



David Hoffman

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Bio

EDUCATION AND CERTIFICATIONS

- Ph.D., Stanford University , Chemistry (2021)
- M.S., University of Pennsylvania , Chemistry (2014)
- B.A., University of Pennsylvania , Biochemistry (2014)

Publications

PUBLICATIONS

- **Revealing Parallel Inter- and Intra-ligand Charge Transfer Dynamics in [Ru(L)₂(dppz)]²⁺ Molecular Lightswitch with N K-edge X-ray Absorption Spectroscopy.** *Angewandte Chemie (International ed. in English)*
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- **Attosecond-pump attosecond-probe x-ray spectroscopy of liquid water.** *Science (New York, N.Y.)*
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- **Liquid Heterostructures: Generation of Liquid-Liquid Interfaces in Free-Flowing Liquid Sheets.** *Langmuir : the ACS journal of surfaces and colloids*
Hoffman, D. J., Bechtel, H. A., Huyke, D. A., Santiago, J. G., DePonte, D. P., Koralek, J. D.
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- **Microfluidic liquid sheets as large-area targets for high repetition XFELs.** *Frontiers in molecular biosciences*
Hoffman, D. J., Van Driel, T. B., Kroll, T., Crissman, C. J., Ryland, E. S., Nelson, K. J., Cordones, A. A., Koralek, J. D., DePonte, D. P.
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- **Long Vibrational Lifetime R-Selenocyanate Probes for Ultrafast Infrared Spectroscopy: Properties and Synthesis.** *The journal of physical chemistry. B*
Fica-Contreras, S. M., Daniels, R., Yassin, O., Hoffman, D. J., Pan, J., Sotzing, G., Fayer, M. D.
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- **Distinguishing steric and electrostatic molecular probe orientational ordering via their effects on reorientation-induced spectral diffusion.** *The Journal of chemical physics*
Hoffman, D. J., Fica-Contreras, S. M., Pan, J., Fayer, M. D.
2021; 154 (24): 244104
- **Free Volume Element Sizes and Dynamics in Polystyrene and Poly(methyl methacrylate) Measured with Ultrafast Infrared Spectroscopy.** *Journal of the American Chemical Society*
Fica-Contreras, S. M., Hoffman, D. J., Pan, J., Liang, C., Fayer, M. D.

2021

- **Pulse-shaped chopping: Eliminating and characterizing heat effects in ultrafast infrared spectroscopy.** *The Journal of chemical physics*
Hoffman, D. J., Fica-Contreras, S. M., Pan, J., Fayer, M. D.
2020; 153 (20): 204201
- **Amorphous polymer dynamics and free volume element size distributions from ultrafast IR spectroscopy.** *Proceedings of the National Academy of Sciences of the United States of America*
Hoffman, D. J., Fica-Contreras, S. M., Fayer, M. D.
2020
- **CLS Next Gen: Accurate Frequency-Frequency Correlation Functions from Center Line Slope Analysis of 2D Correlation Spectra Using Artificial Neural Networks.** *The journal of physical chemistry. A*
Hoffman, D. J., Fayer, M. D.
2020
- **Reorientation-induced Stokes shifts caused by directional interactions in electronic spectroscopy: Fast dynamics of poly(methyl methacrylate).** *The Journal of chemical physics*
Thomaz, J. E., Kramer, P. L., Fica-Contreras, S. M., Hoffman, D. J., Fayer, M. D.
2019; 150 (19): 194201
- **Fast dynamics of a hydrogen-bonding glass forming liquid: Chemical exchange-induced spectral diffusion in 2D IR spectroscopy.** *The Journal of chemical physics*
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- **Fast dynamics of a hydrogen-bonding glass forming liquid: Chemical exchange-induced spectral diffusion in 2D IR spectroscopy** *JOURNAL OF CHEMICAL PHYSICS*
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2019; 150 (12)
- **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
- **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.
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- **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.
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- **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.
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