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Publications

PUBLICATIONS

- **Nonadiabatic dynamics of photoexcited thiopyridone isomers: An interplay between El-Sayed's conditions and energy gap law.** *The Journal of chemical physics*
Das, S. K., Garratt, D., Gaffney, K., Odelius, M.
2025; 163 (23)
- **Surface structure of water from soft X-ray second harmonic generation.** *Nature communications*
Hoffman, D. J., Devlin, S. W., Garratt, D., Jamnuch, S., Spies, J. A., Nebgen, B. R., Schacher, D., Do, A., Bernal, F., Riffe, E. J., Kunnus, K., Hampton, C. Y., Duris, et al
2025; 16 (1): 10522
- **Imaging Valence Electron Rearrangement in a Chemical Reaction Using Hard X-Ray Scattering.** *Physical review letters*
Gabalski, I., Green, A., Lenzen, P., Allum, F., Bain, M., Bhattacharyya, S., Britton, M. A., Champenois, E. G., Cheng, X., Cryan, J. P., Driver, T., Forbes, R., Garratt, et al
2025; 135 (8): 083001
- **Imaging Valence Electron Rearrangement in a Chemical Reaction Using Hard X-Ray Scattering** *PHYSICAL REVIEW LETTERS*
Gabalski, I., Green, A., Lenzen, P., Allum, F., Bain, M., Bhattacharyya, S., Britton, M. A., Champenois, E. G., Cheng, X., Cryan, J. P., Driver, T., Forbes, R., Garratt, et al
2025; 135 (8)
- **Influence of substitution pattern on the dynamics of internal conversion and intersystem crossing in thiopyridone isomers.** *Physical chemistry chemical physics : PCCP*
Garratt, D., Das, S. K., Nelson, K. J., Harich, J., Freibert, A., Bacellar, C., Cirelli, C., Johnson, P. J., Castillo, R. G., Zoric, M. R., Wang, R. P., Lim, H., Cordones, et al
2025
- **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)*
Ryland, E. S., Yang, X., Garratt, D., Henke, W. C., Kahraman, A., Taub, M., Sachs, M., Biasin, E., Hampton, C. Y., Hoffman, D. J., Coslovich, G., Kunnus, K., Dakovski, et al
2025: e202509496
- **Spectrotemporal Shaping of Attosecond X-Ray Pulses with a Fresh-Slice Free-Electron Laser.** *Physical review letters*
Robles, R. R., Larsen, K. A., Cesar, D., Driver, T., Duris, J., Franz, P., Garratt, D., Guo, V., Just, G., Lemons, R., Lin, M. F., Obaid, R., Sudar, et al
2025; 134 (11): 115001
- **Multiconfigurational Electronic Structure of Nickel Cross-Coupling Catalysts Revealed by X-ray Absorption Spectroscopy.** *The journal of physical chemistry letters*
Nelson, K. J., Kazmierczak, N. P., Cagan, D. A., Follmer, A. H., Scott, T. R., Raj, S. L., Garratt, D., Powers-Riggs, N., Gaffney, K. J., Hadt, R. G., Cordones, A. A.
2024: 87-94
- **Attosecond impulsive stimulated X-ray Raman scattering in liquid water.** *Science advances*
Alexander, O., Egun, F., Rego, L., Gutierrez, A. M., Garratt, D., Cardenes, G. A., Nogueira, J. J., Lee, J. P., Zhao, K., Wang, R. P., Ayuso, D., Barnard, J. C., Beauvarlet, et al
2024; 10 (39): eadp0841

- **Attosecond delays in X-ray molecular ionization.** *Nature*
Driver, T., Mountney, M., Wang, J., Ortmann, L., Al-Haddad, A., Berrah, N., Bostedt, C., Champenois, E. G., DiMauro, L. F., Duris, J., Garratt, D., Glowia, J. M., Guo, et al
2024; 632 (8026): 762-767
- **Attosecond-pump attosecond-probe x-ray spectroscopy of liquid water.** *Science (New York, N.Y.)*
Li, S., Lu, L., Bhattacharyya, S., Pearce, C., Li, K., Nienhuis, E. T., Doumy, G., Schaller, R. D., Moeller, S., Lin, M. F., Dakovski, G., Hoffman, D. J., Garratt, et al
2024: eadn6059
- **Toward ultrafast soft x-ray spectroscopy of organic photovoltaic devices** *STRUCTURAL DYNAMICS-US*
Garratt, D., Matthews, M., Marangos, J.
2024; 11 (1): 010901
- **Observation of recollision-based high-harmonic generation in liquid isopropanol and the role of electron scattering** *PHYSICAL REVIEW RESEARCH*
Alexander, O., Barnard, J. C. T., Larsen, E. W., Avni, T., Jarosch, S., Gregory, A., Parker, S., Galinis, G., Tofful, A., Garratt, D., Matthews, M. R., Marangos, J. P.
2023; 5 (4)
- **Optical control of ultrafast structural dynamics in a fluorescent protein.** *Nature chemistry*
Hutchison, C. D., Baxter, J. M., Fitzpatrick, A., Dorlhiac, G., Fadini, A., Perrett, S., Maghlaoui, K., Lefevre, S. B., Cordon-Preciado, V., Ferreira, J. L., Chukhutsina, V. U., Garratt, D., Barnard, et al
2023
- **Delivery of stable ultra-thin liquid sheets in vacuum for biochemical spectroscopy** *FRONTIERS IN MOLECULAR BIOSCIENCES*
Barnard, J. C. T., Lee, J. P., Alexander, O., Jarosch, S., Garratt, D., Picciuto, R., Kowalczyk, K., Ferchaud, C., Gregory, A., Matthews, M., Marangos, J. P.
2022; 9: 1044610
- **Direct observation of ultrafast exciton localization in an organic semiconductor with soft X-ray transient absorption spectroscopy** *NATURE COMMUNICATIONS*
Garratt, D., Misiekis, L., Wood, D., Larsen, E. W., Matthews, M., Alexander, O., Ye, P., Jarosch, S., Ferchaud, C., Strueber, C., Johnson, A. S., Bakulin, A. A., Penfold, et al
2022; 13 (1): 3414
- **Attosecond coherent electron motion in Auger-Meitner decay.** *Science (New York, N.Y.)*
Li, S., Driver, T., Rosenberger, P., Champenois, E. G., Duris, J., Al-Haddad, A., Averbukh, V., Barnard, J. C., Berrah, N., Bostedt, C., Bucksbaum, P. H., Coffee, R. N., DiMauro, et al
1800: eabj2096
- **Time-resolved pump-probe spectroscopy with spectral domain ghost imaging.** *Faraday discussions*
Li, S., Driver, T., Alexander, O., Cooper, B., Garratt, D., Marinelli, A., Cryan, J. P., Marangos, J. P.
2021
- **Inner Valence Hole Migration in Isopropanol**
Alexander, O., Barillot, T., Cooper, B., Driver, T., Garratt, D., Li, S., Marinelli, A., Cryan, J. P., Marangos, J. P., LR25 Collaboration, IEEE
IEEE.2021
- **Electronic Population Transfer via Impulsive Stimulated X-Ray Raman Scattering with Attosecond Soft-X-Ray Pulses.** *Physical review letters*
O'Neal, J. T., Champenois, E. G., Oberli, S., Obaid, R., Al-Haddad, A., Barnard, J., Berrah, N., Coffee, R., Duris, J., Galinis, G., Garratt, D., Glowia, J. M., Haxton, et al
2020; 125 (7): 073203
- **Electronic Population Transfer via Impulsive Stimulated X-Ray Raman Scattering with Attosecond Soft-X-Ray Pulses** *PHYSICAL REVIEW LETTERS*
O'Neal, J. T., Champenois, E. G., Oberli, S., Obaid, R., Al-Haddad, A., Barnard, J., Berrah, N., Coffee, R., Duris, J., Galinis, G., Garratt, D., Glowia, J. M., Haxton, et al
2020; 125 (7)
- **Attosecond transient absorption spooktroscopy: a ghost imaging approach to ultrafast absorption spectroscopy.** *Physical chemistry chemical physics : PCCP*

Driver, T., Li, S., Champenois, E. G., Duris, J., Ratner, D., Lane, T. J., Rosenberger, P., Al-Haddad, A., Averbukh, V., Barnard, T., Berrah, N., Bostedt, C., Bucksbaum, et al
2019