



Michael Fayer

David Mulvane Ehrsam and Edward Curtis Franklin Professor in Chemistry

 Curriculum Vitae available Online

CONTACT INFORMATION

• Administrative Contact

Teresa Throckmorton - Administrative Associate

Email tsthrock@stanford.edu

Tel (650) 725-9741

Bio

BIO

My research group studies complex molecular systems by using ultrafast multi-dimensional infrared and non-linear UV/Vis methods. A basic theme is to understand the role of mesoscopic structure on the properties of molecular systems. Many systems have structure on length scales large compared to molecules but small compared to macroscopic dimensions. The mesoscopic structures occur on distance scales of a few nanometers to a few tens of nanometers. The properties of systems, such as water in nanoscopic environments, room temperature ionic liquids, functionalized surfaces, liquid crystals, metal organic frameworks, water and other liquids in nanoporous silica, polyelectrolyte fuel cell membranes, vesicles, and micelles depend on molecular level dynamics and intermolecular interactions. Our ultrafast measurements provide direct observables for understanding the relationships among dynamics, structure, and intermolecular interactions.

Bulk properties are frequently a very poor guide to understanding the molecular level details that determine the nature of a chemical process and its dynamics. Because molecules are small, molecular motions are inherently very fast. Recent advances in methodology developed in our labs make it possible for us to observe important processes as they occur. These measurements act like stop-action photography. To focus on a particular aspect of a time evolving system, we employ sequences of ultrashort pulses of light as the basis for non-linear methods such as ultrafast infrared two dimensional vibrational echoes, optical Kerr effect methods, and ultrafast IR transient absorption experiments.

We are using ultrafast 2D IR vibrational echo spectroscopy and other multi-dimensional IR methods, which we have pioneered, to study dynamics of molecular complexes, water confined on nm length scales with a variety of topographies, molecules bound to surfaces, ionic liquids, and materials such as metal organic frameworks and porous silica. We can probe the dynamic structures these systems. The methods are somewhat akin to multidimensional NMR, but they probe molecular structural evolution in real time on the relevant fast time scales, eight to ten orders of magnitude faster than NMR. We are obtaining direct information on how nanoscopic confinement of water changes its properties, a topic of great importance in chemistry, biology, geology, and materials. For the first time, we are observing the motions of molecular bound to surfaces. In biological membranes, we are using the vibrational echo methods to study dynamics and the relationship among dynamics, structure, and function. We are also developing and applying theory to these problems frequently in collaboration with top theoreticians.

We are studying dynamics in complex liquids, in particular room temperature ionic liquids, liquid crystals, supercooled liquids, as well as in influence of small quantities of water on liquid dynamics. Using ultrafast optical heterodyne detected optical Kerr effect methods, we can follow processes from tens of femtoseconds to ten microseconds. Our ability to look over such a wide range of time scales is unprecedented. The change in molecular dynamics when a system undergoes a phase change is of fundamental and practical importance. We are developing detailed theory as the companion to the experiments.

We are studying photo-induced proton transfer in nanoscopic water environments such as polyelectrolyte fuel cell membranes, using ultrafast UV/Vis fluorescence and multidimensional IR measurements to understand the proton transfer and other processes and how they are influenced by nanoscopic confinement. We want to understand the role of the solvent and the systems topology on proton transfer dynamics.

ACADEMIC APPOINTMENTS

- Professor, Chemistry
- Member, Bio-X

ADMINISTRATIVE APPOINTMENTS

- Professor of Chemistry, Stanford University, (1984-2000)
- Associate Professor of Chemistry, Stanford University, (1980-1984)
- Assistant Professor of Chemistry, Stanford University, (1974-1980)
- Professor of Physics, University of Grenoble, (1982-1982)

HONORS AND AWARDS

- Ahmed Zewail Award in Ultrafast Science and Technology, American Chemical Society (2014)
- Arthur L. Schawlow Prize in Laser Science, American Physical Society (2012)
- Ellis R. Lippincott Award, Optical Society of America (2009)
- Fellow, Optical Society of America (2009)
- Fellow, Royal Society of Chemistry (2008)
- E. Bright Wilson Award for Spectroscopy, American Chemical Society (2007)
- Member, National Academy of Sciences (2007)
- Earl K. Plyler Prize for Molecular Spectroscopy, American Physical Society (2000)
- Member, American Academy of Arts and Sciences (1999)
- Dean's Award for Distinguished Teaching, Stanford University (1986)
- Fellow, Guggenheim Foundation (1983)
- Fellow, American Physical Society (1982)
- Dreyfus Teacher-Scholar Award, Camille & Henry Dreyfus Foundation (1977)
- Fellow, Camille & Henry Dreyfus Foundation (1977)
- Fellow, Alfred P. Sloan Foundation (1977)
- Phi Beta Kappa, University of California at Berkeley (1969)
- Fellow, National Science Foundation (1966-1967)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Editorial Board, Journal of Chemical Physics (1987 - 1990)
- Member, Advisory Board, Journal of Physical Chemistry (1986 - 1989)
- Associate Editor, Journal of Luminescence (1988 - present)

- Advisory Editor, Chemical Physics (1985 - present)
- Advisory Editor, Chemical Physics Letters (1984 - 2006)
- Chairman, Awards Committee, Earl K. Plyler Prize for Molecular Spectroscopy (2006 - 2006)
- Chairman, 7th International Conference on Unconventional Photoactive Systems, Stanford University (1995 - 1995)
- Chairman, Fourth International Conference on Dynamical Processes, Stanford University (1983 - 1983)
- Member, American Chemical Society
- Member, American Optical Society
- Member, American Physical Society
- Member, Royal Society of Chemistry
- Member, Sigma Xi

PROFESSIONAL EDUCATION

- Ph.D., University of California at Berkeley , Chemistry (1974)
- B.S., University of California at Berkeley , Chemistry (1969)

LINKS

- Lab Website: <http://www.stanford.edu/group/fayer/>

Teaching

COURSES

2018-19

- Advanced Physical Chemistry: CHEM 271 (Aut)
- Spectroscopy Laboratory: CHEM 176 (Win)

2017-18

- Advanced Physical Chemistry: CHEM 271 (Aut)
- Spectroscopy Laboratory: CHEM 176 (Win)

2016-17

- Advanced Physical Chemistry: CHEM 271 (Aut)
- Spectroscopy Laboratory: CHEM 176 (Win)

2015-16

- Advanced Physical Chemistry: CHEM 271 (Aut)
- Spectroscopy Laboratory: CHEM 176 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Michael Angell, Jeffrey Babicz, Camille Bayas, Christian Chamberlayne, Jana Meiser, Petar Petrov, Annina Sartor

Postdoctoral Faculty Sponsor

Boning Wu

Doctoral Dissertation Advisor (AC)

John Breen, David Hoffman, Sean Roget, Steven Yamada

Publications

PUBLICATIONS

- **Structural Influences on the Fast Dynamics of Alkylsiloxane Monolayers on SiO₂ Surfaces Measured with 2D IR Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
Yan, C., Yuan, R., Nishida, J., Fayer, M. D.
2015; 119 (29): 16811-16823
- **The Influence of Cholesterol on Fast Dynamics Inside of Vesicle and Planar Phospholipid Bilayers Measured with 2D IR Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Kel, O., Tamimi, A., Fayer, M. D.
2015; 119 (29): 8852-8862
- **Dynamics of water, methanol, and ethanol in a room temperature ionic liquid.** *journal of chemical physics*
Kramer, P. L., Giammanco, C. H., Fayer, M. D.
2015; 142 (21): 212408-?
- **Proton Transfer in Ionic and Neutral Reverse Micelles** *JOURNAL OF PHYSICAL CHEMISTRY B*
Lawler, C., Fayer, M. D.
2015; 119 (19): 6024-6034
- **Structural dynamics inside a functionalized metal-organic framework probed by ultrafast 2D IR spectroscopy.** *Proceedings of the National Academy of Sciences of the United States of America*
Nishida, J., Tamimi, A., Fei, H., Pullen, S., Ott, S., Cohen, S. M., Fayer, M. D.
2014; 111 (52): 18442-18447
- **New divergent dynamics in the isotropic to nematic phase transition of liquid crystals measured with 2D IR vibrational echo spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Sokolowsky, K. P., Bailey, H. E., Fayer, M. D.
2014; 141 (19)
- **Orientational Dynamics in a Lyotropic Room Temperature Ionic Liquid** *JOURNAL OF PHYSICAL CHEMISTRY B*
Sturlaugson, A. L., Arima, A. Y., Bailey, H. E., Fayer, M. D.
2013; 117 (47): 14775-14784
- **Dynamics of isolated water molecules in a sea of ions in a room temperature ionic liquid.** *journal of physical chemistry. B*
Wong, D. B., Giammanco, C. H., Fenn, E. E., Fayer, M. D.
2013; 117 (2): 623-635
- **Protein Dynamics Studied with Ultrafast Two-Dimensional Infrared Vibrational Echo Spectroscopy** *ACCOUNTS OF CHEMICAL RESEARCH*
Thielges, M. C., Fayer, M. D.
2012; 45 (11): 1866-1874
- **Analysis of Water in Confined Geometries and at Interfaces** *ANNUAL REVIEW OF ANALYTICAL CHEMISTRY, VOL 3*
Fayer, M. D., Levinger, N. E.
2010; 3: 89-107
- **Ultrafast dynamics of solute-solvent complexation observed at thermal equilibrium in real time** *SCIENCE*
Zheng, J. R., Kwak, K., Asbury, J., Chen, X., Piletic, I. R., Fayer, M. D.
2005; 309 (5739): 1338-1343
- **Imidazole and 1-Methylimidazole Hydrogen Bonding and Nonhydrogen Bonding Liquid Dynamics: Ultrafast IR Experiments.** *The journal of physical chemistry. B*
Shin, J. Y., Wang, Y., Yamada, S. A., Hung, S. T., Fayer, M. D.
2019
- **Orientational Pair Correlations in a Dipolar Molecular Liquid: Time-Resolved Resonant and Nonresonant Pump-Probe Spectroscopies.** *The journal of physical chemistry. B*
Yamada, S. A., Bailey, H. E., Fayer, M. D.

2018

- **Ion-Molecule Complex Dissociation and Formation Dynamics in LiCl Aqueous Solutions from 2D IR Spectroscopy.** *The journal of physical chemistry. B*
Yuan, R., Yan, C., Fayer, M.
2018
- **Dynamics and Microstructures of Nicotine/Water Binary Mixtures near the Lower Critical Solution Temperature.** *The journal of physical chemistry. B*
Bailey, H. E., Wang, Y., Lynch, S. R., Fayer, M. D.
2018
- **Extraordinary Slowing of Structural Dynamics in Thin Films of a Room Temperature Ionic Liquid.** *ACS central science*
Nishida, J., Breen, J. P., Wu, B., Fayer, M. D.
2018; 4 (8): 1065–73
- **Dynamically Disordered Lattice in a Layered Pb-I-SCN Perovskite Thin Film Probed by Two-Dimensional Infrared Spectroscopy.** *Journal of the American Chemical Society*
Nishida, J., Breen, J. P., Lindquist, K. P., Umeyama, D., Karunadasa, H. I., Fayer, M. D.
2018
- **The influence of hydrophilicity on the orientational dynamics and structures of imidazolium-based ionic liquid/water binary mixtures.** *The Journal of chemical physics*
Bailey, H. E., Wang, Y., Fayer, M. D.
2018; 149 (4): 044501
- **Water Dynamics in Polyacrylamide Hydrogels.** *Journal of the American Chemical Society*
Yan, C., Kramer, P. L., Yuan, R., Fayer, M. D.
2018
- **Preface: Special Topic on Chemical Physics of Ionic Liquids** *JOURNAL OF CHEMICAL PHYSICS*
Perkin, S., Kirchner, B., Fayer, M. D.
2018; 148 (19)
- **Influence of mesoscopic confinement on the dynamics of room temperature ionic liquids**
Fayer, M.
AMER CHEMICAL SOC.2018
- **Monolayer dynamics at the air/ water interface: From ultrafast to ultraslow dynamics**
Fayer, M.
AMER CHEMICAL SOC.2018
- **Ultrafast to Ultraslow Dynamics of a Langmuir Monolayer at the Air/Water Interface Observed with Reflection Enhanced 2D IR Spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Yan, C., Thomaz, J. E., Wang, Y., Nishida, J., Yuan, R., Breen, J. P., Fayer, M. D.
2017; 139 (46): 16518–27
- **The influence of mesoscopic confinement on the dynamics of imidazolium-based room temperature ionic liquids in polyether sulfone membranes** *JOURNAL OF CHEMICAL PHYSICS*
Thomaz, J. E., Bailey, H. E., Fayer, M. D.
2017; 147 (19): 194502
- **Discontinuity in Fast Dynamics at the Glass Transition of ortho-Terphenyl** *JOURNAL OF PHYSICAL CHEMISTRY B*
Hoffman, D. J., Fayer, M. D.
2017; 121 (45): 10417–28
- **Proton Transfer in Perfluorosulfonic Acid Fuel Cell Membranes with Differing Pendant Chains and Equivalent Weights** *JOURNAL OF PHYSICAL CHEMISTRY B*
Thomaz, J. E., Lawler, C. M., Fayer, M. D.
2017; 121 (17): 4544-4553
- **Dynamics in a Water Interfacial Boundary Layer Investigated with IR Polarization-Selective Pump-Probe Experiments** *JOURNAL OF PHYSICAL CHEMISTRY B*

- Yuan, R., Yan, C., Nishida, J., Fayer, M. D.
2017; 121 (17): 4530-4537
- **Direct observation of dynamic crossover in fragile molecular glass formers with 2D IR vibrational echo spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Hoffman, D. J., Sokolowsky, K. P., Fayer, M. D.
2017; 146 (12)
 - **Enhanced nonlinear spectroscopy for monolayers and thin films in near-Brewster's angle reflection pump-probe geometry** *JOURNAL OF CHEMICAL PHYSICS*
Nishida, J., Yan, C., Fayer, M. D.
2017; 146 (9)
 - **Dynamics in a Room-Temperature Ionic Liquid from the Cation Perspective: 2D IR Vibrational Echo Spectroscopy.** *Journal of the American Chemical Society*
Yamada, S. A., Bailey, H. E., Tamimi, A., Li, C., Fayer, M. D.
2017; 139 (6): 2408-2420
 - **Dynamics of a Room Temperature Ionic Liquid in Supported Ionic Liquid Membranes vs the Bulk Liquid: 2D IR and Polarized IR Pump-Probe Experiments** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Shin, J. Y., Yamada, S. A., Fayer, M. D.
2017; 139 (1): 311-323
 - **Water Dynamics in 1-Alkyl-3-methylimidazolium Tetrafluoroborate Ionic Liquids** *JOURNAL OF PHYSICAL CHEMISTRY B*
Giammanco, C. H., Kramer, P. L., Wong, D. B., Fayer, M. D.
2016; 120 (44): 11523-11538
 - **Orientational Dynamics of a Functionalized Alkyl Planar Monolayer Probed by Polarization-Selective Angle-Resolved Infrared Pump-Probe Spectroscopy.** *Journal of the American Chemical Society*
Nishida, J., Yan, C., Fayer, M. D.
2016: -?
 - **The Influence of Water on the Alkyl Region Structure in Variable Chain Length Imidazolium-Based Ionic Liquid/Water Mixtures** *JOURNAL OF PHYSICAL CHEMISTRY B*
Thomaz, J. E., Lawler, C. M., Fayer, M. D.
2016; 120 (39): 10350-10357
 - **Ionic Liquid versus Li⁺ Aqueous Solutions: Water Dynamics near Bistriflimide Anions** *JOURNAL OF PHYSICAL CHEMISTRY B*
Giammanco, C. H., Kramer, P. L., Fayer, M. D.
2016; 120 (37): 9997-10009
 - **Alkyl Chain Length Dependence of the Dynamics and Structure in the Ionic Regions of Room-Temperature Ionic Liquids.** *journal of physical chemistry. B*
Tamimi, A., Bailey, H. E., Fayer, M. D.
2016; 120 (30): 7488-7501
 - **Water of Hydration Dynamics in Minerals Gypsum and Bassanite: Ultrafast 2D IR Spectroscopy of Rocks.** *Journal of the American Chemical Society*
Yan, C., Nishida, J., Yuan, R., Fayer, M. D.
2016; 138 (30): 9694-9703
 - **Critical Slowing of Density Fluctuations Approaching the Isotropic-Nematic Transition in Liquid Crystals: 2D IR Measurements and Mode Coupling Theory.** *journal of physical chemistry. B*
Sokolowsky, K. P., Bailey, H. E., Hoffman, D. J., Andersen, H. C., Fayer, M. D.
2016; 120 (28): 7003-7015
 - **Structural and Rotational Dynamics of Carbon Dioxide in 1-Alkyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)imide Ionic Liquids: The Effect of Chain Length** *JOURNAL OF PHYSICAL CHEMISTRY B*
Giammanco, C. H., Yamada, S. A., Kramer, P. L., Tamimi, A., Fayer, M. D.
2016; 120 (27): 6698-6711
 - **Ionic Liquid Dynamics Measured with 2D IR and IR Pump-Probe Experiments on a Linear Anion and the Influence of Potassium Cations** *JOURNAL OF PHYSICAL CHEMISTRY B*
Tamimi, A., Fayer, M. D.

2016; 120 (26): 5842-5854

- **Quasi-rotating frame: accurate line shape determination with increased efficiency in noncollinear 2D optical spectroscopy** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Kramer, P. L., Giammanco, C. H., Tamimi, A., Hoffman, D. J., Sokolowsky, K. P., Fayer, M. D.
2016; 33 (6): 1143-1156
- **Unraveling the dynamics and structure of functionalized self-assembled monolayers on gold using 2D IR spectroscopy and MD simulations** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Yan, C., Yuan, R., Pfalzgraff, W. C., Nishida, J., Wang, L., Markland, T. E., Fayer, M. D.
2016; 113 (18): 4929-4934
- **Carbon dioxide in an ionic liquid: Structural and rotational dynamics** *JOURNAL OF CHEMICAL PHYSICS*
Giammanco, C. H., Kramer, P. L., Yamada, S. A., Nishida, J., Tamimi, A., Fayer, M. D.
2016; 144 (10)
- **Coupling of Carbon Dioxide Stretch and Bend Vibrations Reveals Thermal Population Dynamics in an Ionic Liquid.** *journal of physical chemistry. B*
Giammanco, C. H., Kramer, P. L., Yamada, S. A., Nishida, J., Tamimi, A., Fayer, M. D.
2016; 120 (3): 549-556
- **Molecular Anion Hydrogen Bonding Dynamics in Aqueous Solution.** *journal of physical chemistry. B*
Yuan, R., Yan, C., Tamimi, A., Fayer, M. D.
2015; 119 (42): 13407-13415
- **Separation of experimental 2D IR frequency-frequency correlation functions into structural and reorientation-induced contributions.** *journal of chemical physics*
Kramer, P. L., Nishida, J., Fayer, M. D.
2015; 143 (12): 124505-?
- **Separation of experimental 2D IR frequency-frequency correlation functions into structural and reorientation-induced contributions.** *journal of chemical physics*
Kramer, P. L., Nishida, J., Fayer, M. D.
2015; 143 (12): 124505-?
- **Dynamics of water, methanol, and ethanol in a room temperature ionic liquid** *JOURNAL OF CHEMICAL PHYSICS*
Kramer, P. L., Giammanco, C. H., Fayer, M. D.
2015; 142 (21)
- **Observation and theory of reorientation-induced spectral diffusion in polarization-selective 2D IR spectroscopy.** *journal of chemical physics*
Kramer, P. L., Nishida, J., Giammanco, C. H., Tamimi, A., Fayer, M. D.
2015; 142 (18): 184505-?
- **Observation and theory of reorientation-induced spectral diffusion in polarization-selective 2D IR spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Kramer, P. L., Nishida, J., Giammanco, C. H., Tamimi, A., Fayer, M. D.
2015; 142 (18)
- **Dynamics of dihydrogen bonding in aqueous solutions of sodium borohydride.** *journal of physical chemistry. B*
Giammanco, C. H., Kramer, P. L., Fayer, M. D.
2015; 119 (8): 3546-3559
- **Dynamics of dihydrogen bonding in aqueous solutions of sodium borohydride.** *journal of physical chemistry. B*
Giammanco, C. H., Kramer, P. L., Fayer, M. D.
2015; 119 (8): 3546-3559
- **Dynamics and structure of room temperature ionic liquids** *CHEMICAL PHYSICS LETTERS*
Fayer, M. D.
2014; 616: 259-274
- **Length Scales and Structural Dynamics in Nematogen Pseudonematic Domains Measured with 2D IR Vibrational Echoes and Optical Kerr Effect Experiments.** *journal of physical chemistry. B*
Sokolowsky, K. P., Bailey, H. E., Fayer, M. D.

2014; 118 (28): 7856-7868

- **Theory of third-order spectroscopic methods to extract detailed molecular orientational dynamics for planar surfaces and other uniaxial systems.** *journal of chemical physics*
Nishida, J., Fayer, M. D.
2014; 140 (14): 144702-?
- **Theory of third-order spectroscopic methods to extract detailed molecular orientational dynamics for planar surfaces and other uniaxial systems** *JOURNAL OF CHEMICAL PHYSICS*
Nishida, J., Fayer, M. D.
2014; 140 (14)
- **Size-dependent ultrafast structural dynamics inside phospholipid vesicle bilayers measured with 2D IR vibrational echoes** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kel, O., Tamimi, A., Fayer, M. D.
2014; 111 (3): 918-923
- **Dynamics of Molecular Monolayers with Different Chain Lengths in Air and Solvents Probed by Ultrafast 2D IR Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
Nishida, J., Yan, C., Fayer, M. D.
2014; 118 (1): 523-532
- **The Influence of Cholesterol on Fast Dynamics Inside of Vesicle and Planar Phospholipid Bilayers Measured with 2D IR Spectroscopy** *J. Phys. Chem B.*
Kel, O., Tamimi, A., Michael, F. D.
2014
- **Dynamics in the isotropic phase of nematogens using 2D IR vibrational echo measurements on natural-abundance ¹³CN and extended lifetime probes.** *journal of physical chemistry. B*
Sokolowsky, K. P., Fayer, M. D.
2013; 117 (48): 15060-15071
- **Orientational dynamics in a lyotropic room temperature ionic liquid.** *journal of physical chemistry. B*
Sturlaugson, A. L., Arima, A. Y., Bailey, H. E., Fayer, M. D.
2013; 117 (47): 14775-14784
- **Theoretical examination of picosecond phenol migration dynamics in phenylacetylene solution** *CHEMICAL PHYSICS*
Kocia, L., Young, S. M., Kholod, Y. A., Fayer, M. D., Gordon, M. S., Rappe, A. M.
2013; 422: 175-183
- **The influence of lithium cations on dynamics and structure of room temperature ionic liquids.** *journal of physical chemistry. B*
Lawler, C., Fayer, M. D.
2013; 117 (33): 9768-9774
- **The Influence of Lithium Cations on Dynamics and Structure of Room Temperature Ionic Liquids** *JOURNAL OF PHYSICAL CHEMISTRY B*
Lawler, C., Fayer, M. D.
2013; 117 (33): 9768-9774
- **Ultrafast Structural Dynamics Inside Planar Phospholipid Multibilayer Model Cell Membranes Measured with 2D IR Spectroscopy.** *Journal of the American Chemical Society*
Kel, O., Tamimi, A., Thielges, M. C., Fayer, M. D.
2013; 135 (30): 11063-11074
- **Dynamics in the interior of AOT lamellae investigated with two-dimensional infrared spectroscopy.** *Journal of the American Chemical Society*
Kumar, S. K., Tamimi, A., Fayer, M. D.
2013; 135 (13): 5118-5126
- **Dynamics in the Interior of AOT Lamellae Investigated with Two-Dimensional Infrared Spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Kumar, S. K., Tamimi, A., Fayer, M. D.
2013; 135 (13): 5118-5126

- **Structural Dynamics at Monolayer-Liquid Interfaces Probed by 2D IR Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
Rosenfeld, D. E., Nishida, J., Yan, C., Kumar, S. K., Tamimi, A., Fayer, M. D.
2013; 117 (3): 1409-1420
- **Dynamics of Isolated Water Molecules in a Sea of Ions in a Room Temperature Ionic Liquid** *JOURNAL OF PHYSICAL CHEMISTRY B*
Wong, D. B., Giammanco, C. H., Fenn, E. E., Fayer, M. D.
2013; 117 (2): 623-635
- **Ultrafast Infrared Vibrational Spectroscopy**
edited by Fayer, M. D.
Francis & Taylor Group, LLC.2013
- **Water Dynamics in Divalent and Monovalent Concentrated Salt Solutions** *JOURNAL OF PHYSICAL CHEMISTRY B*
Giammanco, C. H., Wong, D. B., Fayer, M. D.
2012; 116 (46): 13781-13792
- **Comparisons of 2D IR measured spectral diffusion in rotating frames using pulse shaping and in the stationary frame using the standard method** *JOURNAL OF CHEMICAL PHYSICS*
Kumar, S. K., Tamimi, A., Fayer, M. D.
2012; 137 (18)
- **Comparisons of 2D IR measured spectral diffusion in rotating frames using pulse shaping and in the stationary frame using the standard method.** *journal of chemical physics*
Karthick Kumar, S. K., Tamimi, A., Fayer, M. D.
2012; 137 (18): 184201-?
- **Dynamics of Functionalized Surface Molecular Monolayers Studied with Ultrafast Infrared Vibrational Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
Rosenfeld, D. E., Nishida, J., Yan, C., Gengeliczki, Z., Smith, B. J., Fayer, M. D.
2012; 116 (44): 23428-23440
- **Fast Dynamics of HP35 for Folded and Urea-Unfolded Conditions** *JOURNAL OF PHYSICAL CHEMISTRY B*
Chung, J. K., Thielges, M. C., Lynch, S. R., Fayer, M. D.
2012; 116 (36): 11024-11031
- **Excitation transfer induced spectral diffusion and the influence of structural spectral diffusion** *JOURNAL OF CHEMICAL PHYSICS*
Rosenfeld, D. E., Fayer, M. D.
2012; 137 (6)
- **Conformational Dynamics and Stability of HP35 Studied with 2D IR Vibrational Echoes** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Chung, J. K., Thielges, M. C., Fayer, M. D.
2012; 134 (29): 12118-12124
- **Water Dynamics in Water/DMSO Binary Mixtures** *JOURNAL OF PHYSICAL CHEMISTRY B*
Wong, D. B., Sokolowsky, K. P., El-Barghouthi, M. I., Fenn, E. E., Giammanco, C. H., Sturlaugson, A. L., Fayer, M. D.
2012; 116 (18): 5479-5490
- **Ribonuclease S Dynamics Measured Using a Nitrile Label with 2D IR Vibrational Echo Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Bagchi, S., Boxer, S. G., Fayer, M. D.
2012; 116 (13): 4034-4042
- **Investigation of Nanostructure in Room Temperature Ionic Liquids using Electronic Excitation Transfer** *JOURNAL OF PHYSICAL CHEMISTRY B*
Fruchey, K., Lawler, C. M., Fayer, M. D.
2012; 116 (10): 3054-3064
- **Orientalional Dynamics of Room Temperature Ionic Liquid/Water Mixtures: Water-Induced Structure** *JOURNAL OF PHYSICAL CHEMISTRY B*
Sturlaugson, A. L., Fruchey, K. S., Fayer, M. D.
2012; 116 (6): 1777-1787
- **Dynamics of Water Interacting with Interfaces, Molecules, and Ions.** *ACCOUNTS OF CHEMICAL RESEARCH*

- Fayer, M. D.
2012; 45 (1): 3-14
- **Water in a Crowd** *PHYSIOLOGY*
Fayer, M. D.
2011; 26 (6): 381-392
 - **Structural Dynamics of a Catalytic Monolayer Probed by Ultrafast 2D IR Vibrational Echoes** *SCIENCE*
Rosenfeld, D. E., Gengeliczki, Z., Smith, B. J., Stack, T. D., Fayer, M. D.
2011; 334 (6056): 634-639
 - **Dynamics of Water at the Interface in Reverse Micelles: Measurements of Spectral Diffusion with Two-Dimensional Infrared Vibrational Echoes** *JOURNAL OF PHYSICAL CHEMISTRY B*
Fenn, E. E., Wong, D. B., Giammanco, C. H., Fayer, M. D.
2011; 115 (40): 11658-11670
 - **Two-Dimensional IR Spectroscopy of Protein Dynamics Using Two Vibrational Labels: A Site-Specific Genetically Encoded Unnatural Amino Acid and an Active Site Ligand** *JOURNAL OF PHYSICAL CHEMISTRY B*
Thielges, M. C., Axup, J. Y., Wong, D., Lee, H. S., Chung, J. K., Schultz, P. G., Fayer, M. D.
2011; 115 (38): 11294-11304
 - **Time-Dependent Fifth-Order Bands in Nominally Third-Order 2D IR Vibrational Echo Spectra** *JOURNAL OF PHYSICAL CHEMISTRY A*
Thielges, M. C., Fayer, M. D.
2011; 115 (34): 9714-9723
 - **Extracting 2D IR frequency-frequency correlation functions from two component systems** *JOURNAL OF CHEMICAL PHYSICS*
Fenn, E. E., Fayer, M. D.
2011; 135 (7)
 - **Influence of Histidine Tag Attachment on Picosecond Protein Dynamics** *BIOCHEMISTRY*
Thielges, M. C., Chung, J. K., Axup, J. Y., Fayer, M. D.
2011; 50 (25): 5799-5805
 - **Temperature Dependent Equilibrium Native to Unfolded Protein Dynamics and Properties Observed with IR Absorption and 2D IR Vibrational Echo Experiments** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Chung, J. K., Thielges, M. C., Bowman, S. E., Bren, K. L., Fayer, M. D.
2011; 133 (17): 6681-6691
 - **Protein Dynamics in Cytochrome P450 Molecular Recognition and Substrate Specificity Using 2D IR Vibrational Echo Spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Thielges, M. C., Chung, J. K., Fayer, M. D.
2011; 133 (11): 3995-4004
 - **Dynamics of the folded and unfolded villin headpiece (HP35) measured with ultrafast 2D IR vibrational echo spectroscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Chung, J. K., Thielges, M. C., Fayer, M. D.
2011; 108 (9): 3578-3583
 - **Temperature and Hydration-Dependent Rotational and Translational Dynamics of a Polyether Oligomer** *JOURNAL OF PHYSICAL CHEMISTRY B*
Sturlaugson, A. L., Fayer, M. D.
2011; 115 (5): 945-950
 - **Water dynamics in small reverse micelles in two solvents: Two-dimensional infrared vibrational echoes with two-dimensional background subtraction** *JOURNAL OF CHEMICAL PHYSICS*
Fenn, E. E., Wong, D. B., Fayer, M. D.
2011; 134 (5)
 - **Water Dynamics in Small AOT Reverse Micelles in Two Solvents: 2D IR Vibrational Echoes with 2D Background Subtraction** *J. Chem. Phys.*
Fenn, E. E., Wong, D. B., Fayer, M. D.
2011; 134 (054512)

- **The Influence of Histidine Tag Attachment on Protein Dynamics** *Biochemistry*
Thielges, M. C., Chung, J. K., Axup, J. Y., Fayer, M. D.
2011; 50: 5799-5805
- **Time-Dependent 5th Order Bands in Nominally 3rd Order 2D IR Vibrational Echo Spectra** *J. Phys. Chem. A*
Thielges, M. C., Fayer, M. D.
2011; 115: 9714-9723
- **Conformational Switching between Protein Substates Studied with 2D IR Vibrational Echo Spectroscopy and Molecular Dynamics Simulations** *JOURNAL OF PHYSICAL CHEMISTRY B*
Bagchi, S., Thorpe, D. G., Thorpe, I. F., Voth, G. A., Fayer, M. D.
2010; 114 (51): 17187-17193
- **Dynamics of a Myoglobin Mutant Enzyme: 2D IR Vibrational Echo Experiments and Simulations** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Bagchi, S., Nebgen, B. T., Loring, R. F., Fayer, M. D.
2010; 132 (51): 18367-18376
- **Room Temperature Ionic Liquid-Lithium Salt Mixtures: Optical Kerr Effect Dynamical Measurements** *JOURNAL OF PHYSICAL CHEMISTRY B*
Nicolau, B. G., Sturlaugson, A., Fruchey, K., Ribeiro, M. C., Fayer, M. D.
2010; 114 (25): 8350-8356
- **Theory of interfacial orientational relaxation spectroscopic observables** *JOURNAL OF CHEMICAL PHYSICS*
Gengeliczki, Z., Rosenfeld, D. E., Fayer, M. D.
2010; 132 (24)
- **Orientalional and Translational Dynamics of Polyether/Water Solutions** *JOURNAL OF PHYSICAL CHEMISTRY B*
Sturlaugson, A. L., Fruchey, K. S., Lynch, S. R., Aragon, S. R., Fayer, M. D.
2010; 114 (16): 5350-5358
- **Dynamics in Organic Ionic Liquids in Distinct Regions Using Charged and Uncharged Orientalional Relaxation Probes** *JOURNAL OF PHYSICAL CHEMISTRY B*
Fruchey, K., Fayer, M. D.
2010; 114 (8): 2840-2845
- **Hydrogen Bond Migration between Molecular Sites Observed with Ultrafast 2D IR Chemical Exchange Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Rosenfeld, D. E., Kwak, K., Gengeliczki, Z., Fayer, M. D.
2010; 114 (7): 2383-2389
- **Absolutely Small - How Quantum Theory Explains Our Everyday World**
Fayer, M. D.
AMACOM, New York.2010
- **Solvent Control of the Soft Angular Potential in Hydroxyl-pi Hydrogen Bonds: Inertial Orientalional Dynamics** *JOURNAL OF PHYSICAL CHEMISTRY B*
Rosenfeld, D. E., Gengeliczki, Z., Fayer, M. D.
2009; 113 (40): 13300-13307
- **Water dynamics at neutral and ionic interfaces** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Fenn, E. E., Wong, D. B., Fayer, M. D.
2009; 106 (36): 15243-15248
- **Water Dynamics in Salt Solutions Studied with Ultrafast Two-Dimensional Infrared (2D IR) Vibrational Echo Spectroscopy** *ACCOUNTS OF CHEMICAL RESEARCH*
Fayer, M. D., Moilanen, D. E., Wong, D., Rosenfeld, D. E., Fenn, E. E., Park, S.
2009; 42 (9): 1210-1219
- **Proton Transfer and Proton Concentrations in Protonated Nafion Fuel Cell Membranes** *JOURNAL OF PHYSICAL CHEMISTRY B*
Spry, D. B., Fayer, M. D.
2009; 113 (30): 10210-10221

- **Water dynamics in large and small reverse micelles: From two ensembles to collective behavior** *JOURNAL OF CHEMICAL PHYSICS*
Moilanen, D. E., Fenn, E. E., Wong, D., Fayer, M. D.
2009; 131 (1)
- **Water Dynamics at the Interface in AOT Reverse Micelles** *JOURNAL OF PHYSICAL CHEMISTRY B*
Moilanen, D. E., Fenn, E. E., Wong, D., Fayer, M. D.
2009; 113 (25): 8560-8568
- **Geometry and Nanolength Scales versus Interface Interactions: Water Dynamics in AOT Lamellar Structures and Reverse Micelles** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Moilanen, D. E., Fenn, E. E., Wong, D., Fayer, M. D.
2009; 131 (23): 8318-8328
- **Water Dynamics and Interactions in Water-Polyether Binary Mixtures** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Fenn, E. E., Moilanen, D. E., Levinger, N. E., Fayer, M. D.
2009; 131 (15): 5530-5539
- **PHYS 430-Enzyme dynamical changes upon substrate binding and structural interconversions measured with ultrafast 2-D IR vibrational echo spectroscopy**
Fayer, M. D., Ishikawa, H., Finkelstein, I. J., Chung, J. K., Kwak, K., Kim, S.
AMER CHEMICAL SOC.2009
- **Ion-water hydrogen-bond switching observed with 2D IR vibrational echo chemical exchange spectroscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Moilanen, D. E., Wong, D., Rosenfeld, D. E., Fenn, E. E., Fayer, M. D.
2009; 106 (2): 375-380
- **Dynamics of Liquids, Molecules, and Proteins Measured with Ultrafast 2D IR Vibrational Echo Chemical Exchange Spectroscopy** *ANNUAL REVIEW OF PHYSICAL CHEMISTRY*
Fayer, M. D.
2009; 60: 21-38
- **Ultrafast 2D-IR Vibration Echo Spectroscopy of Proteins** *Biological and Biomedical Infrared Spectroscopy*
Ishikawa, H., Kim, S., Finkelstein, I. J., Fayer, M. D.
edited by Barth, A., Harris, P. I.
IOS Press BV, Amsterdam.2009
- **Water Dynamics at Neutral and Ionic Interfaces in Reverse Micelles**
Fenn, E. E., Wong, D. B., Fayer, M. D.
2009; 15243-48
- **Solute-Solvent Complex Switching Dynamics of Chloroform between Acetone and Dimethylsulfoxide-Two-Dimensional IR Chemical Exchange Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Kwak, K., Rosenfeld, D. E., Chung, J. K., Fayer, M. D.
2008; 112 (44): 13906-13915
- **Water at the surfaces of aligned phospholipid multibilayer model membranes probed with ultrafast vibrational spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Zhao, W., Moilanen, D. E., Fenn, E. E., Fayer, M. D.
2008; 130 (42): 13927-13937
- **Charge Transfer in Photoacids Observed by Stark Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY A*
Silverman, L. N., Spry, D. B., Boxer, S. G., Fayer, M. D.
2008; 112 (41): 10244-10249
- **Solute-solvent complex kinetics and thermodynamics probed by 2D-IR vibrational echo chemical exchange Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Zheng, J., Fayer, M. D.
2008; 112 (33): 10221-10227

- **PHYS 286-Dynamics of native and unfolded cytochrome c using 2-D-IR vibrational echo spectroscopy** *236th National Meeting of the American-Chemical-Society*
Fayer, M. D., Kim, S., Chung, J. K., Bowman, S. E., Bren, K. L., Bagchi, B.
AMER CHEMICAL SOC.2008
- **Native and unfolded cytochrome c-comparison of dynamics using 2D-IR vibrational echo spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Kim, S., Chung, J. K., Kwak, K., Bowman, S. E., Bren, K. L., Bagchi, B., Fayer, M. D.
2008; 112 (32): 10054-10063
- **Direct observation of fast protein conformational switching** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Ishikawa, H., Kwak, K., Chung, J. K., Kim, S., Fayer, M. D.
2008; 105 (25): 8619-8624
- **Taking apart the two-dimensional infrared vibrational echo spectra: More information and elimination of distortions** *JOURNAL OF CHEMICAL PHYSICS*
Kwak, K., Rosenfeld, D. E., Fayer, M. D.
2008; 128 (20)
- **Water dynamics - The effects of ions and nanoconfinement** *JOURNAL OF PHYSICAL CHEMISTRY B*
Park, S., Moilanen, D. E., Fayer, M. D.
2008; 112 (17): 5279-5290
- **Water dynamics and proton transfer in Nafion fuel cell membranes** *LANGMUIR*
Moilanen, D. E., Spry, D. B., Fayer, M. D.
2008; 24 (8): 3690-3698
- **Water inertial reorientation: Hydrogen bond strength and the angular potential** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Moilanen, D. E., Fenn, E. E., Lin, Y., Skinner, J. L., Bagchi, B., Fayer, M. D.
2008; 105 (14): 5295-5300
- **Charge redistribution and photoacidity: Neutral versus cationic photoacids** *JOURNAL OF CHEMICAL PHYSICS*
Spry, D. B., Fayer, M. D.
2008; 128 (8)
- **Disulfide bond influence on protein structural dynamics probed with 2D-IR vibrational echo spectroscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Ishikawa, H., Kim, S., Kwak, K., Wakasugi, K., Fayer, M. D.
2007; 104 (49): 19309-19314
- **Observation of slow charge redistribution preceding excited-state proton transfer** *JOURNAL OF CHEMICAL PHYSICS*
Spry, D. B., Fayer, M. D.
2007; 127 (20)
- **Confinement or the nature of the interface? Dynamics of nanoscopic water** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Moilanen, D. E., Levinger, N. E., Spry, D. B., Fayer, M. D.
2007; 129 (46): 14311-14318
- **Are water simulation models consistent with steady-state and ultrafast vibrational spectroscopy experiments?** *CHEMICAL PHYSICS*
Schmidt, J. R., Roberts, S. T., Loparo, J. J., Tokmakoff, A., Fayer, M. D., Skinner, J. L.
2007; 341 (1-3): 143-157
- **Hydrogen bond dynamics in aqueous NaBr solutions** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Park, S., Fayer, M. D.
2007; 104 (43): 16731-16738
- **Neuroglobin dynamics observed with ultrafast 2D-IR vibrational echo spectroscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Ishikawa, H., Finkelstein, I. J., Kim, S., Kwak, K., Chung, J. K., Wakasugi, K., Massari, A. M., Fayer, M. D.

2007; 104 (41): 16116-16121

- **Ultrafast 2D-IR vibrational echo spectroscopy: a probe of molecular dynamics** *LASER PHYSICS LETTERS*
Park, S., Kwak, K., Fayer, M. D.
2007; 4 (10): 704-718
- **Frequency-frequency correlation functions and apodization in two-dimensional infrared vibrational echo spectroscopy: A new approach** *JOURNAL OF CHEMICAL PHYSICS*
Kwak, K., Park, S., Finkelstein, I. J., Fayer, M. D.
2007; 127 (12)
- **Dynamics around solutes and solute-solvent complexes in mixed solvents** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kwak, K., Park, S., Fayer, M. D.
2007; 104 (36): 14221-14226
- **Proton transport and the water environment in nafion fuel cell membranes and AOT reverse micelles** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Spry, D. B., Goun, A., Glusac, K., Moilanen, D. E., Fayer, M. D.
2007; 129 (26): 8122-8130
- **Water dynamics in nafion fuel cell membranes: The effects of confinement and structural changes on the hydrogen bond network** *JOURNAL OF PHYSICAL CHEMISTRY C*
Moilanen, D. E., Piletic, I. R., Fayer, M. D.
2007; 111 (25): 8884-8891
- **Viscosity-dependent protein dynamics** *BIOPHYSICAL JOURNAL*
Finkelstein, I. J., Massari, A. M., Fayer, M. D.
2007; 92 (10): 3652-3662
- **Hydrogen bond lifetimes and energetics for solute/solvent complexes studied with 2D-IR vibrational echo spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Zheng, J., Fayer, M. D.
2007; 129 (14): 4328-4335
- **Ultrafast 2-D infrared vibrational echo chemical exchange spectroscopy studies of chemical processes**
Fayer, M. D., Zheng, J., Kwak, K.
AMER CHEMICAL SOC.2007
- **Substrate binding and protein conformational dynamics measured by 2D-IR vibrational echo spectroscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Finkelstein, I. J., Ishikawa, H., Kim, S., Massari, A. M., Fayer, M. D.
2007; 104 (8): 2637-2642
- **Deprotonation dynamics and stokes shift of pyranine (HPTS)** *JOURNAL OF PHYSICAL CHEMISTRY A*
Spry, D. B., Goun, A., Fayer, M. D.
2007; 111 (2): 230-237
- **Probing dynamics of complex molecular systems with ultrafast 2D IR vibrational echo spectroscopy** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
Finkelstein, I. J., Zheng, J., Ishikawa, H., Kim, S., Kwak, K., Fayer, M. D.
2007; 9 (13): 1533-1549
- **Confinement or Properties of the Interface? Dynamics of Nanoscopic Water in Reverse Micelles** *J. Am. Chem. Soc.*
Moilanen, D. E., Spry, D. B., Levinger, N. E., Fayer, M. D.
2007; 129: 14311 - 14318
- **Ultrafast chemical exchange 2D IR spectroscopy** *15th International Conference on Ultrafast Phenomena*
Zheng, J., Fayer, M. D.
SPRINGER-VERLAG BERLIN.2007: 323-325
- **Ultrafast 2D IR vibrational echo spectroscopy** *ACCOUNTS OF CHEMICAL RESEARCH*

- Zheng, J., Kwak, K., Fayer, M. D.
2007; 40 (1): 75-83
- **Phenol-benzene complexation dynamics: Quantum chemistry calculation, molecular dynamics simulations, and two dimensional IR spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Kwac, K., Lee, C., Jung, Y., Han, J., Kwak, K., Zheng, J., Fayer, M. D., Cho, M.
2006; 125 (24)
 - **Dynamics of a discotic liquid crystal in the isotropic phase** *JOURNAL OF CHEMICAL PHYSICS*
Li, J., Fruchey, K., Fayer, M. D.
2006; 125 (19)
 - **Identification and properties of the L-1(a) and L-1(b) states of pyranine** *JOURNAL OF CHEMICAL PHYSICS*
Spry, D. B., Goun, A., Bell, C. B., Fayer, M. D.
2006; 125 (14)
 - **Ultrafast two-dimensional infrared vibrational echo chemical exchange experiments and theory** *JOURNAL OF PHYSICAL CHEMISTRY B*
Kwak, K., Zheng, J., Cang, H., Fayer, M. D.
2006; 110 (40): 19998-20013
 - **Ultrafast carbon-carbon single-bond rotational isomerization in room-temperature solution** *SCIENCE*
Zheng, J., Kwak, K., Xie, J., Fayer, M. D.
2006; 313 (5795): 1951-1955
 - **Cytochrome c(552) mutants: Structure and dynamics at the active site probed by multidimensional NMR and vibration echo spectroscopy** *Festschrift in honor of the 65th Birthday of Robert J Silbey*
Massari, A. M., McClain, B. L., Finkelstein, I. J., Lee, A. P., Reynolds, H. L., Bren, K. L., Fayer, M. D.
AMER CHEMICAL SOC.2006: 18803-10
 - **Dynamics in supercooled ionic organic liquids and mode coupling theory analysis** *JOURNAL OF PHYSICAL CHEMISTRY A*
Li, J., Wang, I., Fruchey, K., Fayer, M. D.
2006; 110 (35): 10384-10391
 - **What nonlinear-IR experiments can tell you about water that the IR spectrum cannot** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Piletic, I. R., Moilanen, D. E., Levinger, N. E., Fayer, M. D.
2006; 128 (32): 10366-10367
 - **Photoinduced electron transfer and geminate recombination in the group head region of micelles** *JOURNAL OF CHEMICAL PHYSICS*
Glusac, K., Goun, A., Fayer, M. D.
2006; 125 (5)
 - **Tracking water's response to structural changes in Nafion membranes** *JOURNAL OF PHYSICAL CHEMISTRY A*
Moilanen, D. E., Piletic, I. R., Fayer, M. D.
2006; 110 (29): 9084-9088
 - **Testing the core/shell model of nanoconfined water in reverse micelles using linear and nonlinear IR spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY A*
Piletic, I. R., Moilanen, D. E., Spry, D. B., Levinger, N. E., Fayer, M. D.
2006; 110 (15): 4985-4999
 - **Dynamics of proteins encapsulated in silica sol-gel glasses studied with IR vibrational echo spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Massari, A. M., Finkelstein, I. J., Fayer, M. D.
2006; 128 (12): 3990-3997
 - **Ultrafast chemical exchange 2-D infrared spectroscopy of complexes in solution** *231st National Meeting of the American-Chemical-Society*
Fayer, M. D., Zheng, J., Kwak, K.
AMER CHEMICAL SOC.2006
 - **Formation and dissociation of intra-intermolecular hydrogen-bonded solute-solvent complexes: Chemical exchange two-dimensional infrared vibrational echo spectroscopy** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*

Zheng, J. R., Kwak, K., Chen, X., Asbury, J. B., Fayer, M. D.
2006; 128 (9): 2977-2987

- **Photoinduced electron transfer and geminate recombination in liquids on short time scales: Experiments and theory** *JOURNAL OF CHEMICAL PHYSICS*
Goun, A., Glusac, K., Fayer, M. D.
2006; 124 (8)
- **Three homeotropically aligned nematic liquid crystals: Comparison of ultrafast to slow time-scale dynamics** *JOURNAL OF CHEMICAL PHYSICS*
Li, J., WANG, I., Fayer, M. D.
2006; 124 (4)
- **A mode coupling theory description of the short- and long-time dynamics of nematogens in the isotropic phase** *JOURNAL OF CHEMICAL PHYSICS*
Li, J., Cang, H., ANDERSEN, H. C., Fayer, M. D.
2006; 124 (1)
- **Vibrational Echo and Pump-Probe Spectroscopic Studies of the Dynamics of Water Molecules Confined to Nanoscopic Dimensions** *Femtochemistry VII: Fundamental Ultrafast Processes in Chemistry, Physics, and Biology*
Piletic, I. R., Tan, H. S., Moilanen, D. E., Spry, B., Fayer, M. D., W, C. A., Kimble, J., Eds, M. L.
2006: 195 - 203
- **Comparisons of the Orientational Dynamics of Three Homeotropically Aligned Nematic Liquid Crystals** *J. Chem. Phys*
Li, J., Wang, I., Fayer, M. D.
2006; 124
- **Identification and Properties of the 1La and 1Lb States of Pyranine (HPTS)** *J. Chem. Phys.*
Spry, D. B., Goun, A., Bell III, C. B., Fayer, M. D.
2006; 125
- **Dynamics of nanoscopic water: Vibrational echo and infrared pump-probe studies of reverse micelles** *JOURNAL OF PHYSICAL CHEMISTRY B*
Piletic, I. R., TAN, H. S., Fayer, M. D.
2005; 109 (45): 21273-21284
- **Photoinduced electron transfer in the head group region of sodium dodecyl sulfate micelles** *JOURNAL OF LUMINESCENCE*
Nanda, J., Behera, P. K., Tavernier, H. L., Fayer, M. D.
2005; 115 (3-4): 138-146
- **Accidental vibrational degeneracy in vibrational excited states observed with ultrafast two-dimensional IR vibrational echo spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Zheng, J. R., Kwak, K., Steinel, T., Asbury, J., Chen, X., Xie, J., Fayer, M. D.
2005; 123 (16)
- **The influence of aqueous versus glassy solvents on protein dynamics: Vibrational echo experiments and molecular dynamics simulations** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Massari, A. M., Finkelstein, I. J., McClain, B. L., Goj, A., Wen, X., Bren, K. L., Loring, R. F., Fayer, M. D.
2005; 127 (41): 14279-14289
- **Ultrafast dynamics of myoglobin without the distal histidine: Stimulated vibrational echo experiments and molecular dynamics simulations** *JOURNAL OF PHYSICAL CHEMISTRY B*
Finkelstein, I. J., Goj, A., McClain, B. L., Massari, A. M., Merchant, K. A., Loring, R. F., Fayer, M. D.
2005; 109 (35): 16959-16966
- **Polarization selective spectroscopy experiments: methodology and pitfalls** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Tan, H. S., Piletic, I. R., Fayer, M. D.
2005; 22 (9): 2009-2017
- **Boson peak in supercooled liquids: Time domain observations and mode coupling theory** *JOURNAL OF CHEMICAL PHYSICS*
Cang, H., Li, J., ANDERSEN, H. C., Fayer, M. D.
2005; 123 (6)
- **Orientational dynamics of water confined on a nanometer length scale in reverse micelles** *JOURNAL OF CHEMICAL PHYSICS*
TAN, H. S., Piletic, I. R., Fayer, M. D.

2005; 122 (17)

- **Ultrafast to slow orientational dynamics of a homeotropically aligned nematic liquid crystal** *JOURNAL OF PHYSICAL CHEMISTRY B*
Li, J., WANG, I., Fayer, M. D.
2005; 109 (14): 6514-6519
- **Dynamics of water confined on a nanometer length scale in reverse micelles: Ultrafast infrared vibrational echo spectroscopy** *PHYSICAL REVIEW LETTERS*
TAN, H. S., Piletic, I. R., Riter, R. E., Levinger, N. E., Fayer, M. D.
2005; 94 (5)
- **Dynamics of water probed with vibrational echo correlation spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Asbury, J. B., Steinel, T., Kwak, K., Corcelli, S. A., Lawrence, C. P., Skinner, J. L., Fayer, M. D.
2004; 121 (24): 12431-12446
- **Watching hydrogen bonds break: A transient absorption study of water** *JOURNAL OF PHYSICAL CHEMISTRY A*
Steinel, T., Asbury, J. B., Zheng, J. R., Fayer, M. D.
2004; 108 (50): 10957-10964
- **Dynamics of hemoglobin in human erythrocytes and in solution: Influence of viscosity studied by ultrafast vibrational echo experiments** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
McClain, B. L., Finkelstein, I. J., Fayer, M. D.
2004; 126 (48): 15702-15710
- **Spectral diffusion in a fluctuating charge model of water** *JOURNAL OF CHEMICAL PHYSICS*
Corcelli, S. A., Lawrence, C. P., Asbury, J. B., Steinel, T., Fayer, M. D., Skinner, J. L.
2004; 121 (18): 8897-8900
- **Photoinduced intermolecular electron transfer in liquid solutions** *JOURNAL OF PHYSICAL CHEMISTRY A*
Saik, V. O., Goun, A. A., Nanda, J., Shirota, K., Tavernier, H. L., Fayer, M. D.
2004; 108 (32): 6696-6703
- **Vibrational echo experiments on red blood cells: Comparison of the dynamics of cytoplasmic and aqueous hemoglobin** *CHEMICAL PHYSICS LETTERS*
McClain, B. L., Finkelstein, I. J., Fayer, M. D.
2004; 392 (4-6): 324-329
- **Fifth-order contributions to ultrafast spectrally resolved vibrational echoes: Heme-CO proteins** *JOURNAL OF CHEMICAL PHYSICS*
Finkelstein, I. J., McClain, B. L., Fayer, M. D.
2004; 121 (2): 877-885
- **Hydrogen bond networks: Structure and evolution after hydrogen bond breaking** *JOURNAL OF PHYSICAL CHEMISTRY B*
Asbury, J. B., Steinel, T., Fayer, M. D.
2004; 108 (21): 6544-6554
- **Photoinduced electron transfer and geminate recombination for photoexcited acceptors in a pure donor solvent** *JOURNAL OF CHEMICAL PHYSICS*
Saik, V. O., Goun, A. A., Fayer, M. D.
2004; 120 (20): 9601-9611
- **Vibrational echo correlation spectroscopy probes of hydrogen bond dynamics in water and methanol** *8th International Meeting on Hole Burning Single Molecule, and Related Spectroscopies*
Asbury, J. B., Steinel, T., Fayer, M. D.
ELSEVIER SCIENCE BV.2004: 271-86
- **Water dynamics: dependence on local structure probed with vibrational echo correlation spectroscopy** *CHEMICAL PHYSICS LETTERS*
Steinel, T., Asbury, J. B., Corcelli, S. A., Lawrence, C. P., Skinner, J. L., Fayer, M. D.
2004; 386 (4-6): 295-300
- **Water dynamics: Vibrational echo correlation spectroscopy and comparison to molecular dynamics simulations** *JOURNAL OF PHYSICAL CHEMISTRY A*
Asbury, J. B., Steinel, T., Stromberg, C., Corcelli, S. A., Lawrence, C. P., Skinner, J. L., Fayer, M. D.
2004; 108 (7): 1107-1119

- **Vibrational Echo Correlation Spectroscopy: a New Probe of Hydrogen Bond Dynamics in Water and Methanol** *Femtosecond Laser Spectroscopy: Progress in Lasers*
Asbury, J. B., Steinel, T., Fayer, M. D.
edited by Hannaford, P.
Kluwer, Brussels.2004
- **Orientalional dynamics of the ionic organic liquid 1-ethyl-3-methylimidazolium nitrate** *JOURNAL OF CHEMICAL PHYSICS*
Cang, H., Li, J., Fayer, M. D.
2003; 119 (24): 13017-13023
- **Hydrogen bond breaking probed with multidimensional stimulated vibrational echo correlation spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Asbury, J. B., Steinel, T., Stromberg, C., Gaffney, K. J., Piletic, I. R., Fayer, M. D.
2003; 119 (24): 12981-12997
- **Hydrogen bond dynamics probed with ultrafast infrared heterodyne-detected multidimensional vibrational stimulated echoes** *PHYSICAL REVIEW LETTERS*
Asbury, J. B., Steinel, T., Stromberg, C., Gaffney, K. J., Piletic, I. R., Goun, A., Fayer, M. D.
2003; 91 (23)
- **Dynamical signature of two "ideal glass transitions" in nematic liquid crystals** *JOURNAL OF CHEMICAL PHYSICS*
Cang, H., Li, J., Novikov, V. N., Fayer, M. D.
2003; 119 (19): 10421-10427
- **Myoglobin-CO substate structures and dynamics: Multidimensional vibrational echoes and molecular dynamics simulations** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Merchant, K. A., Noid, W. G., Akiyama, R., Finkelstein, I. J., Goun, A., McClain, B. L., Loring, R. F., Fayer, M. D.
2003; 125 (45): 13804-13818
- **Using ultrafast infrared multidimensional correlation spectroscopy to aid in vibrational spectral peak assignments** *CHEMICAL PHYSICS LETTERS*
Asbury, J. B., Steinel, T., Fayer, M. D.
2003; 381 (1-2): 139-146
- **Structural dynamics of hydrogen bonded methanol oligomers: Vibrational transient hole burning studies of spectral diffusion** *JOURNAL OF CHEMICAL PHYSICS*
Piletic, I. R., Gaffney, K. J., Fayer, M. D.
2003; 119 (1): 423-434
- **Ultrafast heterodyne detected infrared multidimensional vibrational stimulated echo studies of hydrogen bond dynamics** *CHEMICAL PHYSICS LETTERS*
Asbury, J. B., Steinel, T., Stromberg, C., Gaffney, K. J., Piletic, I. R., Goun, A., Fayer, M. D.
2003; 374 (3-4): 362-371
- **Dynamics in supercooled liquids and in the isotropic phase of liquid crystals: A comparison** *JOURNAL OF CHEMICAL PHYSICS*
Cang, H., Li, J., Novikov, V. N., Fayer, M. D.
2003; 118 (20): 9303-9311
- **Experimental observation of a nearly logarithmic decay of the orientational correlation function in supercooled liquids on the picosecond-to-nanosecond time scales** *PHYSICAL REVIEW LETTERS*
Cang, H., Novikov, V. N., Fayer, M. D.
2003; 90 (19)
- **Hydrogen bond dynamics in alcohols.** *225th National Meeting of the American-Chemical-Society*
Fayer, M. D., Gaffney, K. J., Piletic, I. R.
AMER CHEMICAL SOC.2003: U467-U467
- **Logarithmic decay of the orientational correlation function in supercooled liquids on the Ps to Ns time scale** *JOURNAL OF CHEMICAL PHYSICS*
Cang, H., Novikov, V. N., Fayer, M. D.
2003; 118 (6): 2800-2807
- **Orientalional relaxation and vibrational excitation transfer in methanol-carbon tetrachloride solutions** *JOURNAL OF CHEMICAL PHYSICS*
Gaffney, K. J., Piletic, I. R., Fayer, M. D.

2003; 118 (5): 2270-2278

- **Isomerization and intermolecular solute-solvent interactions of ethyl isocyanate: Ultrafast infrared vibrational echoes and linear vibrational spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
Levinger, N. E., Davis, P. H., Behera, P. K., Myers, D. J., Stromberg, C., Fayer, M. D.
2003; 118 (3): 1312-1326
- **Structural assignments and dynamics of the A substates of MbCO: Spectrally resolved vibrational echo experiments and molecular dynamics simulations** *JOURNAL OF PHYSICAL CHEMISTRY B*
Merchant, K. A., Noid, W. G., Thompson, D. E., Akiyama, R., Loring, R. F., Fayer, M. D.
2003; 107 (1): 4-7
- **Experimental Observation of Nearly Logarithmic Decay of the Orientational Correlation Function in Supercooled Liquids on the Ps to Ns Time Scale** *Phys. Rev. Lett.*
Cang, H., Novikov, V. N., Fayer, M. D.
2003; 90 (197401)
- **Hydrogen bond dissociation and reformation in methanol oligomers following hydroxyl stretch relaxation** *JOURNAL OF PHYSICAL CHEMISTRY A*
Gaffney, K. J., Davis, P. H., Piletic, I. R., Levinger, N. E., Fayer, M. D.
2002; 106 (50): 12012-12023
- **Short time dynamics in the isotropic phase of liquid crystals: the aspect ratio and the power law decay** *CHEMICAL PHYSICS LETTERS*
Cang, H., Li, H., Fayer, M. D.
2002; 366 (1-2): 82-87
- **Hydrogen bond breaking and reformation in alcohol oligomers following vibrational relaxation of a non-hydrogen-bond donating hydroxyl stretch** *JOURNAL OF PHYSICAL CHEMISTRY A*
Gaffney, K. J., Piletic, I. R., Fayer, M. D.
2002; 106 (41): 9428-9435
- **Frequency selected ultrafast infrared vibrational echo studies of liquids, glasses, and proteins** *JOURNAL OF PHYSICAL CHEMISTRY A*
Merchant, K. A., Xu, Q. H., Thompson, D. E., Fayer, M. D.
2002; 106 (38): 8839-8849
- **Temperature-dependent vibrational dephasing: Comparison of liquid and glassy solvents using frequency-selected vibrational echoes** *JOURNAL OF CHEMICAL PHYSICS*
Xu, Q. H., Fayer, M. D.
2002; 117 (6): 2732-2740
- **Vibrational dynamics of a metalloporphyrin carbonyl in liquid and glass solutions: Ultrafast 1-D and frequency-selected vibrational echo experiments** *LASER PHYSICS*
Xu, Q. H., Fayer, M. D.
2002; 12 (8): 1104-1113
- **Influence of diffusion on the kinetics of donor-acceptor electron transfer monitored by the quenching of donor fluorescence** *JOURNAL OF PHYSICAL CHEMISTRY A*
Gladkikh, V. S., Burshtein, A. I., Tavernier, H. L., Fayer, M. D.
2002; 106 (30): 6982-6990
- **Myoglobin-CO conformational substate dynamics: 2D vibrational echoes and MD simulations** *BIOPHYSICAL JOURNAL*
Merchant, K. A., Thompson, D. E., Xu, Q. H., Williams, R. B., Loring, R. F., Fayer, M. D.
2002; 82 (6): 3277-3288
- **Comparison of the ultrafast to slow time scale dynamics of three liquid crystals in the isotropic phase** *JOURNAL OF CHEMICAL PHYSICS*
Gottke, S. D., Cang, H., Bagchi, B., Fayer, M. D.
2002; 116 (14): 6339-6347
- **Exploring relaxation and hydrogen bond breaking in methanol-d oligomers in carbon tetrachloride.**
Levinger, N. E., Davis, P. H., Fayer, M. D.
AMER CHEMICAL SOC.2002: C62-C62

- **Separation of contributions to the third-order signal: ultrafast frequency-selected vibrational echo experiments on a metalloporphyrin-CO** *CHEMICAL PHYSICS LETTERS*
Xu, Q. H., Thompson, D. E., Merchant, K. A., Fayer, M. D.
2002; 355 (1-2): 139-146
- **Vibrational dynamics of large hot molecules in the collisionless gas phase** *JOURNAL OF CHEMICAL PHYSICS*
Stromberg, C., Myers, D. J., Fayer, M. D.
2002; 116 (9): 3540-3553
- **Thermal, structural, and orientational relaxation of supercooled salol studied by polarization-dependent impulsive stimulated scattering** *JOURNAL OF CHEMICAL PHYSICS*
Glorieux, C., Nelson, K. A., Hinze, G., Fayer, M. D.
2002; 116 (8): 3384-3395
- **Accidental degeneracy beats: A distinct type of beat phenomenon in nonlinear optical spectroscopy** *PHYSICAL REVIEW A*
Merchant, K. A., Thompson, D. E., Fayer, M. D.
2002; 65 (2)
- **Orientational dynamics of the glass forming liquid, dibutylphthalate: Time domain experiments and comparison to mode coupling theory** *JOURNAL OF CHEMICAL PHYSICS*
Brace, D. D., Gottke, S. D., Cang, H., Fayer, M. D.
2002; 116 (4): 1598-1606
- **Liquid crystal dynamics in the isotropic phase** *JOURNAL OF CHEMICAL PHYSICS*
Gottke, S. D., Brace, D. D., Cang, H., Bagchi, B., Fayer, M. D.
2002; 116 (1): 360-367
- **Comparison of the Ultrafast to Slow Timescale Dynamics of Three Liquid Crystals in the Isotropic Phase** *J. Chem. Phys.*
Gottke, S. D., Cang, H., Bagchi, B., Fayer, M. D.
2002; 116: 6339-6347
- **Separation of Contributions to the Third-Order Vibrational Echo Signal: Ultrafast Frequency-Selected Experiments on a Metalloporphyrin-CO** *Chem. Phys. Lett.*
Xu, Q., Thompson, D. E., Merchant, K. A., Fayer, M. D.
2002; 355: 139-146
- **Vibrational relaxation of the free terminal hydroxyl stretch in methanol oligomers: Indirect pathway to hydrogen bond breaking** *JOURNAL OF CHEMICAL PHYSICS*
Levinger, N. E., Davis, P. H., Fayer, M. D.
2001; 115 (20): 9352-9360
- **Dynamic partitioning of an aromatic probe between the headgroup and core regions of cationic micelles** *JOURNAL OF PHYSICAL CHEMISTRY B*
Cang, H., Brace, D. D., Fayer, M. D.
2001; 105 (41): 10007-10015
- **Photoinduced intermolecular electron transfer in micelles: Dielectric and structural properties of micelle headgroup regions** *JOURNAL OF PHYSICAL CHEMISTRY A*
Tavernier, H. L., Laine, F., Fayer, M. D.
2001; 105 (39): 8944-8957
- **Temperature and density dependent solute vibrational relaxation in supercritical fluoroform** *JOURNAL OF CHEMICAL PHYSICS*
Myers, D. J., Shigeiwa, M., Cherayil, B. J., Fayer, M. D.
2001; 115 (10): 4689-4695
- **Two-dimensional ultrafast infrared vibrational echo studies of solute-solvent interactions and dynamics** *JOURNAL OF CHEMICAL PHYSICS*
Thompson, D. E., Merchant, K. A., Fayer, M. D.
2001; 115 (1): 317-330
- **Solute-solvent interactions: two-dimensional ultrafast infrared vibrational echo experiments** *CHEMICAL PHYSICS LETTERS*
Thompson, D. E., Merchant, K. A., Fayer, M. D.

2001; 340 (3-4): 267-274

- **Vibrational dephasing of carbonmonoxy myoglobin** *JOURNAL OF PHYSICAL CHEMISTRY B*
Williams, R. B., Loring, R. F., Fayer, M. D.
2001; 105 (19): 4068-4071
- **Two-dimensional time-frequency ultrafast infrared vibrational echo spectroscopy** *PHYSICAL REVIEW LETTERS*
Merchant, K. A., Thompson, D. E., Fayer, M. D.
2001; 86 (17): 3899-3902
- **Solute-solute spatial distribution in hydrogen bonding liquids probed with time-dependent intermolecular electron transfer** *JOURNAL OF CHEMICAL PHYSICS*
Tavernier, H. L., Fayer, M. D.
2001; 114 (10): 4552-4564
- **Effects of solvent viscosity on protein dynamics: Infrared vibrational echo experiments and theory** *JOURNAL OF PHYSICAL CHEMISTRY B*
Rector, K. D., Jiang, J. W., Berg, M. A., Fayer, M. D.
2001; 105 (5): 1081-1092
- **Time domain optical studies of dynamics in supercooled o-terphenyl: Comparison to mode coupling theory on fast and slow time scales** *JOURNAL OF PHYSICAL CHEMISTRY B*
Gottke, S. D., Brace, D. D., Hinze, G., Fayer, M. D.
2001; 105 (1): 238-245
- **Fast protein dynamics probed with infrared vibrational echo experiments** *ANNUAL REVIEW OF PHYSICAL CHEMISTRY*
Fayer, M. D.
2001; 52: 315-356
- **Elements of Quantum Mechanics**
Fayer, M. D.
Oxford University Press, New York.2001
- **Dynamic Partitioning of an Aromatic Probe Between the Head Group and Core Regions of Cationic Micelles** *J. Phys. Chem. B*
Cang, H., Brace, D. D., Fayer, M. D.
2001; 105: 10007-10015
- **Ultrafast Infrared and Raman Spectroscopy**
Fayer, M. D.
Marcel Dekker, New York.2001
- **Time Domain Optical Studies of Dynamics in Supercooled Ortho-terphenyl: Comparison to Mode Coupling Theory on Fast and Slow Time Scales** *J. Phys. Chem.*
Gottke, S. D., Brace, D. D., Hinze, G., Fayer, M. D.
2001; 105: 238-245
- **Photoinduced Intermolecular Electron Transfer in Micelles: Dielectric and Structural Properties of Micelle Head Group Regions** *J. Phys. Chem. A*
Tavernier, H. L., Laine, F., Fayer, M. D.
2001; 105: 8944-8957
- **Vibrational Relaxation of Polyatomic Molecules in Supercritical Fluids and the Gas Phase** *Ultrafast Infrared and Raman Spectroscopy*
Myers, D. J., Shigeiwa, M., Fayer, M. D., Cherayil, B. J.
edited by Fayer, M. D.
Marcel Dekker: New York.2001: 625-674
- **Infrared Vibrational Echo Experiments** *Ultrafast Infrared and Raman Spectroscopy*,
Rector, K. D., Fayer, M.
edited by Fayer, M. D.
Marcel Dekker: New York.2001: 227-272
- **Photoinduced intermolecular electron transfer in complex liquids: Experiment and theory** *JOURNAL OF CHEMICAL PHYSICS*
Tavernier, H. L., Kalashnikov, M. M., Fayer, M. D.

2000; 113 (22): 10191-10201

- **Distance dependence of electron transfer in DNA: The role of the reorganization energy and free energy** *JOURNAL OF PHYSICAL CHEMISTRY B*
Tavernier, H. L., Fayer, M. D.
2000; 104 (48): 11541-11550
- **A detailed test of mode-coupling theory on all time scales: Time domain studies of structural relaxation in a supercooled liquid** *JOURNAL OF CHEMICAL PHYSICS*
Hinze, G., Brace, D. D., Gottke, S. D., Fayer, M. D.
2000; 113 (9): 3723-3733
- **Two-pulse echo experiments in the spectral diffusion regime** *JOURNAL OF CHEMICAL PHYSICS*
Berg, M. A., Rector, K. D., Fayer, M. D.
2000; 113 (8): 3233-3242
- **Temperature dependence of solute vibrational relaxation in supercritical fluids: experiment and theory** *CHEMICAL PHYSICS LETTERS*
Myers, D. J., Shigeiwa, M., Stromberg, C., Fayer, M. D., Cherayil, B. J.
2000; 325 (5-6): 619-626
- **Vibrational lifetimes and spectral shifts in supercritical fluids as a function of density: Experiments and theory** *JOURNAL OF PHYSICAL CHEMISTRY B*
Myers, D. J., Shigeiwa, M., Fayer, M. D., Cherayil, B. J.
2000; 104 (10): 2402-2414
- **Orientational dynamics in supercooled liquids near T_c and comparison with ideal mode-coupling theory** *PHYSICAL REVIEW LETTERS*
Hinze, G., Brace, D. D., Gottke, S. D., Fayer, M. D.
2000; 84 (11): 2437-2440
- **Dynamics in globular proteins: vibrational echo experiments** *CHEMICAL PHYSICS LETTERS*
Rector, K. D., Thompson, D. E., Merchant, K., Fayer, M. D.
2000; 316 (1-2): 122-128
- **Orientational dynamics in supercooled liquids near T(c) and comparison with ideal mode-coupling theory** *Physical review letters*
Hinze, G., Brace, D. D., Gottke, S. D., Fayer, M. D.
2000; 84 (11): 2437-40
- **Orientational Dynamics in Supercooled Liquids Near T_c and Comparison to Ideal Mode Coupling Theory** *Phys. Rev. Lett.*
Hinze, G., Brace, D. D., Gottke, S. D., Fayer, M. D.
2000; 84: 2437-2440
- **Density dependent vibrational relaxation in supercritical fluids** *CHEMICAL PHYSICS LETTERS*
Myers, D. J., Shigeiwa, M., Fayer, M. D., Cherayil, B. J.
1999; 313 (3-4): 592-599
- **Non-exponential relaxation of a single quantum vibrational excitation of a large molecule in collision free gas phase at elevated temperature** *CHEMICAL PHYSICS LETTERS*
Myers, D. J., Shigeiwa, M., Fayer, M. D., Silbey, R.
1999; 312 (5-6): 399-406
- **Phase separation in binary and ternary polymer composites studied with electronic excitation transport** *MACROMOLECULES*
Hussey, D. M., Fayer, M. D.
1999; 32 (20): 6638-6645
- **Translational-rotational coupling in supercooled liquids: Heterodyne detected density induced molecular alignment** *JOURNAL OF CHEMICAL PHYSICS*
Hinze, G., Francis, R. S., Fayer, M. D.
1999; 111 (6): 2710-2719
- **T-2 selective scanning vibrational echo spectroscopy** *CHEMICAL PHYSICS LETTERS*
Rector, K. D., Fayer, M. D., Engholm, J. R., Crosson, E., Smith, T. I., Schwettman, H. A.
1999; 305 (1-2): 51-56
- **Density-induced heterodyne-amplified rotational dynamics: a new technique for studying orientational relaxation** *CHEMICAL PHYSICS LETTERS*

- Francis, R. S., Hinze, G., Fayer, M. D.
1999; 304 (1-2): 28-34
- **A dynamical transition in the protein myoglobin observed by infrared vibrational echo experiments** *JOURNAL OF PHYSICAL CHEMISTRY A*
Rector, K. D., Engholm, J. R., Rella, C. W., Hill, J. R., Dlott, D. D., Fayer, M. D.
1999; 103 (14): 2381-2387
 - **Crack propagation induced heating in crystalline energetic materials** *JOURNAL OF CHEMICAL PHYSICS*
Holmes, W., Francis, R. S., Fayer, M. D.
1999; 110 (7): 3576-3583
 - **Nitro group asymmetric stretching mode lifetimes of molecules used in energetic materials** *CHEMICAL PHYSICS LETTERS*
Aubuchon, C. M., Rector, K. D., Holmes, W., Fayer, M. D.
1999; 299 (1): 84-90
 - **T2 Selective Scanning Vibrational Echo Spectroscopy** *Chem. Phys. Lett.*
Rector, K. D., Fayer, M. D., Engholm, J. R., Crosson, E., Smith, T. I., Schwettman, H. A.
1999; 305: 51-56
 - **Myoglobin dynamics measured with vibrational echo experiments** *8th International Conference on Time-Resolved Vibrational Spectroscopy*
Rector, K. D., Fayer, M. D.
TAYLOR & FRANCIS LTD.1999: 19-34
 - **Monte Carlo simulations of electronic excitation transfer in polymer composites and comparison to theory** *JOURNAL OF CHEMICAL PHYSICS*
Hussey, D. M., Matzinger, S., Fayer, M. D.
1998; 109 (19): 8708-8718
 - **Temperature dependent vibrational lifetimes in supercritical fluids near the critical point** *JOURNAL OF CHEMICAL PHYSICS*
Myers, D. J., Chen, S., Shigeiwa, M., Cherayil, B. J., Fayer, M. D.
1998; 109 (14): 5971-5979
 - **Vibrational echo spectroscopy: Spectral selectivity from vibrational coherence** *JOURNAL OF CHEMICAL PHYSICS*
Rector, K. D., Zimdars, D., Fayer, M. D.
1998; 109 (13): 5455-5465
 - **Fluorescent probe solubilization in the headgroup and core regions of micelles: Fluorescence lifetime and orientational relaxation measurements** *JOURNAL OF PHYSICAL CHEMISTRY B*
Matzinger, S., Hussey, D. M., Fayer, M. D.
1998; 102 (37): 7216-7224
 - **Polystyrene size determination in polystyrene and poly(vinyl methyl ether) using electronic excitation transport** *JOURNAL OF PHYSICAL CHEMISTRY B*
Diachun, N. A., Hussey, D. M., Fayer, M. D.
1998; 102 (37): 7112-7119
 - **Myoglobin's ultrafast dynamics measured with vibrational echo experiments** *International Symposium on Free Electron Laser Facilities and Applications (FELFA 98)*
Rector, K. D., Fayer, M. D.
ELSEVIER SCIENCE BV.1998: 218-24
 - **Solvent reorganization energy and free energy change for donor/acceptor electron transfer at micelle surfaces: Theory and experiment** *JOURNAL OF PHYSICAL CHEMISTRY B*
Tavernier, H. L., Barzykin, A. V., Tachiya, M., Fayer, M. D.
1998; 102 (31): 6078-6088
 - **Vibrational echoes: a new approach to condensed-matter vibrational spectroscopy** *INTERNATIONAL REVIEWS IN PHYSICAL CHEMISTRY*
Rector, K. D., Fayer, M. D.
1998; 17 (3): 261-306
 - **Vibrational dynamics of polyatomic molecules in polyatomic supercritical fluids near the critical point.**
Fayer, M. D., Urdahl, R. S., Myers, D. J., Rector, K. D., Davis, P. H., Cherayil, B. J.
AMER CHEMICAL SOC.1998: U148-U148

- **Vibrational dephasing mechanisms in liquids and glasses: Vibrational echo experiments** *JOURNAL OF CHEMICAL PHYSICS*
Rector, K. D., Fayer, M. D.
1998; 108 (5): 1794-1803
- **Dynamics of myoglobin-CO with the proximal histidine removed: Vibrational echo experiments** *JOURNAL OF PHYSICAL CHEMISTRY B*
Rector, K. D., Engholm, J. R., Hill, J. R., Myers, D. J., Hu, R., Boxer, S. G., Dlott, D. D., Fayer, M. D.
1998; 102 (2): 331-333
- **Polystyrene Size Determination in Polystyrene and Polyvinylmethylether Using Electronic Excitation Transport** *J. Phys. Chem. B*
Diachun, N. A., Hussey, D. M., Fayer, M. D.
1998; 102: 7112-7119
- **Vibrational echo studies of proteins, liquids, and glasses** *Conference on Laser Techniques for Condensed-Phase and Biological Systems*
Rector, K. D., Fayer, M. D.
SPIE-INT SOC OPTICAL ENGINEERING.1998: 34-45
- **Vibrational Echoes: A New Approach to Condensed Mater Vibrational Spectroscopy** *Internat. Rev. Phys. Chem.*
Rector, K. D., Fayer, M. D.
1998; 17: 261-306
- **Temperature dependence of vibrational lifetimes at the critical density in supercritical mixtures** *JOURNAL OF CHEMICAL PHYSICS*
Myers, D. J., Urdahl, R. S., Cherayil, B. J., Fayer, M. D.
1997; 107 (23): 9741-9748
- **Vibrational relaxation in supercritical fluids near the critical point** *JOURNAL OF CHEMICAL PHYSICS*
Cherayil, B. J., Fayer, M. D.
1997; 107 (19): 7642-7650
- **Photoinduced electron transfer on the surfaces of micelles** *JOURNAL OF PHYSICAL CHEMISTRY B*
Weidemaier, K., Tavernier, H. L., Fayer, M. D.
1997; 101 (45): 9352-9361
- **Photoinduced electron transfer between donors and acceptors on micelle surfaces** *CHEMICAL PHYSICS LETTERS*
Weidemaier, K., Tavernier, H. L., Chu, K. T., Fayer, M. D.
1997; 276 (5-6): 309-315
- **Effect of chromophore diffusion on electronic excitation transfer in micellar systems** *CHEMICAL PHYSICS LETTERS*
Matzinger, S., Weidemaier, K., Fayer, M. D.
1997; 276 (3-4): 274-281
- **Vibrational echo studies of pure dephasing: Mechanisms in liquids and glasses** *CHEMICAL PHYSICS LETTERS*
Rector, K. D., KWOK, A. S., Ferrante, C., Francis, R. S., Fayer, M. D.
1997; 276 (3-4): 217-223
- **Vibrational lifetimes and vibrational line positions in polyatomic supercritical fluids near the critical point** *JOURNAL OF CHEMICAL PHYSICS*
Urdahl, R. S., Myers, D. J., Rector, K. D., Davis, P. H., Cherayil, B. J., Fayer, M. D.
1997; 107 (10): 3747-3757
- **Vibrational anharmonicity and multilevel vibrational dephasing from vibrational echo beats** *JOURNAL OF CHEMICAL PHYSICS*
Rector, K. D., KWOK, A. S., Ferrante, C., Tokmakoff, A., Rella, C. W., Fayer, M. D.
1997; 106 (24): 10027-10036
- **Electronic dephasing in nonpolar room temperature liquids: UV photon echo pulse duration dependent measurements** *JOURNAL OF CHEMICAL PHYSICS*
Zimdars, D., Francis, R. S., Ferrante, C., Fayer, M. D.
1997; 106 (18): 7498-7511
- **Temperature-dependent vibrational and orientational relaxation of monocarbonyls in polyatomic solvents.**
Davis, P. H., Aubuchon, C. M., Fayer, M. D.
AMER CHEMICAL SOC.1997: 117-PHYS

- **Photoinduced electron transfer and geminate recombination in liquids** *JOURNAL OF PHYSICAL CHEMISTRY A*
Weidemaier, K., Tavernier, H. L., Swallen, S. F., Fayer, M. D.
1997; 101 (10): 1887-1902
- **Mutant and wild-type myoglobin-CO protein dynamics: Vibrational echo experiments** *JOURNAL OF PHYSICAL CHEMISTRY B*
Rector, K. D., Rella, C. W., Hill, J. R., KWOK, A. S., Sligar, S. G., Chien, E. Y., Dlott, D. D., Fayer, M. D.
1997; 101 (8): 1468-1475
- **Vibrational Echo Studies of Heme Protein Dynamics** *ACS Symp. Ser.*
Fayer, M. D., Dlott, D. D.
edited by Foukas, J. T., Kivelson, D., Mohanty, U., Nelson, K. A.
1997: 337-50
- **Vibrational echo studies of heme-protein dynamics** *Symposium on Supercooled Liquids - Advances and Novel Applications, at the 212th National Meeting of the American-Chemical-Society*
Fayer, M. D., Dlott, D. D.
AMER CHEMICAL SOC.1997: 324-337
- **Electronic Dephasing of a Non-polar Solute in Non-polar Liquids: UV Femtosecond Photon Echo Pulse Duration Dependent Measurements** *J. Chem. Phys.*
Zimdars, D., Francis, R. S., Ferrante, C., Fayer, M. D.
1997; 106: 7498-7511
- **Electronic excitation transfer as a probe of phase behavior in polymer composites** *Conference on Advances in Fluorescence Sensing Technology III*
Hussey, D. M., Keller, L., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1997: 446-452
- **Vibrational relaxation of a polyatomic solute in a polyatomic supercritical fluid near the critical point** *JOURNAL OF CHEMICAL PHYSICS*
Urdahl, R. S., Rector, K. D., Myers, D. J., Davis, P. H., Fayer, M. D.
1996; 105 (19): 8973-8976
- **Tuning the vibrational relaxation of CO bound to heme and metalloporphyrin complexes** *JOURNAL OF PHYSICAL CHEMISTRY*
Hill, J. R., Ziegler, C. J., Suslick, K. S., Dlott, D. D., Rella, C. W., Fayer, M. D.
1996; 100 (46): 18023-18032
- **Vibrational echo studies of myoglobin-CO** *JOURNAL OF PHYSICAL CHEMISTRY*
Rella, C. W., Rector, K. D., Kwok, A., Hill, J. R., Schwettman, H. A., Dlott, D. D., Fayer, M. D.
1996; 100 (38): 15620-15629
- **Vibrational relaxation in metalloporphyrin CO complexes** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Dlott, D. D., Fayer, M. D., Hill, J. R., Rella, C. W., Suslick, K. S., Ziegler, C. J.
1996; 118 (33): 7853-7854
- **Vibrational echo studies of protein dynamics** *PHYSICAL REVIEW LETTERS*
Rella, C. W., Kwok, A., RECTOR, K., Hill, J. R., Schwettman, H. A., Dlott, D. D., Fayer, M. D.
1996; 77 (8): 1648-1651
- **Vibrational dynamics of carbon monoxide at the active sites of mutant heme proteins** *JOURNAL OF PHYSICAL CHEMISTRY*
Hill, J. R., Dlott, D. D., Rella, C. W., Peterson, K. A., Decatur, S. M., Boxer, S. G., Fayer, M. D.
1996; 100 (29): 12100-12107
- **Photophysical studies of probes bound to cross-link junctions in poly(dimethyl siloxane) elastomers and nanocomposites** *3rd International Symposium on Functional Dyes (FUNCTIONAL DYE 95)*
Leezenberg, P. B., Fayer, M. D., Frank, C. W.
INT UNION PURE APPLIED CHEMISTRY.1996: 1381-88
- **Calculations of electronic excitation transfer: Applications to ordered phases in polymeric materials** *JOURNAL OF PHYSICAL CHEMISTRY*
Keller, L., Hussey, D. M., Fayer, M. D.
1996; 100 (24): 10257-10264
- **Experimental and theoretical analysis of photoinduced electron transfer: Including the role of liquid structure** *JOURNAL OF PHYSICAL CHEMISTRY*

- Swallen, S. F., Weidemaier, K., Tavernier, H. L., Fayer, M. D.
1996; 100 (20): 8106-8117
- **Rotational dynamics of naphthalene-labeled cross-link junctions in poly(dimethylsiloxane) elastomers** *JOURNAL OF PHYSICAL CHEMISTRY*
Leezenberg, P. B., Marcus, A. H., Frank, C. W., Fayer, M. D.
1996; 100 (18): 7646-7655
 - **Electronic spectral diffusion in glasses: The influence of coupling to the medium on experimental observables** *JOURNAL OF CHEMICAL PHYSICS*
Zimdars, D., Fayer, M. D.
1996; 104 (11): 3865-3875
 - **Role of diffusion in photoinduced electron transfer on a micelle surface: Theoretical and Monte Carlo investigations** *JOURNAL OF PHYSICAL CHEMISTRY*
Weidemaier, K., Fayer, M. D.
1996; 100 (9): 3767-3774
 - **Solvent structure and hydrodynamic effects in photoinduced electron transfer** *JOURNAL OF CHEMICAL PHYSICS*
Swallen, S. F., Weidemaier, K., Fayer, M. D.
1996; 104 (8): 2976-2986
 - **Theory of electronic excitation transfer in polymer micelles and lamellae** *7th International Conference on Unconventional Photoactive Systems*
Hussey, D. M., Keller, L., Fayer, M. D.
GORDON BREACH PUBLISHING, TAYLOR & FRANCIS GROUP.1996: 173-177
 - **Temperature-dependent vibrational dynamics and inhomogeneous broadening in glass-forming liquids studied with infrared photon echoes** *9th International Symposium on Ultrafast Processes in Spectroscopy (UPS 95)*
Tokmakoff, A., Fayer, M. D.
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1996: 123-125
 - **Vibrational population dynamics in liquids and glasses - IR pump-probe experiments from 10 K to 300 K** *9th International Symposium on Ultrafast Processes in Spectroscopy (UPS 95)*
Ferrante, C., Tokmakoff, A., TAITI, C., KWOK, A. S., Francis, R. S., Rector, K. D., Fayer, M. D.
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1996: 115-117
 - **Rotational Dynamics of Naphthalene-Labeled Cross-link Junctions of Varying Functionality in Poly(dimethylsiloxane) Elastomers** *J. Phys. Chem.*
Leezenberg, P. B., Marcus, A. H., Frank, C. W., Fayer, M. D.
1996; 100: 7646-7655
 - **Liquid, glass, and protein vibrational dynamics: Infrared vibrational echo experiments** *Proceedings of the Fifth International Meeting on Hole Burning and Related Spectroscopies (HBRS'96) - Science and Applications*
Rector, K. D., Fayer, M. D.
GORDON BREACH PUBLISHING, TAYLOR & FRANCIS GROUP.1996: 1-9
 - **Nanodomain formation and phase separation in polymer blends** *Fluorescence Detection IV Conference*
Hussey, D. M., Keller, L., Diachun, N. A., Marcus, A. H., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1996: 136-142
 - **Chromophore rich nanodomains in bulk and ultra thin film polymer blends** *7th International Conference on Unconventional Photoactive Systems*
Marcus, A. H., Morkved, T., Jaeger, H., Rice, S. A., Hussey, D. M., Diachun, N. A., Fayer, M. D.
GORDON BREACH PUBLISHING, TAYLOR & FRANCIS GROUP.1996: 31-35
 - **Ultrafast infrared spectroscopy in biomolecules: Active site dynamics of heme proteins** *7th International Conference on Time Resolved Vibrational Spectroscopy (TRVS-7)*
Hill, J. R., Dlott, D. D., Rella, C. W., Smith, T. I., Schwettman, H. A., Peterson, K. A., Kwok, A., Rector, K. D., Fayer, M. D.
JOHN WILEY & SONS LTD.1996: 277-99
 - **PHOTOINDUCED ELECTRON-TRANSFER AND GEMINATE RECOMBINATION IN LIQUIDS - ANALYTICAL THEORY AND MONTE-CARLO SIMULATIONS** *JOURNAL OF CHEMICAL PHYSICS*
Swallen, S. F., Fayer, M. D.
1995; 103 (20): 8864-8872

- **NANODOMAIN FORMATION IN A LIQUID POLYMER BLEND - THE INITIAL-STAGES OF PHASE-SEPARATION** *JOURNAL OF CHEMICAL PHYSICS*
Marcus, A. H., Hussey, D. M., Diachun, N. A., Fayer, M. D.
1995; 103 (18): 8189-8200
- **INFRARED PHOTON-ECHO EXPERIMENTS - EXPLORING VIBRATIONAL DYNAMICS IN LIQUIDS AND GLASSES** *ACCOUNTS OF CHEMICAL RESEARCH*
Tokmakoff, A., Fayer, M. D.
1995; 28 (11): 437-445
- **VIBRATIONAL-RELAXATION OF CARBON-MONOXIDE IN MODEL HEME COMPOUNDS - 6-COORDINATE METALLOPORPHYRINS (M=FE, RU, OS)** *CHEMICAL PHYSICS LETTERS*
Hill, J. R., Dlott, D. D., Fayer, M. D., Peterson, K. A., Rella, C. W., Rosenblatt, M. M., Suslick, K. S., Ziegler, C. J.
1995; 244 (3-4): 218-223
- **INFRARED VIBRATIONAL PHOTON-ECHO EXPERIMENTS IN LIQUIDS AND GLASSES** *JOURNAL OF PHYSICAL CHEMISTRY*
Tokmakoff, A., Zimdars, D., Urdahl, R. S., Francis, R. S., KWOK, A. S., Fayer, M. D.
1995; 99 (36): 13310-13320
- **THE LOW-FREQUENCY DENSITY-OF-STATES AND VIBRATIONAL POPULATION-DYNAMICS OF POLYATOMIC-MOLECULES IN LIQUIDS** *JOURNAL OF CHEMICAL PHYSICS*
Moore, P., Tokmakoff, A., Keyes, T., Fayer, M. D.
1995; 103 (9): 3325-3334
- **HOMOGENEOUS VIBRATIONAL DYNAMICS AND INHOMOGENEOUS BROADENING IN GLASS-FORMING LIQUIDS - INFRARED PHOTON-ECHO EXPERIMENTS FROM ROOM-TEMPERATURE TO 10 K** *JOURNAL OF CHEMICAL PHYSICS*
Tokmakoff, A., Fayer, M. D.
1995; 103 (8): 2810-2826
- **VIBRATIONAL DYNAMICS OF LIQUIDS AND GLASSES PROBED WITH IR PHOTON-ECHOES** *International Workshop on Laser Physics (LPHYS-94)*
Tokmakoff, A., KOWK, A., Urdahl, R., Zimdars, D. A., Francis, R., Fayer, M. D.
INTERPERIODICA.1995: 652-55
- **VIBRATIONAL DYNAMICS IN CONDENSED MATTER PROBED WITH LINAC BASED FELS** *16th International Free Electron Laser Conference*
Tokmakoff, A., KOWK, A., URHDAL, R., Zimdars, D. A., Fayer, M. D.
ELSEVIER SCIENCE BV.1995: 540-43
- **MULTILEVEL VIBRATIONAL DEPHASING AND VIBRATIONAL ANHARMONICITY FROM INFRARED PHOTON-ECHO BEATS** *CHEMICAL PHYSICS LETTERS*
Tokmakoff, A., KWOK, A. S., Urdahl, R. S., Francis, R. S., Fayer, M. D.
1995; 234 (4-6): 289-295
- **VIBRATIONAL SPECTRAL DIFFUSION AND POPULATION-DYNAMICS IN A GLASS-FORMING LIQUID - VARIABLE BANDWIDTH PICOSECOND INFRARED-SPECTROSCOPY** *JOURNAL OF CHEMICAL PHYSICS*
Tokmakoff, A., Urdahl, R. S., Zimdars, D., Francis, R. S., KWOK, A. S., Fayer, M. D.
1995; 102 (10): 3919-3931
- **THEORY OF UNIVERSAL FAST ORIENTATIONAL DYNAMICS IN THE ISOTROPIC-PHASE OF LIQUID-CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
Sengupta, A., Fayer, M. D.
1995; 102 (10): 4193-4202
- **PHOTOINDUCED ELECTRON-TRANSFER AND GEMINATE RECOMBINATION ON A MICELLE SURFACE - ANALYTICAL THEORY AND MONTE-CARLO SIMULATIONS** *JOURNAL OF CHEMICAL PHYSICS*
Weidemaier, K., Fayer, M. D.
1995; 102 (9): 3820-3829
- **EXCLUDED-VOLUME EFFECTS IN PHOTOINDUCED ELECTRON-TRANSFER AND GEMINATE RECOMBINATION - ANALYTICAL THEORY AND SIMULATIONS** *JOURNAL OF PHYSICAL CHEMISTRY*
Swallen, S. F., Weidemaier, K., Fayer, M. D.

1995; 99 (7): 1856-1866

- **Vibrational Dynamics in Liquids and Glasses Probed with Infrared Photon Echoes Using a Free Electron Laser**
Zimdars, D., Tokmakoff, A., Sauter, B., Francis, R. S., Kwok, A. S., Fayer, M. D.
edited by Barbara, P. F., Knox, W. H., Mourou, G. A., Zewail, A. H.,
1995: 58-62
- **Vibrational Dynamics in Condensed Matter Probed with Linac Based FELs** *Nuclear Instruments & Methods in Physics Research A*
Tokmakoff, A., Kwok, A. S., Urdahl, R. S., Zimdars, D. A., Fayer, M. D.
1995; 358: 550-553
- **Vibrational Dynamics at the Active Site of Myoglobin: Picosecond Infrared Free Electron Laser Experiments**
Peterson, K. A., Hill, J. R., Tokmakoff, A., Sauter, B., Zimdars, D., Dlott, D. D., Fayer, M. D.
edited by Barbara, P. F., Knox, W. H., Mourou, G. A., Zewail, A. H.
1995: 445-47
- **Local Order and Ultrafast Molecular Dynamics in Liquids: Subpicosecond Transient Grating Optical Kerr Effect Experiments**
Sengupta, A., Fayer, M. D.
edited by Barbara, P. F., Knox, W. H., Mourou, G. A., Zewail, A. H.
1995: 97-98
- **THEORY OF VIBRATIONAL-RELAXATION OF POLYATOMIC-MOLECULES IN LIQUIDS** *JOURNAL OF CHEMICAL PHYSICS*
Kenkre, V. M., Tokmakoff, A., Fayer, M. D.
1994; 101 (12): 10618-10629
- **VIBRATIONAL DYNAMICS OF CARBON-MONOXIDE AT THE ACTIVE-SITE OF MYOGLOBIN - PICOSECOND INFRARED FREE-ELECTRON LASER PUMP-PROBE EXPERIMENTS** *JOURNAL OF PHYSICAL CHEMISTRY*
Hill, J. R., Tokmakoff, A., Peterson, K. A., Sauter, B., Zimdars, D., Dlott, D. D., Fayer, M. D.
1994; 98 (43): 11213-11219
- **VIBRATIONAL PHOTON-ECHOES IN A LIQUID AND GLASS - ROOM-TEMPERATURE TO 10-K** *JOURNAL OF CHEMICAL PHYSICS*
Tokmakoff, A., Zimdars, D., Sauter, B., Francis, R. S., KWOK, A. S., Fayer, M. D.
1994; 101 (2): 1741-1744
- **INTERMOLECULAR STRUCTURE IN A SINGLE-COMPONENT POLYMER GLASS - TOWARDS HIGH-RESOLUTION MEASUREMENTS OF THE SIDE-CHAIN PAIR CORRELATION-FUNCTION** *JOURNAL OF CHEMICAL PHYSICS*
Marcus, A. H., Fayer, M. D., Curro, J. G.
1994; 100 (12): 9156-9169
- **TEMPERATURE-DEPENDENT VIBRATIONAL-RELAXATION IN POLYATOMIC LIQUIDS - PICOSECOND INFRARED PUMP-PROBE EXPERIMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Tokmakoff, A., Sauter, B., Fayer, M. D.
1994; 100 (12): 9035-9043
- **PHONON-INDUCED SCATTERING BETWEEN VIBRATIONS AND MULTIPHOTON VIBRATIONAL UP-PUMPING IN LIQUID SOLUTION** *CHEMICAL PHYSICS LETTERS*
Tokmakoff, A., Sauter, B., KWOK, A. S., Fayer, M. D.
1994; 221 (5-6): 412-418
- **DYNAMICS IN POLYDIMETHYLSILOXANE - THE EFFECT OF SOLUTE POLARITY** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Diachun, N. A., Marcus, A. H., Hussey, D. M., Fayer, M. D.
1994; 116 (3): 1027-1032
- **ULTRAFAST NONEXPONENTIAL DYNAMICS IN A POLYMER GLASS-FORMING LIQUID** *JOURNAL OF CHEMICAL PHYSICS*
Sengupta, A., Fayer, M. D.
1994; 100 (2): 1673-1683
- **EFFECTS OF LOCAL LIQUID STRUCTURE ON ORIENTATIONAL RELAXATION - 2-ETHYLNAPHTHALENE, NEAT AND IN SOLUTION** *JOURNAL OF PHYSICAL CHEMISTRY*
Greenfield, S. R., Sengupta, A., Stankus, J. J., Terazima, M., Fayer, M. D.

1994; 98 (1): 313-320

- **Local Order and Ultrafast dynamics in Liquids** *Transient Grating Optical Kerr Effect Experiments*
Sengupta, A., Fayer, M. D.
edited by Rizzo, T., Myers, A.
John Wiley & Sons, New York.1994: 211–282
- **PICOSECOND VIBRATIONAL PHOTON-ECHO EXPERIMENTS IN LIQUIDS AND GLASSES** *Conference on Longer Wavelength Lasers and Applications*
Zimdars, D., Tokmakoff, A., Sauter, B., Chen, S., KWOK, A. S., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1994: 26–34
- **MOLECULAR-ENERGY TRANSFER IN CONDENSED MATTER STUDIED BY ULTRAFAST VIBRATIONAL SPECTROSCOPY** *Conference on Longer Wavelength Lasers and Applications*
Hill, J. R., Chen, S., Dlott, D. D., Tokmakoff, A., Sauter, B., Zimdars, D., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1994: 75–84
- **Phonon Induced Scattering Between Vibrations and Multiphoton Up-pumping in Liquid Solution** *Chem. Phys. Lett.*
Tokmakoff, A., Sauter, B., Kwok, A. S., Fayer, M. D.
1994; 221: 412-418
- **Electron Transfer in Solution: Theory and Experiment** *Ultrafast Spectroscopy of Chemical Systems*
Fayer, M. D., Song, L., Swallen, S. E., Dorfman, R. C., Weidemaier, K.
edited by John, S.
Kluwer Academic Publishers.1994: 37–80
- **STRUCTURE OF COMPLEX-SYSTEMS USING ELECTRONIC EXCITATION TRANSPORT - THEORY, MONTE-CARLO SIMULATIONS, AND EXPERIMENTS ON MICELLE SOLUTIONS** *JOURNAL OF CHEMICAL PHYSICS*
FINGER, K. U., Marcus, A. H., Fayer, M. D.
1994; 100 (1): 271-286
- **INFLUENCE OF LOCAL LIQUID STRUCTURE ON ORIENTATIONAL DYNAMICS - ISOTROPIC-PHASE OF LIQUID-CRYSTALS** *JOURNAL OF PHYSICAL CHEMISTRY*
Stankus, J. J., Torre, R., Fayer, M. D.
1993; 97 (37): 9478-9487
- **OPTICAL PARAMETRIC AMPLIFICATION OF 1-KHZ HIGH-ENERGY PICOSECOND MIDINFRARED PULSES AND APPLICATION TO INFRARED TRANSIENT-GRATING EXPERIMENTS ON DIAMOND** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Tokmakoff, A., Marshall, C. D., Fayer, M. D.
1993; 10 (9): 1785-1791
- **INTERMOLECULAR STRUCTURE IN A POLYMER GLASS - ELECTRONIC EXCITATION TRANSFER STUDIES** *MACROMOLECULES*
Marcus, A. H., Diachun, N. A., Fayer, M. D.
1993; 26 (12): 3041-3048
- **TRANSIENT GRATING DIFFRACTION FROM AN INTERFACE BETWEEN 2 MATERIALS - THEORY AND EXPERIMENTAL APPLICATION** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Fishman, I. M., Marshall, C. D., Tokmakoff, A., Fayer, M. D.
1993; 10 (6): 1006-1016
- **DYNAMICS OF IONIC LIPOPHILIC PROBES IN MICELLES - PICOSECOND FLUORESCENCE DEPOLARIZATION MEASUREMENTS** *JOURNAL OF PHYSICAL CHEMISTRY*
Quitevis, E. L., Marcus, A. H., Fayer, M. D.
1993; 97 (21): 5762-5769
- **EXTRA RESONANCES IN TIME-DOMAIN 4-WAVE-MIXING** *OPTICS LETTERS*
Fourkas, J. T., Trebino, R., Dugan, M. A., Fayer, M. D.
1993; 18 (10): 781-783
- **PICOSECOND INFRARED VIBRATIONAL PHOTON-ECHOES IN A LIQUID AND GLASS USING A FREE-ELECTRON LASER** *PHYSICAL REVIEW LETTERS*

Zimdars, D., Tokmakoff, A., Chen, S., Greenfield, S. R., Fayer, M. D., Smith, T. I., Schwettman, H. A.

1993; 70 (18): 2718-2721

- **CHEMICAL-REACTION INITIATION AND HOT-SPOT FORMATION IN SHOCKED ENERGETIC MOLECULAR MATERIALS** *JOURNAL OF PHYSICAL CHEMISTRY*
Tokmakoff, A., Fayer, M. D., Dlott, D. D.
1993; 97 (9): 1901-1913
- **FLAME TEMPERATURE-MEASUREMENT USING PICOSECOND TRANSIENT GRATING EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Brewer, T. R., Fourkas, J. T., Fayer, M. D.
1993; 203 (4): 344-348
- **PHOTOINDUCED ELECTRON-TRANSFER AND GEMINATE RECOMBINATION IN SOLUTION** *JOURNAL OF PHYSICAL CHEMISTRY*
Song, L., Swallen, S. F., DORFMAN, R. C., Weidemaier, K., Fayer, M. D.
1993; 97 (7): 1374-1382
- **THERMAL-BOUNDARY RESISTANCE AND DIFFUSIVITY MEASUREMENTS ON THIN YBA₂CU₃O_{7-X} FILMS WITH MGO AND SRTiO₃ SUBSTRATES USING THE TRANSIENT GRATING METHOD** *JOURNAL OF APPLIED PHYSICS*
Marshall, C. D., Tokmakoff, A., Fishman, I. M., Eom, C. B., Phillips, J. M., Fayer, M. D.
1993; 73 (2): 850-857
- **The Influence of Local Liquid Structure on Orientational Dynamics: The Isotropic Phase of Liquid Crystals** *J. Phys. Chem.*
Stankus, J. J., Torre, R., Fayer, M. D.
1993; 97: 9478-9487
- **FEL-MICROSCOPY FOR THE INVESTIGATION OF TRANSIENT LOCAL HEATING IN SINGLE LIVING CELLS** *CONF ON FREE-ELECTRON LASER SPECTROSCOPY IN BIOLOGY, MEDICINE, AND MATERIALS SCIENCE*
Tromberg, B. J., Peterson, K. A., Krasieva, T. B., Shimizu, S., RELLA, C. A., Jeung, A., CHAPMAN, C. F., Dlott, D. D., Fayer, M. D., Schwettman, H. A., Berns, M. W.
SPIE - INT SOC OPTICAL ENGINEERING.1993: 154-161
- **PICOSECOND INFRARED VIBRATIONAL PHOTON-ECHOES AND LIFETIME MEASUREMENTS USING THE STANFORD SUPERCONDUCTING-ACCELERATOR-PUMPED FREE-ELECTRON LASER** *CONF ON FREE-ELECTRON LASER SPECTROSCOPY IN BIOLOGY, MEDICINE, AND MATERIALS SCIENCE*
Fayer, M. D., Zimdars, D., Tokmakoff, A., Chen, S., Greenfield, S. R., Smith, T. I., Schwettman, H. A.
SPIE - INT SOC OPTICAL ENGINEERING.1993: 86-93
- **ULTRAFAST DYNAMICS OF NEMATIC LIQUID-CRYSTALS IN THE ISOTROPIC-PHASE** *CONF ON ULTRAFAST PULSE GENERATION AND SPECTROSCOPY*
Stankus, J. J., Torre, R., Greenfield, S. R., Sengupta, A., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1993: 263-274
- **INTERFACE SELECTIVE TRANSIENT GRATING SPECTROSCOPY - THEORY AND APPLICATIONS TO THERMAL FLOW AND ACOUSTIC PROPAGATION IN SUPERCONDUCTING THIN-FILMS** *CONF ON ULTRAFAST PULSE GENERATION AND SPECTROSCOPY*
Marshall, C. D., Tokmakoff, A., Fishman, I. M., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1993: 302-313
- **SHOCKED ENERGETIC MOLECULAR MATERIALS - CHEMICAL-REACTION INITIATION AND HOT-SPOT FORMATION** *SYMP ON STRUCTURE AND PROPERTIES OF ENERGETIC MATERIALS, AT THE 1992 FALL MEETING OF THE MATERIALS RESEARCH SOC*
Fayer, M. D., Tokmakoff, A., Dlott, D. D.
MATERIALS RESEARCH SOC.1993: 379-384
- **Thermal Diffusivity Measurement of Natural and Isotopically Enriched Diamond by Picosecond Infrared Transient Grating Experiments** *Applied Physics A*
Tokmakoff, A., Fayer, M. D., Banholtzer, W.
1993; 56: 87-90
- **Optical Parametric Generation of 1 kHz, High Energy, Picosecond Infrared Pulses and Application to Infrared Transient Grating Experiments on Diamond** *J.O.S.A. B*
Tokmakoff, A., Marshall, C. D., Fayer, M. D.
1993; 10: 1785-1791

- **Extra Resonances in Time-Domain Four-Wave Mixing Experiments** *Optics Letters*
Fourkas, J. T., Trebino, R., Dugan, M. A., Fayer, M. D.
1993; 18: 781-783
- **Shocked Energetic Molecular Materials: Chemical Reaction Initiation and Hot Spot Formation** *Materials Research Society*
Fayer, M. D., Tokmakoff, A., Dlott, D. D.
edited by Liebenberg, D. H., Armstrong, R. W., Gilman, J. J.
1993: 379-84
- **Dynamics in Complex Liquids: Optical Nonlinear Experiments** *Femtosecond Spectroscopy of Chemical Reactions*
Fayer, M. D.
1993: 271-286
- **ELECTRONIC EXCITATION TRANSFER IN CONCENTRATED MICELLE SOLUTIONS** *JOURNAL OF PHYSICAL CHEMISTRY*
Marcus, A. H., Diachun, N. A., Fayer, M. D.
1992; 96 (22): 8930-8937
- **ULTRAFAST SIDE GROUP MOTIONS OF POLYMERS** *JOURNAL OF PHYSICAL CHEMISTRY*
Sengupta, A., Terazima, M., Fayer, M. D.
1992; 96 (21): 8619-8626
- **SPECTRAL DIFFUSION IN LIQUIDS** *JOURNAL OF CHEMICAL PHYSICS*
Stein, A. D., Fayer, M. D.
1992; 97 (5): 2948-2962
- **THE GRATING DECOMPOSITION METHOD - A NEW APPROACH FOR UNDERSTANDING POLARIZATION-SELECTIVE TRANSIENT GRATING EXPERIMENTS .1. THEORY** *JOURNAL OF CHEMICAL PHYSICS*
Fourkas, J. T., Trebino, R., Fayer, M. D.
1992; 97 (1): 69-77
- **THE GRATING DECOMPOSITION METHOD - A NEW APPROACH FOR UNDERSTANDING POLARIZATION-SELECTIVE TRANSIENT GRATING EXPERIMENTS .2. APPLICATIONS** *JOURNAL OF CHEMICAL PHYSICS*
Fourkas, J. T., Trebino, R., Fayer, M. D.
1992; 97 (1): 78-85
- **NANOSECOND TIME SCALE DYNAMICS OF PSEUDO-NEMATIC DOMAINS IN THE ISOTROPIC-PHASE OF LIQUID-CRYSTALS** *CHEMICAL PHYSICS LETTERS*
Stankus, J. J., Torre, R., Marshall, C. D., Greenfield, S. R., Sengupta, A., Tokmakoff, A., Fayer, M. D.
1992; 194 (3): 213-216
- **DYNAMICS IN POLY(DIMETHYLSILOXANE) MELTS - FLUORESCENCE DEPOLARIZATION MEASUREMENTS OF PROBE CHROMOPHORE ORIENTATIONAL RELAXATION** *JOURNAL OF PHYSICAL CHEMISTRY*
Stein, A. D., Hoffmann, D. A., Marcus, A. H., Leezenberg, P. B., Frank, C. W., Fayer, M. D.
1992; 96 (13): 5255-5263
- **LOCAL-STRUCTURE DYNAMICS IN LIQUIDS - NONHYDRODYNAMIC ORIENTATIONAL RELAXATION OF 2-ETHYL NAPHTHALENE** *CHEMICAL PHYSICS LETTERS*
Greenfield, S. R., Sengupta, A., Stankus, J. J., Fayer, M. D.
1992; 193 (1-3): 49-54
- **THE INFLUENCE OF DIFFUSION ON PHOTOINDUCED ELECTRON-TRANSFER AND GEMINATE RECOMBINATION** *JOURNAL OF CHEMICAL PHYSICS*
DORFMAN, R. C., Fayer, M. D.
1992; 96 (10): 7410-7422
- **THERMAL-DIFFUSION, INTERFACIAL THERMAL BARRIER, AND ULTRASONIC PROPAGATION IN YBA2CU3O7-X THIN-FILMS - SURFACE-SELECTIVE TRANSIENT-GRATING EXPERIMENTS** *PHYSICAL REVIEW B*
Marshall, C. D., Fishman, I. M., DORFMAN, R. C., Eom, C. B., Fayer, M. D.
1992; 45 (17): 10009-10021

- **THE TRANSIENT GRATING - A HOLOGRAPHIC WINDOW TO DYNAMIC PROCESSES** *ACCOUNTS OF CHEMICAL RESEARCH*
Fourkas, J. T., Fayer, M. D.
1992; 25 (5): 227-233
- **DYNAMICS IN A LOW-TEMPERATURE GLASS - FAST GENERATION AND DETECTION OF OPTICAL HOLES** *JOURNAL OF CHEMICAL PHYSICS*
Littau, K. A., Dugan, M. A., Chen, S., Fayer, M. D.
1992; 96 (5): 3484-3494
- **REORIENTATIONAL MOTION OF A CROSS-LINK JUNCTION IN A POLY(DIMETHYLSILOXANE) NETWORK MEASURED BY TIME-RESOLVED FLUORESCENCE DEPOLARIZATION** *JOURNAL OF CHEMICAL PHYSICS*
Stein, A. D., Hoffman, D. A., Frank, C. W., Fayer, M. D.
1992; 96 (4): 3269-3278
- **Reorientational Motion of a Crosslink Junction in a Poly(dimethylsiloxane) Network Measured by Time-resolved Fluorescence Depolarization** *J. Chem. Phys.*
Stein, A. D., Hoffmann, D. A., Frank, C. W., Fayer, M. D.
1992; 96: 3269-3278
- **APPLICATIONS OF INFRARED FREE-ELECTRON LASERS - BASIC RESEARCH ON THE DYNAMICS OF MOLECULAR-SYSTEMS** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
Dlott, D. D., Fayer, M. D.
1991; 27 (12): 2697-2713
- **PICOSECOND POLARIZATION-SELECTIVE TRANSIENT GRATING EXPERIMENTS IN SODIUM-SEEDED FLAMES** *JOURNAL OF CHEMICAL PHYSICS*
Fourkas, J. T., Brewer, T. R., Kim, H. K., Fayer, M. D.
1991; 95 (8): 5775-5784
- **SURFACE SELECTIVITY IN 4-WAVE-MIXING - TRANSIENT GRATINGS AS A THEORETICAL AND EXPERIMENTAL EXAMPLE** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Fishman, I. M., Marshall, C. D., Meth, J. S., Fayer, M. D.
1991; 8 (9): 1880-1888
- **PICOSECOND PHOTON-ECHO EXPERIMENTS USING A SUPERCONDUCTING ACCELERATOR-PUMPED FREE-ELECTRON LASER** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Bai, Y. S., Greenfield, S. R., Fayer, M. D., Smith, T. I., Frisch, J. C., SWENT, R. L., Schwettman, H. A.
1991; 8 (8): 1652-1662
- **PICOSECOND FEL EXPERIMENTS ON CONDENSED MATTER SYSTEMS** *12TH INTERNATIONAL CONF ON FREE ELECTRON LASER (FEL 90)*
Fayer, M. D.
ELSEVIER SCIENCE BV.1991: 797-97
- **TEMPERATURE-DEPENDENT INTERSYSTEM CROSSING AND TRIPLET TRIPLET ABSORPTION OF RUBRENE IN SOLID-SOLUTION** *JOURNAL OF LUMINESCENCE*
Li, S., Fayer, M. D.
1991; 50 (2): 75-81
- **INFLUENCE OF DIFFUSION ON PHOTOINDUCED ELECTRON-TRANSFER** *JOURNAL OF PHYSICAL CHEMISTRY*
Song, L., DORFMAN, R. C., Swallen, S. F., Fayer, M. D.
1991; 95 (9): 3454-3457
- **ELECTRONIC EXCITATION TRANSFER IN CLUSTERED CHROMOPHORE SYSTEMS - CALCULATION OF TIME-RESOLVED OBSERVABLES FOR INTERCLUSTER TRANSFER** *JOURNAL OF CHEMICAL PHYSICS*
Marcus, A. H., Fayer, M. D.
1991; 94 (8): 5622-5630
- **FORWARD AND BACK PHOTOINDUCED ELECTRON-TRANSFER IN SOLID-SOLUTIONS - A COMPARISON OF THEORETICAL METHODS** *CHEMICAL PHYSICS LETTERS*
DORFMAN, R. C., Tachiya, M., Fayer, M. D.
1991; 179 (1-2): 152-158

- **PHOTORESPONSE OF NB FILMS - OBSERVATION OF BIEXPONENTIAL RECOVERY TIMES OF THE SUPERCONDUCTING STATE** 1990 *APPLIED SUPERCONDUCTIVITY CONF*
Johnson, M., BLUZER, N., Rezyer, M., Geballe, T. H., Greenfield, S. R., Stankus, J. J., Fayer, M. D., Herring, C.
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.1991: 1523-27
- **SUPERCONDUCTING, TRANSITION, AND NORMAL STATE PHOTORESPONSE IN YBCO OBSERVED AT DIFFERENT TEMPERATURES** 1990 *APPLIED SUPERCONDUCTIVITY CONF*
BLUZER, N., Fork, D. K., Geballe, T. H., Beasley, M. R., Reizer, M. Y., Greenfield, S. R., Stankus, J. J., Fayer, M.
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.1991: 1519-22
- **ANOMALOUS PHOTORESPONSE OF METAL-FILMS** *APPLIED PHYSICS LETTERS*
Johnson, M., Beasley, M. R., Geballe, T. H., Greenfield, S. R., Stankus, J. J., Fayer, M. D.
1991; 58 (6): 568-570
- **ULTRASONIC WAVE-PROPAGATION AND BARRIER-LIMITED HEAT-FLOW IN THIN-FILMS OF YBA2CU3O7-X** *PHYSICAL REVIEW B*
Marshall, C. D., Fishman, I. M., Fayer, M. D.
1991; 43 (4): 2696-2699
- **PROBING LOW-TEMPERATURE GLASS DYNAMICS BY FAST GENERATION AND DETECTION OF OPTICAL HOLES** *CHEMICAL PHYSICS LETTERS*
Littau, K. A., Fayer, M. D.
1991; 176 (6): 551-558
- **PICOSECOND TIME-RESOLVED 4-WAVE-MIXING EXPERIMENTS IN SODIUM-SEEDED FLAMES** *OPTICS LETTERS*
Fourkas, J. T., Brewer, T. R., Kim, H. J., Fayer, M. D.
1991; 16 (3): 177-179
- **OBSERVATION OF FAST TIME SCALE SPECTRAL DIFFUSION IN A LOW-TEMPERATURE GLASS - COMPARISON OF PICOSECOND PHOTON AND STIMULATED ECHOES** *CHEMICAL PHYSICS LETTERS*
Narasimhan, L. R., Bai, Y. S., Dugan, M. A., Fayer, M. D.
1991; 176 (3-4): 335-342
- **SOLVENT RELAXATION EFFECTS ON THE KINETICS OF PHOTOINDUCED ELECTRON-TRANSFER REACTIONS** *JOURNAL OF CHEMICAL PHYSICS*
Najbar, J., DORFMAN, R. C., Fayer, M. D.
1991; 94 (2): 1081-1092
- **NANOSECOND TIMESCALE OPTICAL INHOMOGENEOUS BROADENING OF DYE MOLECULES IN LIQUIDS AT AND NEAR ROOM-TEMPERATURE** *CHEMICAL PHYSICS LETTERS*
Stein, A. D., Fayer, M. D.
1991; 176 (2): 159-166
- **Excitation Transport in Polymeric Solids** *Laser Optics of Condensed Matter*
Fayer, M. D.
edited by Maradudin, M., Garmino, G., Rebane, R.
Plenum Press.1991: 157-163
- **THERMAL HISTORY AND TEMPERATURE-DEPENDENT PHOTON-ECHO AND HOLE BURNING LINEWIDTHS IN LOW-TEMPERATURE GLYCEROL GLASSES** *CHEMICAL PHYSICS LETTERS*
Littau, K. A., Elschner, A., Fayer, M. D.
1990; 175 (3): 149-155
- **PHOTOINDUCED ELECTRON-TRANSFER, GEMINATE RECOMBINATION, AND DIFFUSION IN LIQUID SOLUTION** *JOURNAL OF PHYSICAL CHEMISTRY*
DORFMAN, R. C., Lin, Y., Fayer, M. D.
1990; 94 (21): 8007-8009
- **SOLVENT RELAXATION AND ELECTRON BACK TRANSFER FOLLOWING PHOTOINDUCED ELECTRON-TRANSFER IN AN ENSEMBLE OF RANDOMLY DISTRIBUTED DONORS AND ACCEPTORS** *JOURNAL OF CHEMICAL PHYSICS*
Lin, Y., DORFMAN, R. C., Fayer, M. D.

1990; 93 (5): 3550-3561

- **NONHYDRODYNAMIC MOLECULAR MOTIONS IN A COMPLEX LIQUID - TEMPERATURE-DEPENDENT DYNAMICS IN PENTYLCYANOBIPHENYL** *JOURNAL OF CHEMICAL PHYSICS*
Deeg, F. W., Greenfield, S. R., Stankus, J. J., NEWELL, V. J., Fayer, M. D.
1990; 93 (5): 3503-3514
- **HIGH-TEMPERATURE OPTICAL DEPHASING MECHANISM FOR DYE MOLECULES IN PMMA GLASS** *CHEMICAL PHYSICS LETTERS*
Elschner, A., Narasimhan, L. R., Fayer, M. D.
1990; 171 (1-2): 19-24
- **OPTICAL DEPHASING OF A NEAR-INFRARED DYE IN PMMA - PHOTON-ECHOES USING THE SUPERCONDUCTING ACCELERATOR PUMPED FREE-ELECTRON LASER** *CHEMICAL PHYSICS LETTERS*
Greenfield, S. R., Bai, Y. S., Fayer, M. D.
1990; 170 (2-3): 133-138
- **HOLE BURNING LINE-SHAPES IN A 2-DIMENSIONAL GLASS - A MODEL FOR HOLE BURNING LINE-SHAPES OF MOLECULES ON SURFACES** *CHEMICAL PHYSICS LETTERS*
Pack, D. W., Fayer, M. D.
1990; 168 (3-4): 371-378
- **PROBING ORGANIC GLASSES AT LOW-TEMPERATURE WITH VARIABLE TIME SCALE OPTICAL DEPHASING MEASUREMENTS** *CHEMICAL REVIEWS*
Narasimhan, L. R., Littau, K. A., Pack, D. W., Bai, Y. S., Elschner, A., Fayer, M. D.
1990; 90 (3): 439-457
- **DISPERSIVE EXCITATION TRANSPORT AT ELEVATED-TEMPERATURES (50-K-298-K) - EXPERIMENTS AND THEORY** *JOURNAL OF CHEMICAL PHYSICS*
Stein, A. D., Peterson, K. A., Fayer, M. D.
1990; 92 (9): 5622-5635
- **DYNAMICS IN THE PRETRANSITIONAL ISOTROPIC-PHASE OF PENTYLCYANOBIPHENYL STUDIED WITH SUBPICOSECOND TRANSIENT GRATING EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Deeg, F. W., Fayer, M. D.
1990; 167 (6): 527-534
- **SOLVATION SHELL EFFECTS AND SPECTRAL DIFFUSION - PHOTON-ECHO AND OPTICAL HOLE BURNING EXPERIMENTS ON IONIC DYES IN ETHANOL GLASS** *JOURNAL OF CHEMICAL PHYSICS*
Pack, D. W., Narasimhan, L. R., Fayer, M. D.
1990; 92 (7): 4125-4138
- **EXPERIMENTAL AND THEORETICAL-ANALYSIS OF TRANSIENT GRATING GENERATION AND DETECTION OF ACOUSTIC WAVE-GUIDE MODES IN ULTRATHIN SOLIDS** *JOURNAL OF APPLIED PHYSICS*
Meth, J. S., Marshall, C. D., Fayer, M. D.
1990; 67 (7): 3362-3377
- **2-LEVEL SYSTEMS AND LOW-TEMPERATURE GLASS DYNAMICS - SPECTRAL DIFFUSION AND THERMAL REVERSIBILITY OF HOLE-BURNING LINEWIDTHS** *JOURNAL OF CHEMICAL PHYSICS*
Littau, K. A., Bai, Y. S., Fayer, M. D.
1990; 92 (7): 4145-4158
- **AN EXAMINATION OF RADIATIVE AND NONRADIATIVE EXCITATION TRANSPORT IN THIN ANTHRACENE-CRYSTALS - TRANSIENT GRATING EXPERIMENTS** *SOLID STATE COMMUNICATIONS*
Meth, J. S., Marshall, C. D., Fayer, M. D.
1990; 74 (4): 281-284
- **SHOCKED MOLECULAR-SOLIDS - VIBRATIONAL UP PUMPING, DEFECT HOT SPOT FORMATION, AND THE ONSET OF CHEMISTRY** *JOURNAL OF CHEMICAL PHYSICS*
Dlott, D. D., Fayer, M. D.
1990; 92 (6): 3798-3812

- **PSEUDOLocal MODES OF GUEST MOLECULES IN MIXED MOLECULAR-CRYSTALS - PHOTON-ECHO EXPERIMENTS AND COMPUTER-SIMULATIONS** *JOURNAL OF CHEMICAL PHYSICS*
Olson, R. W., Meth, J. S., Marshall, C. D., NEWELL, V. J., Fayer, M. D.
1990; 92 (6): 3323-3334
- **TRANSIENT GRATING OPTICAL KERR EFFECT MEASUREMENTS OF REORIENTATIONAL DYNAMICS IN LIQUIDS AND LIQUID-CRYSTALLINE SAMPLES** *19TH EUROPEAN CONGRESS ON MOLECULAR SPECTROSCOPY (EUCMOS 19)*
Deeg, F. W., Fayer, M. D.
ELSEVIER SCIENCE BV.1990: 19-24
- **QUANTITATIVE MEASUREMENT OF CHAIN CONTRACTION IN A SOLID BLEND OF 2 INCOMPATIBLE POLYMERS - POLY(METHYL METHACRYLATE) POLY(VINYL ACETATE)** *MACROMOLECULES*
Peterson, K. A., Stein, A. D., Fayer, M. D.
1990; 23 (1): 111-120
- **Dispersive Excitation Transport at Elevated Temperatures (50-298 K): Experiments and Theory** *J. Chem. Phys.*
Stein, A. D., Peterson, K. A., Fayer, M. D.
1990; 92: 5622-5635
- **LOW-TEMPERATURE GLASS DYNAMICS PROBED BY OPTICAL DEPHASING MEASUREMENTS** *JOURNAL OF LUMINESCENCE*
Narasimhan, L. R., Littau, K. A., Bai, Y. S., Pack, D. W., Elschner, A., Fayer, M. D.
1990; 45 (1-6): 49-53
- **ROTATIONAL-DYNAMICS IN SIMPLE AND NEMATOGENIC LIQUIDS - TRANSIENT GRATING OPTICAL KERR EFFECT INVESTIGATIONS** *7TH INTERNATIONAL CONF ON ULTRAFAST PHENOMENA*
Deeg, F. W., Fayer, M. D.
SPRINGER-VERLAG BERLIN.1990: 447-449
- **MULTITIMESCALE DYNAMICS IN GLASSES - OPTICAL DEPHASING AND SOLUTE-SOLVENT INTERACTIONS** *CONF ON PICOSECOND AND FEMTOSECOND SPECTROSCOPY FROM LABORATORY TO REAL WORLD*
Narasimhan, L. R., Pack, D. W., Elschner, A., Bai, Y. S., Fayer, M. D.
SPIE - INT SOC OPTICAL ENGINEERING.1990: 43-52
- **Photoinduced Electron Transfer, Geminate Recombination, and Diffusion in Liquid Solutions** *J. Phys. Chem.*
Dorfman, R. C., Lin, Y., Fayer, M. D.
1990; 94: 8007-8009
- **THE NATURE OF GLASS DYNAMICS - THERMAL REVERSIBILITY OF SPECTRAL DIFFUSION IN A LOW-TEMPERATURE GLASS** *CHEMICAL PHYSICS LETTERS*
Bai, Y. S., Littau, K. A., Fayer, M. D.
1989; 162 (6): 449-454
- **GENERATION AND DETECTION OF ACOUSTIC WAVE-GUIDE MODES IN ULTRATHIN CRYSTALS USING THE TRANSIENT GRATING TECHNIQUE** *CHEMICAL PHYSICS LETTERS*
Meth, J. S., Marshall, C. D., Fayer, M. D.
1989; 162 (4-5): 306-312
- **PICOSECOND TIME-SCALE PHASE-RELATED OPTICAL PULSES - MEASUREMENT OF SODIUM OPTICAL COHERENCE DECAY BY OBSERVATION OF INCOHERENT FLUORESCENCE** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Fourkas, J. T., Wilson, W. L., Wackerle, G., Frost, A. E., Fayer, M. D.
1989; 6 (10): 1905-1910
- **DISPERSIVE ELECTRONIC EXCITATION TRANSPORT IN POLYMERIC SOLIDS AT AND NEAR ROOM-TEMPERATURE** *CHEMICAL PHYSICS LETTERS*
Stein, A. D., Peterson, K. A., Fayer, M. D.
1989; 161 (1): 16-22
- **EXPERIMENTAL INVESTIGATION OF DONOR-ACCEPTOR ELECTRON-TRANSFER AND BACK TRANSFER IN SOLID-SOLUTIONS** *JOURNAL OF PHYSICAL CHEMISTRY*
DORFMAN, R. C., Lin, Y., Fayer, M. D.
1989; 93 (17): 6388-6396

- **ANALYSIS OF COMPLEX MOLECULAR-DYNAMICS IN AN ORGANIC LIQUID BY POLARIZATION SELECTIVE SUBPICOSECOND TRANSIENT GRATING EXPERIMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Deeg, F. W., Fayer, M. D.
1989; 91 (4): 2269-2279
- **TIME EVOLUTION OF NON-PHOTOCHEMICAL HOLE BURNING LINEWIDTHS - OBSERVATION OF SPECTRAL DIFFUSION AT LONG TIMES** *CHEMICAL PHYSICS LETTERS*
Littau, K. A., Bai, Y. S., Fayer, M. D.
1989; 159 (1): 1-6
- **ANISOTROPIC REORIENTATIONAL RELAXATION OF BIPHENYL - TRANSIENT GRATING OPTICAL KERR EFFECT MEASUREMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Deeg, F. W., Stankus, J. J., Greenfield, S. R., NEWELL, V. J., Fayer, M. D.
1989; 90 (12): 6893-6902
- **TIME SCALES AND OPTICAL DEPHASING MEASUREMENTS - INVESTIGATION OF DYNAMICS IN COMPLEX-SYSTEMS** *PHYSICAL REVIEW B*
Bai, Y. S., Fayer, M. D.
1989; 39 (15): 11066-11084
- **APPLICATION OF A 2-COLOR FREE-ELECTRON LASER TO CONDENSED-MATTER MOLECULAR-DYNAMICS** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
Dlott, D. D., Fayer, M. D.
1989; 6 (5): 977-994
- **TUNABLE SUBPICOSECOND DYE-LASER AMPLIFIED AT 1 KHZ BY A CAVITY-DUMPED, Q-SWITCHED, AND MODE-LOCKED ND-YAG LASER** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
NEWELL, V. J., Deeg, F. W., Greenfield, S. R., Fayer, M. D.
1989; 6 (2): 257-263
- **FLUORESCENCE DEPOLARIZATION OF CHROMOPHORES IN POLYMERIC SOLIDS** *MACROMOLECULES*
Peterson, K. A., Zimmt, M. B., Fayer, M. D., Jeng, Y. H., Frank, C. W.
1989; 22 (2): 874-879
- **Electronic Excitation Transport in Restricted Geometries** *Molecular Dynamics in Restricted Geometries*
Peterson, K. A., Stein, A., Fayer, M. D.
edited by Klafter, J., Drake, J. M.
John Wiley & Sons, New York.1989: 39-75
- **A New Approach to the Nonlinear Spectroscopic Investigation of Dynamics in Complex Solids: Theory and Experiments** *Comments on Condensed Matter Physics*
Bai, Y. S., Fayer, M. D.
1989; 14: 243-364
- **TIME-DEPENDENCE OF DONOR-ACCEPTOR ELECTRON-TRANSFER AND BACK TRANSFER IN SOLID-SOLUTION** *JOURNAL OF CHEMICAL PHYSICS*
Lin, Y., DORFMAN, R. C., Fayer, M. D.
1989; 90 (1): 159-170
- **Polymers in Solids: Structure and Interactions Measured by Electronic Excitation Transport** *Optical Techniques to Characterizing Polymer Systems*
Peterson, K. A., Stein, A. D., Fayer, M. D., Bässler, H.
Elsevier Science Publishers, B.V., The Netherlands.1989: 277-324
- **OPTICAL DEPHASING IN GLASSES - THEORETICAL COMPARISON OF THE INCOHERENT PHOTON-ECHO, ACCUMULATED GRATING ECHO, AND 2-PULSE PHOTON-ECHO EXPERIMENTS** *CHEMICAL PHYSICS*
Bai, Y. S., Fayer, M. D.
1988; 128 (1): 135-155
- **SOLUTE SOLVENT DYNAMICS AND INTERACTIONS IN GLASSY MEDIA - PHOTON-ECHO AND OPTICAL HOLE BURNING STUDIES OF CRESYL VIOLET IN ETHANOL GLASS** *CHEMICAL PHYSICS LETTERS*
Narasimhan, L. R., Pack, D. W., Fayer, M. D.

1988; 152 (4-5): 287-293

- **PHOTOINDUCED ELECTRON-TRANSFER AND BACK TRANSFER IN SYSTEMS OF RANDOMLY DISTRIBUTED DONORS AND ACCEPTORS - PICOSECOND TRANSIENT GRATING EXPERIMENTS** *JOURNAL OF PHYSICAL CHEMISTRY*
DORFMAN, R. C., Lin, Y., Zimmt, M. B., Baumann, J., DOMINGUE, R. P., Fayer, M. D.
1988; 92 (15): 4258-4260
- **EFFECTS OF SPECTRAL DIFFUSION IN INCOHERENT PHOTON-ECHO EXPERIMENTS** *PHYSICAL REVIEW B*
Bai, Y. S., Fayer, M. D.
1988; 37 (17): 10440-10443
- **POLARITON EFFECTS IN TRANSIENT GRATING EXPERIMENTS PERFORMED ON ANTHRACENE SINGLE-CRYSTALS** *CHEMICAL PHYSICS LETTERS*
Rose, T. S., NEWELL, V. J., Meth, J. S., Fayer, M. D.
1988; 145 (5): 475-480
- **SHORT POLYMER-CHAIN STATISTICS AND THE RELATIONSHIP TO END TO END ELECTRONIC EXCITATION TRANSPORT - RANDOM-WALKS WITH VARIABLE STEP LENGTHS** *MACROMOLECULES*
Zimmt, M. B., Peterson, K. A., Fayer, M. D.
1988; 21 (4): 1145-1154
- **THEORY OF THE PHONON PERTURBED PHOTON-ECHO EXPERIMENT - DIRECT DETERMINATION OF ELECTRONIC EXCITATION PHONON COUPLING** *JOURNAL OF CHEMICAL PHYSICS*
Wilson, W. L., Wackerle, G., Fayer, M. D.
1988; 88 (6): 3407-3416
- **DYNAMICS IN LOW-TEMPERATURE GLASSES - THEORY AND EXPERIMENTS ON OPTICAL DEPHASING, SPECTRAL DIFFUSION, AND HYDROGEN TUNNELING** *JOURNAL OF CHEMICAL PHYSICS*
Berg, M., Walsh, C. A., Narasimhan, L. R., Littau, K. A., Fayer, M. D.
1988; 88 (3): 1564-1587
- **An Investigation of the Mechanism of Nonphotochemical Hole Burning of Resorufin in Ethanol Glass** *Chem. Phys. Lett.*
Kokai, F., Tanaka, H., Brauman, J. L., Fayer, M. D.
1988; 143: 1-5
- **AN INVESTIGATION OF THE MECHANISM OF NON-PHOTOCHEMICAL HOLE BURNING OF RESORUFIN IN ETHANOL GLASS** *CHEMICAL PHYSICS LETTERS*
Kokai, F., Tanaka, H., Brauman, J. I., Fayer, M. D.
1988; 143 (1): 1-5
- **Picosecond Transient Grating Experiments on Hydrogenated Amorphous Silicon** *International Conference on Unconventional Photoactive Solids*
Newell, V. J., Feyer, M. D.
1988: 225-236
- **EFFECT OF HYDROGEN-BOND STRENGTH ON RESORUFIN NONPHOTOCHEMICAL HOLE BURNING IN ETHANOL-2,2,2-TRIFLUOROETHANOL GLASSES** *CHEMICAL PHYSICS LETTERS*
Tanaka, H., Kokai, F., Brauman, J. I., Fayer, M. D.
1987; 142 (5): 371-375
- **PICOSECOND PHOTON-ECHO AND OPTICAL HOLE BURNING STUDIES OF CHROMOPHORES IN ORGANIC GLASSES** *JOURNAL OF LUMINESCENCE*
Berg, M., Walsh, C. A., Narasimhan, L. R., Fayer, M. D.
1987; 38 (1-6): 9-14
- **OPTICAL HOMOGENEOUS LINEWIDTHS OF RESORUFIN IN ETHANOL GLASS - AN APPARENT CONTRADICTION BETWEEN HOLE-BURNING AND PHOTON-ECHO RESULTS - COMMENT** *CHEMICAL PHYSICS LETTERS*
Walsh, C. A., Berg, M., Narasimhan, L. R., Fayer, M. D.
1987; 139 (5): 485-490
- **IMPURITY PERTURBED DOMAINS - RESONANT ENHANCEMENT OF BULK MODE CARS BY COUPLING TO THE ELECTRONIC STATES OF DILUTE IMPURITIES** *JOURNAL OF CHEMICAL PHYSICS*
Wilson, W. L., Wackerle, G., Fayer, M. D.

1987; 87 (5): 2498-2504

- **HOMOGENEOUS OPTICAL DEPHASING AND LINE BROADENING PROCESSES IN AN ORGANIC GLASS - COMPARISON OF THE TEMPERATURE DEPENDENCES OF PICOSECOND PHOTON-ECHO AND HOLE BURNING EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Berg, M., Walsh, C. A., Narasimhan, L. R., Littau, K. A., Fayer, M. D.
1987; 139 (1): 66-71
- **GAS-PHASE DYNAMICS AND SPECTROSCOPY PROBED WITH PICOSECOND TRANSIENT GRATING EXPERIMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Rose, T. S., Wilson, W. L., Wackerle, G., Fayer, M. D.
1987; 86 (10): 5370-5391
- **PICOSECOND TRANSIENT GRATING EXPERIMENTS IN SODIUM VAPOR - VELOCITY AND POLARIZATION EFFECTS** *JOURNAL OF PHYSICAL CHEMISTRY*
Rose, T. S., Wilson, W. L., Wackerle, G., Fayer, M. D.
1987; 91 (7): 1704-1707
- **PROBING INTERMOLECULAR INTERACTIONS WITH PICOSECOND PHOTON-ECHO EXPERIMENTS** *ACCOUNTS OF CHEMICAL RESEARCH*
Walsh, C. A., Berg, M., Narasimhan, L. R., Fayer, M. D.
1987; 20 (3): 120-126
- **ULTRAFAST OPTICAL DEPHASING IN A LOW-TEMPERATURE ORGANIC GLASS** *CHEMICAL PHYSICS LETTERS*
Walsh, C. A., Berg, M., Narasimhan, L. R., Littau, K. A., Fayer, M. D.
1987; 134 (3): 268-272
- **QUANTITATIVE-DETERMINATION OF THE RADIUS OF GYRATION OF POLY(METHYL METHACRYLATE) IN THE AMORPHOUS SOLID-STATE BY TIME-RESOLVED FLUORESCENCE DEPOLARIZATION MEASUREMENTS OF EXCITATION TRANSPORT** *MACROMOLECULES*
Peterson, K. A., Zimmt, M. B., Linse, S., DOMINGUE, R. P., Fayer, M. D.
1987; 20 (1): 168-175
- **ENSEMBLE AVERAGE CONFORMATION OF ISOLATED POLYMER COILS IN SOLID BLENDS USING ELECTRONIC EXCITATION TRANSPORT** *ACS SYMPOSIUM SERIES*
Peterson, K. A., Zimmt, M. B., Linse, S., Fayer, M. D.
1987; 358: 323-342
- **A PICOSECOND PHOTON-ECHO STUDY OF A CHROMOPHORE IN AN ORGANIC GLASS - TEMPERATURE-DEPENDENCE AND COMPARISON TO NONPHOTOCHEMICAL HOLE BURNING** *JOURNAL OF CHEMICAL PHYSICS*
Walsh, C. A., Berg, M., Narasimhan, L. R., Fayer, M. D.
1987; 86 (1): 77-87
- **ELECTRONIC EXCITATION TRANSPORT ON ISOLATED, FLEXIBLE POLYMER-CHAINS IN THE AMORPHOUS SOLID-STATE RANDOMLY TAGGED OR END TAGGED WITH CHROMOPHORES** *JOURNAL OF CHEMICAL PHYSICS*
Peterson, K. A., Fayer, M. D.
1986; 85 (8): 4702-4711
- **INFLUENCE OF ORIENTATIONAL FLUCTUATIONS ON ELECTRON-TRANSFER IN SYSTEMS OF DONOR-ACCEPTOR PAIRS** *JOURNAL OF PHYSICAL CHEMISTRY*
DOMINGUE, R. P., Fayer, M. D.
1986; 90 (21): 5141-5146
- **EXCITATION TRANSFER IN DISORDERED TWO-DIMENSIONAL AND ANISOTROPIC 3-DIMENSIONAL SYSTEMS - EFFECTS OF SPATIAL GEOMETRY ON TIME-RESOLVED OBSERVABLES** *JOURNAL OF CHEMICAL PHYSICS*
Baumann, J., Fayer, M. D.
1986; 85 (7): 4087-4107
- **OPTICAL DEPHASING OF CHROMOPHORES IN AN ORGANIC GLASS - PICOSECOND PHOTON-ECHO AND HOLE BURNING EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Walsh, C. A., Berg, M., Narasimhan, L. R., Fayer, M. D.
1986; 130 (1-2): 6-11
- **EFFECT OF CHOLESTEROL ON VISCOELASTIC PROPERTIES OF DIPALMITOYLPHOSPHATIDYLCHOLINE MULTILAYERS AS MEASURED BY A LASER-INDUCED ULTRASONIC PROBE** *BIOCHEMISTRY*

- ELSAYED, M. Y., GUION, T. A., Fayer, M. D.
1986; 25 (17): 4825-4832
- **PICOSECOND HOLOGRAPHIC GRATING GENERATION OF ULTRASONIC-WAVES** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
Fayer, M. D.
1986; 22 (8): 1437-1452
 - **OPTICAL DEPHASING OF THE ELECTRONIC-TRANSITIONS OF DELOCALIZED MOLECULAR DIMER STATES** *JOURNAL OF CHEMICAL PHYSICS*
Lee, H. W., Fayer, M. D.
1986; 84 (10): 5463-5478
 - **DELOCALIZATION OF ELECTRONIC EXCITATIONS IN DISORDERED MOLECULAR-SYSTEMS** *CHEMICAL PHYSICS LETTERS*
Gulotty, R. J., Walsh, C. A., Patterson, F. G., Wilson, W. L., Fayer, M. D.
1986; 125 (5-6): 507-513
 - **PROBING GAS-PHASE DYNAMICS WITH PICOSECOND TRANSIENT GRATING SPECTROSCOPY** *CHEMICAL PHYSICS LETTERS*
Rose, T. S., Fayer, M. D.
1985; 117 (1): 12-17
 - **A LASER-INDUCED ULTRASONIC PROBE OF THE MECHANICAL-PROPERTIES OF ALIGNED LIPID MULTIBILAYERS** *BIOPHYSICAL JOURNAL*
EYRING, G., Fayer, M. D.
1985; 47 (1): 37-42
 - **SURFACE QUENCHING OF OPTICALLY GENERATED CARRIERS IN THIN-FILM HYDROGENATED AMORPHOUS-SILICON - PICOSECOND TRANSIENT-GRATING EXPERIMENTS** *PHYSICAL REVIEW B*
NEWELL, V. J., Rose, T. S., Fayer, M. D.
1985; 32 (12): 8035-8040
 - **TRANSIENT PROPERTIES OF TRIPLET BOTTLENECK HOLEBURNING IN AN OPTICALLY THICK SAMPLE** *CHEMICAL PHYSICS*
Deeg, F. W., Madison, L., Fayer, M. D.
1985; 94 (1-2): 265-271
 - **Electronic Excitation Transport in Disordered Infinite Volume Systems** *Int. Rev. Phys. Chem.*
Ediger, M. D., Fayer, M. D.
1985; 4: 207-235
 - **DETERMINATION OF THE GUEST RADIUS OF GYRATION IN POLYMER BLENDS - TIME-RESOLVED MEASUREMENTS OF EXCITATION TRANSPORT INDUCED FLUORESCENCE DEPOLARIZATION** *MACROMOLECULES*
Ediger, M. D., DOMINGUE, R. P., Peterson, K. A., Fayer, M. D.
1985; 18 (6): 1182-1190
 - **INHOMOGENEOUS BROADENING OF ELECTRONIC-TRANSITIONS OF CHROMOPHORES IN CRYSTALS AND GLASSES - ANALYSIS OF HOLE BURNING AND FLUORESCENCE LINE NARROWING EXPERIMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Lee, H. W., Walsh, C. A., Fayer, M. D.
1985; 82 (9): 3948-3958
 - **NONPHOTOCHEMICAL HOLE BURNING AND INTERSYSTEM CROSSING IN THE PENTACENE BENZOIC-ACID SYSTEM - DEUTERIUM EFFECTS** *JOURNAL OF LUMINESCENCE*
Walsh, C. A., Fayer, M. D.
1985; 34 (1-2): 37-45
 - **ELECTRON-TRANSFER BETWEEN MOLECULES RANDOMLY DISTRIBUTED IN A GLASS** *JOURNAL OF CHEMICAL PHYSICS*
DOMINGUE, R. P., Fayer, M. D.
1985; 83 (5): 2242-2251
 - **EXCITATION TRANSPORT AND DYNAMICS IN SOLID-STATE SYSTEMS** *JOURNAL OF LUMINESCENCE*
Fayer, M. D.
1984; 31-2 (DEC): 525-529

- **EXCITATION TRANSPORT AND TRAPPING IN A SYNTHETIC CHLOROPHYLLIDE SUBSTITUTED HEMOGLOBIN - ORIENTATION OF THE CHLOROPHYLL-S1 TRANSITION DIPOLE** *BIOCHEMISTRY*
Moog, R. S., Kuki, A., Fayer, M. D., Boxer, S. G.
1984; 23 (7): 1564-1571
- **HOPPING TRANSPORT ON A RANDOMLY SUBSTITUTED LATTICE FOR LONG-RANGE AND NEAREST NEIGHBOR INTERACTIONS** *JOURNAL OF CHEMICAL PHYSICS*
Loring, R. F., ANDERSEN, H. C., Fayer, M. D.
1984; 80 (11): 5731-5744
- **THEORY OF PHOTON-ECHOES FROM INTERACTING IMPURITIES IN CRYSTALS WITH INHOMOGENEOUSLY BROADENED ABSORPTION-SPECTRA** *JOURNAL OF CHEMICAL PHYSICS*
Loring, R. F., Anderson, H. C., Fayer, M. D.
1984; 81 (12): 5395-5404
- **A PICOSECOND HOLOGRAPHIC GRATING APPROACH TO MOLECULAR-DYNAMICS IN ORIENTED LIQUID-CRYSTAL FILMS** *JOURNAL OF CHEMICAL PHYSICS*
EYRING, G., Fayer, M. D.
1984; 81 (10): 4314-4321
- **OPTICAL DEPHASING OF MOLECULAR DIMERS IN MIXED-CRYSTALS - PICOSECOND PHOTON-ECHO EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Patterson, F. G., Wilson, W. L., Lee, H. W., Fayer, M. D.
1984; 110 (1): 7-13
- **PICOSECOND TRANSIENT GRATING MEASUREMENTS OF SINGLET EXCITON TRANSPORT IN ANTHRACENE SINGLE-CRYSTALS** *CHEMICAL PHYSICS LETTERS*
Rose, T. S., Righini, R., Fayer, M. D.
1984; 106 (1-2): 13-19
- **A COHERENT PHOTOACOUSTIC APPROACH TO EXCITED-STATE-EXCITED-STATE ABSORPTION-SPECTROSCOPY - APPLICATION TO THE INVESTIGATION OF A NEAR-RESONANT CONTRIBUTION TO ULTRASONIC DIFFRACTION** *JOURNAL OF PHYSICAL CHEMISTRY*
Miller, R. J., Pierre, M., Rose, T. S., Fayer, M. D.
1984; 88 (14): 3021-3025
- **HOPPING TRANSPORT ON A RANDOMLY SUBSTITUTED LATTICE IN THE PRESENCE OF DILUTE DEEP TRAPS** *CHEMICAL PHYSICS*
Loring, R. F., ANDERSEN, H. C., Fayer, M. D.
1984; 85 (1): 149-164
- **LASER-INDUCED PHENOMENA AT LIQUID-GLASS INTERFACES - PARTICLE DEPOSITION AND HOLOGRAPHIC BUBBLE GRATING FORMATION** *JOURNAL OF APPLIED PHYSICS*
EYRING, G., Fayer, M. D.
1984; 55 (11): 4072-4080
- **ELECTRONIC EXCITATION TRANSPORT IN DISORDERED FINITE VOLUME SYSTEMS** *JOURNAL OF PHYSICAL CHEMISTRY*
Ediger, M. D., Fayer, M. D.
1984; 88 (25): 6108-6116
- **INTERSYSTEM CROSSING FROM SINGLET-STATES OF MOLECULAR DIMERS AND MONOMERS IN MIXED MOLECULAR-CRYSTALS - PICOSECOND STIMULATED PHOTON-ECHO EXPERIMENTS** *CHEMICAL PHYSICS*
Patterson, F. G., Lee, H. W., Wilson, W. L., Fayer, M. D.
1984; 84 (1): 51-60
- **PICOSECOND STUDIES OF EXCITATION TRANSPORT IN A FINITE VOLUME - THE CLUSTERED TRANSPORT-SYSTEM OCTADECYL RHODAMINE-B IN TRITON X-100 MICELLES** *JOURNAL OF CHEMICAL PHYSICS*
Ediger, M. D., DOMINGUE, R. P., Fayer, M. D.
1984; 80 (3): 1246-1253
- **EXCITATION TRANSPORT ON SUBSTITUTIONALLY DISORDERED LATTICES** *PHYSICAL REVIEW LETTERS*
Loring, R. F., ANDERSEN, H. C., Fayer, M. D.
1983; 50 (17): 1324-1327

- **Exciton Coherence** *Spectroscopy and Excitation Dynamics of Condensed Molecular Systems*
Fayer, M. D.
edited by Agranovich, V. M., Hochstrasser, M. R.
North Holland.1983: 185–248
- **EXCITATION TRANSPORT ON SUBSTITUTIONALLY DISORDERED LATTICES**
Loring, R. F., ANDERSEN, H. C., Fayer, M. D.
AMER INST PHYSICS.1983: 1389–89
- **NEW APPROACH TO PROBING POLYMER AND POLYMER BLEND STRUCTURE USING ELECTRONIC EXCITATION TRANSPORT** *MACROMOLECULES*
Ediger, M. D., Fayer, M. D.
1983; 16 (12): 1839-1844
- **ELECTRONIC EXCITED-STATE TRANSPORT AMONG MOLECULES DISTRIBUTED RANDOMLY IN A FINITE VOLUME** *JOURNAL OF CHEMICAL PHYSICS*
Ediger, M. D., Fayer, M. D.
1983; 78 (5): 2518-2524
- **ELECTRONIC EXCITED-STATE TRANSPORT AND TRAPPING IN DISORDERED-SYSTEMS - PICOSECOND FLUORESCENCE MIXING, TRANSIENT GRATING, AND PROBE PULSE EXPERIMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Miller, R. J., Pierre, M., Fayer, M. D.
1983; 78 (8): 5138-5146
- **HOLOGRAPHIC GENERATION OF BUBBLE GRATINGS AT LIQUID-GLASS INTERFACES AND THE DYNAMICS OF BUBBLES ON SURFACES** *CHEMICAL PHYSICS LETTERS*
EYRING, G., Fayer, M. D.
1983; 98 (5): 428-432
- **DYNAMICS OF MOLECULES IN CONDENSED PHASES - PICOSECOND HOLOGRAPHIC GRATING EXPERIMENTS** *ANNUAL REVIEW OF PHYSICAL CHEMISTRY*
Fayer, M. D.
1982; 33: 63-87
- **VISCOSITY DEPENDENCE OF THE ROTATIONAL REORIENTATION OF RHODAMINE-B IN MONO-ALCOHOL AND POLY-ALCOHOL - PICOSECOND TRANSIENT GRATING EXPERIMENTS** *JOURNAL OF PHYSICAL CHEMISTRY*
Moog, R. S., Ediger, M. D., Boxer, S. G., Fayer, M. D.
1982; 86 (24): 4694-4700
- **Nonphotochemical Hole Burning and Antihole Production in the Mixed Molecular Crystal Pentacene in Benzoic Acid** *J. Chem. Phys.*
Olson, R. W., Patterson, F. G., Lee, H. W., Fayer, M. D., Shelby, R. M., Burum, D. P., MacFarlane, R. M.
1982; 77: 2283-2289
- **Picosecond Holographic Grating Experiments on Molecular Condensed Phases** *Picosecond Phenomena III.*
Fayer, M. D.
1982: 82-86
- **LASER-INDUCED ULTRASONICS - A DYNAMIC HOLOGRAPHIC APPROACH TO THE MEASUREMENT OF WEAK ABSORPTIONS, OPTOELASTIC CONSTANTS AND ACOUSTIC ATTENUATION** *CHEMICAL PHYSICS*
Miller, R. J., Casalegno, R., Nelson, K. A., Fayer, M. D.
1982; 72 (3): 371-379
- **Viscosity Dependence of the Rotational Reorientation of Rhodamine B in Mono- and Polyalcohol. Picosecond Transient Grating Experiments** *J. Phys. Chem*
Moog, R. S., Ediger, M. D., Boxer, S. G., Fayer, M. D.
1982; 86: 4694-4700
- **ON THE REFRACTIVE-INDEX CORRECTION IN LUMINESCENCE SPECTROSCOPY - COMMENT** *CHEMICAL PHYSICS LETTERS*
Ediger, M. D., Moog, R. S., Boxer, S. G., Fayer, M. D.
1982; 88 (1): 123-127

- **Electronic Excited State Transport and Trapping in One and Two Dimensional Disordered Systems** *Chem. Phys.*
Loring, R. F., Fayer, M. D.
1982; 70: 139-147
- **OPTICAL-GENERATION OF TUNABLE ULTRASONIC-WAVES** *JOURNAL OF APPLIED PHYSICS*
Nelson, K. A., Miller, R. J., LUTZ, D. R., Fayer, M. D.
1982; 53 (2): 1144-1149
- **ELECTRONIC EXCITED-STATE TRANSPORT AND TRAPPING IN ONE-DIMENSIONAL AND TWO-DIMENSIONAL DISORDERED-SYSTEMS** *CHEMICAL PHYSICS*
Loring, R. F., Fayer, M. D.
1982; 70 (1-2): 139-147
- **TEMPERATURE-DEPENDENT DEPHASING OF DELOCALIZED DIMER STATES OF PENTACENE IN PARA-TERPHENYL - PICOSECOND PHOTON-ECHO EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Lee, H. W., Patterson, F. G., Olson, R. W., Wiersma, D. A., Fayer, M. D.
1982; 90 (3): 172-177
- **LASER-INDUCED EXCITED-STATE AND ULTRASONIC WAVE GRATINGS - AMPLITUDE AND PHASE GRATING CONTRIBUTIONS TO DIFFRACTION** *JOURNAL OF CHEMICAL PHYSICS*
Nelson, K. A., Casalegno, R., Miller, R. J., Fayer, M. D.
1982; 77 (3): 1144-1152
- **ELECTRONIC EXCITED-STATE TRANSPORT AND TRAPPING IN SOLUTION** *JOURNAL OF CHEMICAL PHYSICS*
Loring, R. F., ANDERSEN, H. C., Fayer, M. D.
1982; 76 (4): 2015-2027
- **NON-PHOTOCHEMICAL HOLE BURNING AND ANTI-HOLE PRODUCTION IN THE MIXED MOLECULAR-CRYSTAL PENTACENE IN BENZOIC-ACID** *JOURNAL OF CHEMICAL PHYSICS*
Olson, R. W., Lee, H. W., Patterson, F. G., Fayer, M. D., Shelby, R. M., BURUM, D. P., Macfarlane, R. M.
1982; 77 (5): 2283-2289
- **PICOSECOND TRANSIENT GRATING GENERATION OF TUNABLE ULTRASONIC-WAVES** *PROCEEDINGS OF THE SOCIETY OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS*
Nelson, K. A., Miller, R. J., LUTZ, D. R., Fayer, M. D.
1982; 322: 68-74
- **OPTICAL-DENSITY EFFECTS IN PHOTON-ECHO EXPERIMENTS** *JOURNAL OF CHEMICAL PHYSICS*
Olson, R. W., Lee, H. W., Patterson, F. G., Fayer, M. D.
1982; 76 (1): 31-39
- **CORRELATION-FUNCTION ANALYSIS OF COHERENT OPTICAL TRANSIENTS AND FLUORESCENCE FROM A QUASI-2-LEVEL SYSTEM** *PHYSICAL REVIEW A*
Skinner, J. L., ANDERSEN, H. C., Fayer, M. D.
1981; 24 (4): 1994-2008
- **LUMINESCENT SOLAR CONCENTRATORS AND THE REABSORPTION PROBLEM** *APPLIED OPTICS*
Olson, R. W., Loring, R. F., Fayer, M. D.
1981; 20 (17): 2934-2940
- **Correlation Function Analysis of Coherent Optical Transients and Fluorescence from a Quasi Two Level System** *Phys. Rev. A*
Skinner, J. L., Andersen, H. C., Fayer, M. D.
1981; 24: 1994-2008
- **DELOCALIZED ELECTRONIC EXCITATIONS OF PENTACENE DIMERS IN A PARA-TERPHENYL HOST - PICOSECOND PHOTON-ECHO EXPERIMENTS** *CHEMICAL PHYSICS LETTERS*
Olson, R. W., Patterson, F. G., Lee, H. W., Fayer, M. D.
1981; 79 (3): 403-407
- **LASER-INDUCED PHONON SPECTROSCOPY - OPTICAL-GENERATION OF ULTRASONIC-WAVES AND INVESTIGATION OF ELECTRONIC EXCITED-STATE INTERACTIONS IN SOLIDS** *PHYSICAL REVIEW B*

- Nelson, K. A., LUTZ, D. R., Fayer, M. D., Madison, L.
1981; 24 (6): 3261-3275
- **NON-PHOTOCHEMICAL HOLE BURNING IN THE MIXED MOLECULAR-CRYSTAL PENTACENE IN BENZOIC-ACID** *CHEMICAL PHYSICS LETTERS*
Patterson, F. G., Lee, H. W., Olson, R. W., Fayer, M. D.
1981; 84 (1): 59-63
 - **ELECTRONIC EXCITED-STATE TRANSPORT IN RANDOM-SYSTEMS - TIME-RESOLVED FLUORESCENCE DEPOLARIZATION MEASUREMENTS** *JOURNAL OF PHYSICAL CHEMISTRY*
Gochanour, C. R., Fayer, M. D.
1981; 85 (14): 1989-1994
 - **ELECTRONIC EXCITED-STATE ENERGY-TRANSFER, TRAPPING BY DIMERS AND FLUORESCENCE QUENCHING IN CONCENTRATED DYE SOLUTIONS - PICOSECOND TRANSIENT GRATING EXPERIMENTS** *CHEMICAL PHYSICS*
LUTZ, D. R., Nelson, K. A., Gochanour, C. R., Fayer, M. D.
1981; 58 (3): 325-334
 - **THEORY OF PHOTON-ECHOES FROM A PAIR OF COUPLED 2 LEVEL SYSTEMS - IMPURITY DIMERS AND ENERGY-TRANSFER IN MOLECULAR-CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
Skinner, J. L., ANDERSEN, H. C., Fayer, M. D.
1981; 75 (7): 3195-3202
 - **EXCITON SCATTERING AND THE DEPHASING OF ELECTRON-SPIN-RESONANCE AND OPTICAL-ABSORPTION LINES - THE 1,2,4,5-TETRACHLOROBENZENE TRIPLET EXCITON PROBLEM** *JOURNAL OF CHEMICAL PHYSICS*
WIETING, R. D., Fayer, M. D.
1980; 73 (2): 744-748
 - **SITE-DEPENDENT VIBRONIC LINE WIDTHS AND RELAXATION IN THE MIXED MOLECULAR-CRYSTAL PENTACENE IN PARATERPHENYL** *JOURNAL OF PHYSICAL CHEMISTRY*
Olson, R. W., Fayer, M. D.
1980; 84 (16): 2001-2004
 - **Exciton Scattering and the Dephasing of ESR and Optical Absorption Lines: The 1,2,4,5-tetrachlorobenzene Triplet Exciton Problem** *Chem. Phys.*
Wieting, R. D., Fayer, M. D.
1980; 73: 744-748
 - **LASER-INDUCED PHONONS - A PROBE OF INTERMOLECULAR INTERACTIONS IN MOLECULAR-SOLIDS** *JOURNAL OF CHEMICAL PHYSICS*
Nelson, K. A., Fayer, M. D.
1980; 72 (9): 5202-5218
 - **INTERMOLECULAR INTERACTION DYNAMICS AND OPTICAL DEPHASING - PICOSECOND PHOTON-ECHO MEASUREMENTS IN MIXED MOLECULAR-CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
Cooper, D. E., Olson, R. W., Fayer, M. D.
1980; 72 (4): 2332-2339
 - **EXCITED-STATE DYNAMICS IN PURE MOLECULAR-CRYSTALS - PERYLENE AND THE EXCIMER PROBLEM** *CHEMICAL PHYSICS LETTERS*
Nelson, K. A., Dlott, D. D., Fayer, M. D.
1979; 64 (1): 88-93
 - **ELECTRONIC EXCITED-STATE TRANSPORT IN SOLUTION** *JOURNAL OF CHEMICAL PHYSICS*
Gochanour, C. R., ANDERSEN, H. C., Fayer, M. D.
1979; 70 (9): 4254-4271
 - **PICOSECOND TIME SCALE OPTICAL COHERENCE EXPERIMENTS IN MIXED MOLECULAR-CRYSTALS - PENTACENE IN NAPHTHALENE** *CHEMICAL PHYSICS LETTERS*
Cooper, D. E., Olson, R. W., WIETING, R. D., Fayer, M. D.
1979; 67 (1): 41-47

- **EFFECTS OF IMPURITY SCATTERING AND TRANSPORT TOPOLOGY ON TRAPPING IN QUASI-ONE-DIMENSIONAL SYSTEMS - APPLICATION TO EXCITONS IN MOLECULAR-CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
WIETING, R. D., Fayer, M. D., Dlott, D. D.
1978; 69 (5): 1996-2010
- **Dynamics of Energy Transport in Molecular Crystals: The Picosecond Transient- Grating Method** *Phys. Rev. Lett.*
Salcedo, J., Siegman, A. E., Dlott, D. D., Fayer, M. D.
1978; 41: 131-134
- **SPIN-LATTICE RELAXATION IN TRIPLET-STATES OF ISOLATED MOLECULES AND PURE CRYSTALS IN ZERO-FIELD** *JOURNAL OF CHEMICAL PHYSICS*
LUTZ, D. R., Nelson, K. A., Olson, R. W., Fayer, M. D.
1978; 69 (9): 4319-4321
- **Energy Transport in Molecular Solids: Application of the Picosecond Transient Grating Technique** *Picosecond Phenomena*
Dlott, D. D., Fayer, M. D., Salcedo, J., Siegman, A. E., Shapiro, S. L.
edited by Shank, C. V., Ippen, E. P.
Springer-Verlag, Berlin Heidelberg New York. 1978: 240
- **Effects of Impurity Scattering and Transport Topology on Exciton Migration and Trapping: An Experimental Study of Quasi-One-Dimensional Molecular Crystals** *J. Chem. Phys.*
Dlott, D. D., Fayer, M. D., Wieting, R. D.,
1978; 69: 2752-2762
- **The Effects of Impurity Scattering and Transport Topology on Trapping in Quasi-One-Dimensional Transport Systems: Application to Excitons in Molecular Crystals** *J. Chem. Phys.*
Wieting, R. D., Fayer, M. D., Dlott, D. D.
1978; 69: 1996-2000
- **EFFECTS OF IMPURITY SCATTERING AND TRANSPORT TOPOLOGY ON EXCITON MIGRATION AND TRAPPING - EXPERIMENTAL-STUDY OF QUASI-ONE-DIMENSIONAL MOLECULAR-CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
Dlott, D. D., Fayer, M. D., WIETING, R. D.
1978; 69 (6): 2752-2762
- **SPIN-ORBIT-COUPLING IN EXCITON BANDS OF MOLECULAR-CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
Cooper, D. E., Fayer, M. D.
1978; 68 (1): 229-235
- **DYNAMICS OF ENERGY-TRANSPORT IN MOLECULAR-CRYSTALS - PICOSECOND TRANSIENT-GRATING METHOD** *PHYSICAL REVIEW LETTERS*
SALCEDO, J. R., Siegman, A. E., Dlott, D. D., Fayer, M. D.
1978; 41 (2): 131-134
- **TRIPLET EXCITON SPECTRAL-LINE SHAPES IN MOLECULAR-CRYSTALS - 1,2,4,5-TETRACHLOROBENZENE** *CHEMICAL PHYSICS LETTERS*
BURLAND, D. M., Cooper, D. E., Fayer, M. D., Gochanour, C. R.
1977; 52 (2): 279-284
- **COHERENT ONE-DIMENSIONAL EXCITON TRANSPORT AND IMPURITY SCATTERING** *JOURNAL OF CHEMICAL PHYSICS*
Dlott, D. D., Fayer, M. D., WIETING, R. D.
1977; 67 (8): 3808-3817
- **EXPERIMENTAL-DETERMINATION OF TRIPLET EXCITON INTERMOLECULAR INTERACTION MATRIX ELEMENT AND EXCITON-PHONON SCATTERING RATE IN MOLECULAR-CRYSTALS** *CHEMICAL PHYSICS LETTERS*
Dlott, D. D., Fayer, M. D.
1976; 41 (2): 305-310
- **Coherence in Multilevel Systems. II. Description of a Multilevel System as Two Levels in Contact with a Population Reservoir** *Phys. Rev. A*
Breinland, W. G., Fayer, M. D., Harris, C. B.
1976; 13: 383

- **Experimental Determination of the Triplet Exciton Intermolecular Interaction Matrix Element and the Exciton-Phonon Scattering Rate in Molecular Crystals** *Chem. Phys. Lett.*
Dlott, D. D., Fayer, M. D.
1976; 41: 305-310
- **COHERENCE IN MULTILEVEL SYSTEMS .2. DESCRIPTION OF A MULTILEVEL SYSTEM AS 2 LEVELS IN CONTACT WITH A POPULATION RESERVOIR** *PHYSICAL REVIEW A*
Breiland, W. G., Fayer, M. D., Harris, C. B.
1976; 13 (1): 383-395
- **On the Temperature Dependence of Excited Triplet State Spin Sublevel Populations of Shallow Traps in Molecular Crystals** *J. Chem. Phys.*
Fayer, M. D., Gochanour, C. R.
1976; 65: 2472-2473
- **Direct Measurement of the Quantum Yield for the Creation of Mobile Excitons from Localized States Using Optically Detected Electron Spin Coherence** *Chem. Phys. Lett.*
Banner, H. C., Brock, J. C., Fayer, M. D., Harris, C. B.
1975; 33: 471-476
- **DIRECT MEASUREMENT OF QUANTUM YIELD FOR CREATION OF MOBILE EXCITONS FROM LOCALIZED STATES USING OPTICALLY DETECTED ELECTRON-SPIN COHERENCE** *CHEMICAL PHYSICS LETTERS*
Brenner, H. C., Brock, J. C., Fayer, M. D., Harris, C. B.
1975; 33 (3): 471-476
- **Coherent Energy Migration in Solids I. Band-Trap Equilibria at Boltzmann and Non-Boltzmann Temperatures** *Phys. Rev. B*
Fayer, M. D., Harris, C. B.
1974; 9: 748-796
- **COHERENT ENERGY MIGRATION IN SOLIDS .1. BAND-TRAP EQUILIBRIA AT BOLTZMANN AND NONBOLTZMANN TEMPERATURES** *PHYSICAL REVIEW B*
Fayer, M. D., Harris, C. B.
1974; 9 (2): 748-769
- **DECAY OF LOCALIZED STATES INTO DELOCALIZED BAND STATES - THEORY AND PRELIMINARY EXPERIMENTAL INVESTIGATIONS USING OPTICALLY DETECTED ELECTRON-SPIN COHERENCE** *CHEMICAL PHYSICS LETTERS*
Fayer, M. D., Harris, C. B.
1974; 25 (2): 149-157
- **The Decay of Localized States Into Delocalized Band States. Theory and Preliminary Experimental Investigations Using Optically Detected Electron Spin Coherence** *Chem. Phys. Lett.*
Fayer, M. D., Harris, C. B.
1974; 25: 149-157
- **COHERENT ENERGY MIGRATION IN SOLIDS .2. SPIN-RESONANCE ABSORPTION IN COHERENT-WAVE-PACKET STATES AND EFFECTS OF PHONON-EXCITON SCATTERING** *PHYSICAL REVIEW B*
Harris, C. B., Fayer, M. D.
1974; 10 (5): 1784-1800
- **Coherent Energy Migration in Solids II. Spin Resonance Absorption in Coherent Wave Packet States and the Effects of Phonon-Exciton Scattering** *Phys. Rev. B*
Harris, C. B., Fayer, M. D.
1974; 9 (2): 748-769
- **OPTICALLY DETECTED NUCLEAR QUADRUPOLE RESONANCE AND TRANSFERRED HYPERFINE COUPLING VIA GUEST-HOST INTERACTIONS IN MOLECULAR CRYSTALS** *JOURNAL OF CHEMICAL PHYSICS*
Fayer, M. D., Harris, C. B., Yuen, D. A.
1970; 53 (12): 4719-?
- **Transition Metal Nuclear Quadrupole Resonance IV. Manganese-55 Nuclear Quadrupole Resonance in #-Pyrrolylmanganese Tricarbonyl and #-Cyclopentadienylmanganese Tricarbonyl and #-Pyrrolyl-Metal Bonds** *Inorganic Chemistry*
Fayer, M. D., Harris, C. B.

1969; 8: 2792-2796

- **TRANSITION METAL NUCLEAR QUADRUPOLE RESONANCE .4. MANGANESE-55 NUCLEAR QUADRUPOLE RESONANCE IN PI-PYRROLENYLMANGANESE TRICARBONYL AND PI-CYCLOPENTADIENYLMANGANESE TRICARBONYL AND PI-PYRROLENYL-METAL BONDS** *INORGANIC CHEMISTRY*

Fayer, M. D., Harris, C. B.

1969; 8 (12): 2792-?

PRESENTATIONS

- 2010 NPR Tech Nation Podcast - Absolutely Small (2010)