridge, MA 02138, USA

TA 5 *Invited Paper*
Vibrational Population Decay and Dephasing of Small and Large Polyatomic Molecules in Liquids

H. Graener, D. Reiser, H.R. Telle, and A. Laubereau
Physikalisches Institut, Universität, D-8580 Bayreuth, F. R. Germany

TA 6 **The Separation of Rapidly and Slowly Varying Intermolecular Forces in Liquids Using the Temperature Dependence of Coherent Picosecond Stokes Scattering**

C.B. Harris, S.M. George, A.L. Harris, and M. Berg
Department of Chemistry, University of California, and Materials and Molecular Research Division, Lawrence Berkeley Laboratory, Berkeley, CA 94720, USA

TA 7 **Time Resolved Measurement of Non-Linear Susceptibilities by Optical Kerr Effect**

J. Etchepare, G. Grillon, R. Astier, J.L. Martin, C. Bruneau, and A. Antonetti
Groupe Spectroscopie Picoseconde, Laboratoire d'Optique Appliquée, Ecole Polytechnique, ENSTA, F-91120 Palaiseau, France

TA 8 **Picosecond Dynamics of I_2 Photodissociation**

K.R. Wilson
Department of Chemistry, University of California, San Diego, CA 92093, USA

Session VII – Poster Papers

TB 1 **Reduced Repetition Rate High Quality Synchronized Picosecond Pulse Trains for Surface and Bulk Nonlinear Spectroscopy**

J.P. Heritage, D.S. Chemla, and P.F. Liao
Bell Telephone Laboratories, Holmdel, NJ 07733, USA

TB 2 **Picosecond Resolution Studies of Ground State Quantum Beats and Rapid Collisional Relaxation Processes in Sodium Vapor**

R.K. Jain and H.W.K. Tom
Hughes Research Laboratories, Malibu, CA 90265, USA
J.C. Diels
North Texas State University, Denton, TX 76203, USA

TB 3 **Experimental Demonstration of a New Technique to Measure Ultrashort Dephasing Times**

J.-C. Diels
Center for Applied Quantum Electronics, North Texas State University, Denton, TX 76203, USA
W.C. Wang
University of Southern California, Los Angeles, CA 90007, USA
R.K. Jain
Hughes Research Laboratory, Malibu, CA 90265, USA

TB 4 **Polariton Induced Compensation of Picosecond Pulse Broadening in Optical Fibers**

G.W. Fehrenbach and M.M. Salour
Research Laboratory of Electronics and Department of Electrical Engineering and Computer Science, MIT, Cambridge, MA 02139, USA

TB 5 **A Picosecond Car-Spectrometer Using Two Synchronously Mode-Locked cw Dye Lasers**

J. Kuhl
Max-Planck-Institut für Festkörperforschung, D-7000 Stuttgart, F. R. Germany
D. von der Linde
Fachbereich Physik, Universität, D-4300 Essen, F. R. Germany

TB 6 **Periodic Ripple Structures of Semiconductors Under Picosecond Pulse Illumination**

P.M. Fauchet and A.E. Siegman
Edward L. Ginzton Laboratory, Stanford University, Stanford, CA 94305, USA

TB 7 **Time Resolved Spatial Expansion of the Electron-Hole Plasma in Polar Semiconductors**

A. Cornet, T. Amand, M. Pugnet, and M. Brousseau
Laboratoire de Physique des Solides, Associé au CNRS, INSA, F-31077 Toulouse Cédex, France

TB 8 **Non-Linear Attenuation of Excitonic Polariton Pulses in CdSe**

P. Lavallard and Pham Hong Duong
Groupe de Physique Solides de l'E.N.S., Université Paris VII, Tour 23, F-75221 Paris Cédex, France

TB 9 **Time Resolved Photoluminescence Study of *n* Type CdS and CdSe Photoelectrode**

D. Huppert, Z. Harzion, and S. Gottesfeld
Department of Chemistry, University of Tel-Aviv, Israel
N. Croitoru
Department of Electronics, University of Tel-Aviv, Israel

TB 10 **Nonlinear Interactions in Indium Antimonide**

M. Hasselbeck, S.C. Hsu, and H.S. Kwok
Department of Electrical and Computer Engineering, State University of New York at Buffalo, Amherst, NY 14226, USA

TB 11 **Picosecond Dynamics of Excitonic Polariton in CuCl**

Y. Aoyagi, Y. Segawa, and S. Namba
The Institute of Physical and Chemical Research, Wako-shi, Saitama, 351, Japan

TB 12 **Transmission of Picosecond Laser-Excited Germanium at Various Wavelengths**

C.Y. Leung and T.W. Nee
Department of Physics, National Central University, Chung-Li, Taiwan 320, ROC

TB 13 **Weak-Wave Retardation and Phase-Conjugate Self-Defocusing in Si**

E.W. Van Stryland, A.L. Smirl, T.F. Boggess, and M.J. Soileau
Center of Applied Quantum Electronics, North Texas State University, Denton, TX 76203, USA
F.A. Hopf
Optical Sciences Center, University of Arizona, Tuscon, AZ 85721, USA

TB 14 Rotational Diffusion in Mixed Solvents Measured by Picosecond Fluorescence Anisotropy

T. Doust and G.S. Beddard
Davy Faraday Research Laboratory, The Royal Institution, London W1X 4BS, UK

TB 15 Kinetics of Stimulated and Spontaneous Emission of Dye Solutions Under Picosecond Excitation

B.A. Bushuk, A.N. Rubinov, A.A. Murav'ov, and A.P. Stupak
Institute of Physics, BSSR Academy of Sciences, SU-220602 Minsk, USSR

TB 16 Measurements of Level Kinetics and Reorientation Processes with High Time Resolution

D. Schubert, J. Schwarz, H. Wabnitz, and B. Wilhelmi
Sektion Physik der Friedrich-Schiller-Universität, DDR-6900 Jena, German Democratic Republic

TB 17 Direct Picosecond Resolving of Hot Luminescence Spectrum

J. Aaviksoo, A. Anijalg, A. Freiberg, M. Lepik, P. Saari, T. Tamm, and K. Timpmann
Institute of Physics, Estonian SSR Academy of Sciences, SU-202400 Taru, USSR

TB 18 Effect of Polymerization on the Fluorescence Lifetime of Eosin in Water

Wei-Zhu Lin, Yeng-Lian Zhang, and Xin-Dong Fang
Laser Optics Spectroscopy Laboratory, Physics Department, Zhongshan University, Guangzhou, China

TB 19 Picosecond Study of the Intersystem Crossing in Aromatic Ketone Vapors

N.A. Borisevich, Yu.I. Bubekov, and G.B. Tolstorozhev
Byelorussian Academy of Science, SU-220602 Minsk, USSR
J. Viscakas, V. Kabelka, and A. Milyauskas
Lithuanian Academy of Science, SU-232600 Vilnius, USSR

TB 20 Excited State Proton Transfer in 2-(2'Hydroxyphenyl) Benzoxazole

G.J. Woolfe, M. Melzig, S. Schneider, and F. Dörr
Institut für Physikalische und Theoretische Chemie der Technischen Universität München, D-8046 Garching, F. R. Germany

TB 21 Studies of Intramolecular Charge Transfer Processes in Excited A–D Molecules

H. Staerk, R. Mitzkus, and A. Weller
Max-Planck-Institut für Biophysikalische Chemie, D-3400 Göttingen, F. R. Germany

TB 22 Picosecond Laser Induced Fluorescence Probing of NO_2 Photofragments

P.E. Schoen, M.J. Marrone, L.S. Goldberg
Naval Research Laboratory, Washington, DC 20375, USA

TB 23 Evidence for the Existence of a Short-Lived Twisted Electronic State in Some Triphenylmethane Dyes

V. Sundström, T. Gillbro, and H. Bergström
Division of Physical Chemistry, University, S-90187 Umeå, Sweden

Session VIII (D.J. Bradley, Presider)

TC 1 *Invited Paper*

Spectroscopy of Picosecond Relaxation Processes in Semiconductors

D. von der Linde
Fachbereich Physik, Universität, D-4300 Essen, F. R. Germany
J. Kuhl
Max-Planck-Institut für Festkörperforschung, D-7000 Stuttgart, F. R. Germany

TC 2 Picosecond Spectroscopy of Highly Excited GaAs and CdS

H. Saito, W. Graudszus, and E.O. Göbel
Max-Planck-Institut für Festkörperforschung, D-7000 Stuttgart, F. R. Germany

TC 3 Self-Diffraction from Laser-Induced Orientational Gratings in Semiconductors

A.L. Smirl, T.F. Boggess, B.S. Wherrett, G.P. Perryman, and A. Miller
Center for Applied Quantum Electronics, North Texas State University, Denton, TX 76203, USA

TC 4 *Invited Paper*

Picosecond Relaxation Kinetics of Highly Photogenerated Carriers in Semiconductors

R.R. Alfano, S.S. Yao, and M. Junnarkar
Ultrafast Spectroscopy and Laser Laboratory, Physics Department, The City College of New York, NY 10031, USA

TC 5 High-Resolution Picosecond Modulation Spectroscopy of Near Interband Resonances in Semiconductors

S. Sugai, J.H. Harris, and A.V. Nurmikko
Division of Engineering, Brown University, Providence, RI 02912, USA

Session IX (M. Windsor, Presider)

TD 1 *Invited Paper*

Picosecond Processes Involving Hemeproteins and Aqueous Ionic Systems

R.M. Hochstrasser
Department of Chemistry, University of Pennsylvania, Philadelphia, PA 19104, USA

TD 2 Picosecond Time-Resolved Resonance Raman Spectroscopy of the Photolysis Product of Oxy-Hemoglobin

J. Terner and T.G. Spiro
Department of Chemistry, University, Princeton, NJ 08544, USA
D.F. Voss, C. Paddock, and R.B. Miles
Department of Mechanical and Aerospace Engineering, University, Princeton, NJ 08544, USA

TD 3 *Invited Paper*

Resonance Raman Spectroscopy of Picosecond Transients and the Mechanism of Two Important Photobiological Transformations

M.A. El-Sayed
Department of Chemistry, University of California, Los Angeles, CA 90024, USA

TD 4 **Picosecond Studies of Bathorhodopsin Intermediates from 11-*cis* Rhodopsin and 9-*cis* Rhodopsin**
J.-D. Spalink
Bell Laboratories, North Andover, MA 01845, USA
M.L. Applebury
Department of Biochemical Sciences, Princeton University, Princeton, NJ 08544, USA
W. Sperling
Institut für Neurobiologie, Kernforschungsanlage Jülich, D-5170 Jülich, F. R. Germany
A.H. Reynolds and P.M. Rentzepis
Bell Laboratories, Murray Hill, NJ 07974, USA

TD 5 *Invited Paper*
Multiphoton Processes in Molecules Induced by Picosecond Laser Pulses
V.S. Letokhov
Institute of Spectroscopy, Academy of Science, SU-142092 Moscow, Troitzk, USSR

TD 6 **The Relationship Between Energy Transfer and Charge Separation in Photosynthesis Picosecond Absorption Data**
R. Danielius, A. Piskarskas, and A. Razjivin
University of Vilnius, Vilnius, USSR

Friday, June 18, 1982

Session X (C. Flytzanis, Presider)

FA 1 *Invited Paper*
Picosecond Photon Echo- and Coherent Raman Scattering-Studies of Dephasing in Mixed Molecular Crystals
D.A. Wiersma
Picosecond Laser and Spectroscopy Laboratory, Department of Chemistry, University of Groningen, The Netherlands

FA 2 *Invited Paper*
New Developments in Picosecond Time-Resolved Fluorescence Spectroscopy: Vibrational Relaxation Phenomena
B.P. Boczar and M.R. Topp
Department of Chemistry, University of Pennsylvania, Philadelphia, PA 19104, USA

FA 3 *Invited Paper*
Picosecond Holographic Grating Experiments on Molecular Condensed Phases
M.D. Fayer
Chemistry Department, Stanford University, Stanford, CA 94305, USA

FA 4 *Invited Paper*
Picosecond Studies of Biomolecules
S.L. Shapiro
National Bureau of Standards, Washington, DC

Session XI (D.J. Bradley, Presider)

FB 1 *Invited Paper*
Picosecond Optical Electronics: A New Approach to Very High Speed Electronic Instrumentation
D.H. Auston and P.R. Smith
Bell Laboratories, Murray Hill, NJ 07974, USA

FB 2 **Logic Level Switching and Logic Function Control in High Speed Logic Circuits Addressed by Picosecond Light Pulses**
R.K. Jain, J.E. Brown, and D.E. Snyder
Hughes Research Laboratories, Malibu, CA 90265, USA

FB 3 **Measurement of Picosecond Ultraviolet Laser Pulsewidths Using an Electrical Autocorrelator**
J. Bokor, P.H. Bucksbaum, and J.C. White
Bell Telephone Laboratories, Holmdel, NJ 07733, USA
D.H. Auston
Bell Telephone Laboratories, Murray Hill, NJ 07974, USA

FB 4 *Invited Paper*
Electron Diffraction in the Picosecond Domain
S. Williamson and G. Mourou
Laboratory of Laser Energetics, University of Rochester, Rochester, NY 14623, USA

FB 5 **Optical Pulse Compression with Reduced Wings**
D. Grischkowsky and A.C. Balant
IBM Watson Research Center, Yorktown Heights, NY 10598, USA

FB 6 **Optically Pumped Semiconductor Lasers in External Cavities**
M.M. Salour
Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA 02139, USA

FB 7 **The Pulse Duration of a Distributed Feedback Dye Laser Under Single Pulse Conditions**
Zs. Bor, B. Rácz, and G. Szabó
JATE University, Department of Experimental Physics, H-6720 Szeged, Hungary
A. Müller
Max-Planck-Institut für biophysikalische Chemie, D-3400 Göttingen, F. R. Germany

Session XII (T.K. Gustafson, Presider)

FC 1 *Invited Paper*
Photoexcited Carrier Decay Dynamics in 1.3 μ InGaAsP
J.P. Heritage, B. Sermage, and H.J. Eichler
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FC 2 **Ultrafast Relaxations of Photoinduced Carriers in Amorphous Semiconductors**
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FC 3 **Picosecond Radiative and Nonradiative Recombination in Amorphous As_2S_3**
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FC 4 **Optical Dephasing in Inorganic Glasses**
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