

## Ruaridh Forbes

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### Publications

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#### PUBLICATIONS

- **Time-Resolved X-ray Photoelectron Spectroscopy: Ultrafast Dynamics in CS<sub>2</sub> Probed at the S 2p Edge.** *The journal of physical chemistry letters*  
Gabalski, I., Allum, F., Seidu, I., Britton, M., Brenner, G., Bromberger, H., Brouard, M., Bucksbaum, P. H., Burt, M., Cryan, J. P., Driver, T., Ekanayake, N., Erk, et al  
2023; 7126-7133
- **Rehybridization dynamics into the pericyclic minimum of an electrocyclic reaction imaged in real-time.** *Nature communications*  
Liu, Y., Sanchez, D. M., Ware, M. R., Champenois, E. G., Yang, J., Nunes, J. P., Attar, A., Centurion, M., Cryan, J. P., Forbes, R., Hegazy, K., Hoffmann, M. C., Ji, et al  
2023; 14 (1): 2795
- **Filming enhanced ionization in an ultrafast triatomic slingshot.** *Communications chemistry*  
Howard, A. J., Britton, M., Streeter, Z. L., Cheng, C., Forbes, R., Reynolds, J. L., Allum, F., McCracken, G. A., Gabalski, I., Lucchese, R. R., McCurdy, C. W., Weinacht, T., Bucksbaum, et al  
2023; 6 (1): 81
- **Single- and multi-photon-induced ultraviolet excitation and photodissociation of CH<sub>3</sub>I probed by coincident ion momentum imaging** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*  
Ziaee, F., Borne, K., Forbes, R., Raju, P., Malakar, Y., Kaderiya, B., Severt, T., Ben-Itzhak, I., Rudenko, A., Rolles, D.  
2023; 25 (14): 9999-10010
- **Multiparticle Cumulant Mapping for Coulomb Explosion Imaging.** *Physical review letters*  
Cheng, C., Frasiniski, L. J., Mo#ol, G., Allum, F., Howard, A. J., Rolles, D., Bucksbaum, P. H., Brouard, M., Forbes, R., Weinacht, T.  
2023; 130 (9): 093001
- **Photon energy-resolved velocity map imaging from spectral domain ghost imaging** *NEW JOURNAL OF PHYSICS*  
Wang, J., Driver, T., Allum, F., Papadopoulou, C. C., Passow, C., Brenner, G., Li, S., Duesterer, S., Tul Noor, A., Kumar, S., Bucksbaum, P. H., Erk, B., Forbes, et al  
2023; 25 (3)
- **Transient vibration and product formation of photoexcited CS<sub>2</sub> measured by time-resolved x-ray scattering.** *The Journal of chemical physics*  
Gabalski, I., Sere, M., Acheson, K., Allum, F., Boutet, S., Dixit, G., Forbes, R., Glowonia, J. M., Goff, N., Hegazy, K., Howard, A. J., Liang, M., Minitti, et al  
2022; 157 (16): 164305
- **Probing two-path electron quantum interference in strong-field ionization with time-correlation filtering** *PHYSICAL REVIEW A*  
Werby, N., Maxwell, A. S., Forbes, R., Faria, C., Bucksbaum, P. H.  
2022; 106 (3)
- **Disentangling sequential and concerted fragmentations of molecular polycations with covariant native frame analysis.** *Physical chemistry chemical physics : PCCP*  
McManus, J. W., Walmsley, T., Nagaya, K., Harries, J. R., Kumagai, Y., Iwayama, H., Ashfold, M. N., Britton, M., Bucksbaum, P. H., Downes-Ward, B., Driver, T., Heathcote, D., Hockett, et al  
2022
- **Multichannel photodissociation dynamics in CS<sub>2</sub> studied by ultrafast electron diffraction.** *Physical chemistry chemical physics : PCCP*  
Rasmus, W. O., Acheson, K., Bucksbaum, P., Centurion, M., Champenois, E., Gabalski, I., Hoffman, M. C., Howard, A., Lin, M., Liu, Y., Nunes, P., Saha, S., Shen, et al

2022

- **Efficient generation of the 7th harmonic of Ti:sapphire (114.6 nm) vacuum ultraviolet pulses with 60 fs duration by non-collinear four-wave mixing in argon** *OPTICS LETTERS*  
Forbes, R., Hockett, P., Lausten, R.  
2022; 47 (10): 2410-2413
- **Auger electron angular distributions following excitation or ionization from the Xe 3d and F 1s levels in xenon difluoride** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*  
Forbes, R., Hockett, P., Powis, I., Bozek, J. D., Pratt, S. T., Holland, D. P.  
2022; 24 (3): 1367-1379
- **Multi-Particle Three-Dimensional Covariance Imaging: "Coincidence" Insights into the Many-Body Fragmentation of Strong-Field Ionized D2O.** *The journal of physical chemistry letters*  
Allum, F., Cheng, C., Howard, A. J., Bucksbaum, P. H., Brouard, M., Weinacht, T., Forbes, R.  
2021: 8302-8308
- **Strong-field ionization of water. II. Electronic and nuclear dynamics en route to double ionization** *PHYSICAL REVIEW A*  
Cheng, C., Streeter, Z. L., Howard, A. J., Spanner, M., Lucchese, R. R., McCurdy, C., Weinacht, T., Bucksbaum, P. H., Forbes, R.  
2021; 104 (2)
- **Dissecting subcycle interference in photoelectron holography** *PHYSICAL REVIEW A*  
Werby, N., Maxwell, A. S., Forbes, R., Bucksbaum, P. H., Faria, C.  
2021; 104 (1)
- **Unmasking the cis-Stilbene Phantom State via Vacuum Ultraviolet Time-Resolved Photoelectron Spectroscopy and Ab Initio Multiple Spawning.** *The journal of physical chemistry letters*  
Williams, M., Forbes, R., Weir, H., Veyrinas, K., MacDonell, R. J., Boguslavskiy, A. E., Schuurman, M. S., Stolow, A., Martinez, T. J.  
2021: 6363-6369
- **Disentangling the subcycle electron momentum spectrum in strong-field ionization** *PHYSICAL REVIEW RESEARCH*  
Werby, N., Natan, A., Forbes, R., Bucksbaum, P. H.  
2021; 3 (2)
- **Multi-channel photodissociation and XUV-induced charge transfer dynamics in strong-field-ionized methyl iodide studied with time-resolved recoil-frame covariance imaging.** *Faraday discussions*  
Allum, F., Anders, N., Brouard, M., Bucksbaum, P., Burt, M., Downes-Ward, B., Grundmann, S., Harries, J., Ishimura, Y., Iwayama, H., Kaiser, L., Kukk, E., Lee, et al  
2021
- **Time-resolved site-selective imaging of predissociation and charge transfer dynamics: the CH3I B-band** *JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS*  
Forbes, R., Allum, F., Bari, S., Boll, R., Borne, K., Brouard, M., Bucksbaum, P. H., Ekanayake, N., Erk, B., Howard, A. J., Johnsson, P., Lee, J. L., Manschwetus, et al  
2020; 53 (22)
- **Momentum-resolved above-threshold ionization of deuterated water** *PHYSICAL REVIEW A*  
Cheng, C., Forbes, R., Howard, A. J., Spanner, M., Bucksbaum, P. H., Weinacht, T.  
2020; 102 (5)
- **Tracking the ultraviolet-induced photochemistry of thiophenone during and after ultrafast ring opening.** *Nature chemistry*  
Pathak, S., Ibele, L. M., Boll, R., Callegari, C., Demidovich, A., Erk, B., Feifel, R., Forbes, R., Di Fraia, M., Giannessi, L., Hansen, C. S., Holland, D. M., Ingle, et al  
2020
- **Spectroscopic and Structural Probing of Excited-State Molecular Dynamics with Time-Resolved Photoelectron Spectroscopy and Ultrafast Electron Diffraction** *PHYSICAL REVIEW X*  
Liu, Y., Horton, S. L., Yang, J., Nunes, J. F., Shen, X., Wolfe, T. A., Forbes, R., Cheng, C., Moore, B., Centurion, M., Hegazy, K., Li, R., Lin, et al  
2020; 10 (2)