

# Publications

## Journal Papers

### ARTEMIS

R Krause, M Chávez-Cervantes, S Aeschlimann, S Forti, F Fabbri, A Rossi, C Coletti, C Cacho, Y Zhang, PE Majchrzak, RT Chapman, E Springate, I Gierz

**Ultrafast Charge Separation in Bilayer  $WS_2$ /Graphene Heterostructure Revealed by Time- and Angle-Resolved Photoemission Spectroscopy**

FRONTIERS IN PHYSICS, 9, 668149 (2021)

P Majchrzak, K Volckaert, AG Čabo, D Biswas, M Bianchi, SK Mahatha, M Dendzik, F Andreatta, SS Grønberg, I Marković, JM Riley, JC Johannsen, D Lizzit, L Bignardi, S Lizzit, C Cacho, O Alexander, D Matselyukh, AS Wyatt, RT Chapman, E Springate, JV Lauritsen, PD King, CE Sanders, JA Miwa, P Hofmann, S Ulstrup

**Spectroscopic view of ultrafast charge carrier dynamics in single- and bilayer transition metal dichalcogenide semiconductors**

JOURNAL OF ELECTRON SPECTROSCOPY AND RELATED PHENOMENA, 250, 147093 (2021)

B Downes-Ward, EM Warne, J Woodhouse, MA Parkes, E Springate, PAJ Percy, Y Zhang, G Karras, AS Wyatt, RT Chapman, RS Minns

**Photodissociation dynamics of methyl iodide across the A-band probed by femtosecond extreme ultraviolet photoelectron spectroscopy**

JOURNAL OF PHYSICS B: ATOMIC, MOLECULAR AND OPTICAL PHYSICS, 54, 134003 (2021)

P Majchrzak, S Pakdel, D Biswas, AJH Jones, K Volckaert, I Marković, F Andreatta, R Sankar, C Jozwiak, E Rotenberg, A Bostwick, CE Sanders, Y Zhang, G Karras, RT Chapman, A Wyatt, E Springate, JA Miwa, P Hofmann, PDC King, N Lanatà, YJ Chang, S Ulstrup

**Switching of the electron-phonon interaction in  $1T-VSe_2$  assisted by hot carriers**

PHYSICAL REVIEW B, 103, L241108 (2021)

### CALTA

P Shukla, X Shen, R Allott, K Ertel, S Robertson, R Crookes, H Wu, A Zammit, P Swanson, M Fitzpatrick

**Response of silicon nitride ceramics subject to laser shock treatment**

CERAMICS INTERNATIONAL, 47, 34538-34553 (2021)

K Kato, S Banerjee, N Umemura

**Phase-matching properties of  $AgGa_{0.86}In_{0.14}S_2$  for three-wave interactions in the 0.615-10.5910  $\mu m$  spectral range**

OPTICAL MATERIALS EXPRESS, 11, 2800-2805 (2021)

JP Phillips, S Banerjee, P Mason, J Smith, J Spear, M De Vido, K Ertel, T Butcher, G Quinn, D Clarke, C Edwards, C Hernandez-Gomez, J Collier

**Second and third harmonic conversion of a kilowatt average power, 100-J-level diode pumped Yb:YAG laser in large aperture LBO**

OPTICS LETTERS, 46, 1808-1811 (2021)

M Divoky, J Pilar, M Hanus, P Navratil, O Denk, P Severova, P Mason, T Butcher, S Banerjee, M De Vido, C Edwards, J Collier, M Smrz, T Mocek

**150 J DPSSL operating at 1.5 kW level**

OPTICS LETTERS, 46, 5771-5773 (2021)

### GEMINI

A McIlvenny, D Doria, L Romagnani, H Ahmed, N Booth, E Ditter, O Ettliger, G Hicks, P Martin, G Scott, S Williamson, A Macchi, P McKenna, Z Najmudin, D Neely, S Kar, M Borghesi

**Selective Ion Acceleration by Intense Radiation Pressure**

PHYSICAL REVIEW LETTERS, 127, 194801 (2021)

W Sun, DR Symes, CM Brenner, M Böhnelt, S Brown, MN Mavrogordato, I Sinclair, M Salamon

**Review of high energy x-ray computed tomography for non-destructive dimensional metrology of large metallic advanced manufactured components**

REPORTS ON PROGRESS IN PHYSICS, 85, 16102 (2022)

B Kettle, D Hollatz, E Gerstmayr, GM Samarin, A Alejo, S Astbury, CD Baird, S Bohlen, M Campbell, C Colgan, D Dannheim, C Gregory, H Harsh, P Hatfield, J Hinojosa, Y Katzir, J Morton, C Murphy, A Nurnberg, J Osterhoff, G Perez, K Poder, PP Rajeev, C Roedel, F Roeder, FC Salgado, G Sarri, A Seidel, S Spannagel, C Spindloe, S Steinke, M Streeter, AGR Thomas, C Underwood, R Watt, M Zepf, SJ Rose, S Mangles

**A laser-plasma platform for photon-photon physics: the two photon Breit-Wheeler process**

NEW JOURNAL OF PHYSICS, 23, 115006 (2021)

L Bradley, MJV Streeter, C Murphy, C Arran,  
TG Blackburn, M Galletti, S Mangles, CP Ridgers

***Effect of laser temporal intensity skew on enhancing pair production in laser - electron-beam collisions***

NEW JOURNAL OF PHYSICS, 23, 95004 (2021)

A Maitrallain, E Brunetti, M Streeter, B Kettle,  
R Spesyvtsev, G Vieux, M Shazhad, B Ersfeld, S Yoffe,  
A Kornaszewski, O Finlay, Y Ma, F Albert, N Bourgeois,  
SJ Dann, N Lemos, S Cipiccia, JM Cole, I Gallardo  
González, L Willingale, A Higginbotham, A Hussein,  
M Šmid, K Falk, K Krushelnick, NC Lopes, E Gerstmayr,  
C Lumsdon, O Lundh, S Mangles, Z Najmudin,  
PP Rajeev, D Symes, AGR Thomas, DA Jaroszynski

***Parametric study of high-energy ring-shaped electron beams from a laser wakefield accelerator***

NEW JOURNAL OF PHYSICS, 24, 13017 (2021)

GG Scott, GFH Indorf, MA Ennen, P Forestier-Colleoni,  
SJ Hawkes, L Scaife, M Sedov, DR Symes, C Thornton,  
F Beg, T Ma, P McKenna, AA Andreev, U Teubner, D Neely

***Kinematics of femtosecond laser-generated plasma expansion: Determination of sub-micron density gradient and collisionality evolution of over-critical laser plasmas***

PHYSICS OF PLASMAS, 28, 93109 (2021)

GFH Indorf, GG Scott, MA Ennen, P Forestier-Colleoni,  
D Haddock, SJ Hawkes, L Scaife, N Bourgeois,  
D Symes, C Thornton, A Andreev, U Teubner, D Neely

***Investigation of the ejected mass during high-intensity laser solid interaction for improved plasma mirror generation***

PLASMA PHYSICS AND CONTROLLED FUSION, 64,  
34004 (2022)

HSP Thomas, RM Deas, LN Kirkham, PM Dodd,  
E Zemaityte, AD Hillier, D Neely

***Response of nuclear track detector CR-39 to low energy muons***

PLASMA PHYSICS AND CONTROLLED FUSION, 63,  
124001 (2021)

A Prasselsperger, M Coughlan, N Breslin, M Yeung,  
C Arthur, H Donnelly, S White, M Afshari, M Speicher, R Yang,  
B Villagomez-Bernabe, F Currell, J Schreiber, B Dromey

***Real-Time Electron Solvation Induced by Bursts of Laser-Accelerated Protons in Liquid Water***

PHYSICAL REVIEW LETTERS, 127, 186001 (2021)

## LASER DEVELOPMENTS

M Galimberti, FG Bisesto, M Galletti

***Innovative single-shot 2D pulse front tilt diagnostic***

HIGH POWER LASER SCIENCE AND ENGINEERING, 9,  
e16 (2021)

CN Danson, M White, JRM Barr, T Bett, P Blyth,  
D Bowley, C Brenner, RJ Collins, N Croxford,  
AEB Dangor, L Devereux, PE Dyer, A Dymoke-Bradshaw,  
CB Edwards, P Ewart, AI Ferguson, JM Girkin, DR Hall,  
DC Hanna, W Harris, DI Hillier, CJ Hooker, SM Hooker,  
N Hopps, J Hull, D Hunt, DA Jaroszynski,  
M Kempenaars, H Kessler, SPL Knight, S Knight,  
A Knowles, CLS Lewis, KS Lipton, A Littlechild,  
J Littlechild, P Maggs, GPA Malcolm, SPD Mangles,  
W Martin, P McKenna, RO Moore, C Morrison,  
Z Najmudin, D Neely, GHC New, MJ Norman, T Paine,  
AW Parker, RR Penman, GJ Pert, C Pietraszewski,  
A Randewich, NH Rizvi, N Seddon, Z Sheng, D Slater,  
RA Smith, C Spindloe, R Taylor, G Thomas, JWG Tisch,  
JS Wark, C Webb, SM Wiggins, D Willford, T Winstone

***A history of high-power laser research and development in the United Kingdom***

HIGH POWER LASER SCIENCE AND ENGINEERING, 9,  
e18 (2021)

J McConnell, G Karras, GM Archipovaite

***Designing OPAs in the NIR with an all-bulk chirp control***

PROCEEDINGS OF SPIE, 11777, 117770G (2021)

Y Hemani, M Galimberti, D Bleiner

***EMPULSE: a compact terawatt chirped pulse amplification laser for generating coherent x-rays***

PROCEEDINGS OF SPIE, 11886, 1188607 (2021)

## PLASMA PHYSICS

R Scott, K Glize, L Antonelli, M Khan, W Theobald,  
M Wei, R Betti, C Stoeckl, A Seaton, T Arber, D Barlow,  
T Goffrey, K Bennett, W Garbett, S Atzeni, A Casner,  
D Batani, C Li, N Woolsey

***Shock Ignition Laser-Plasma Interactions in Ignition-Scale Plasmas***

PHYSICAL REVIEW LETTERS, 127, 65001 (2021)

S Zhang, J Li, CM Krauland, FN Beg, S Muller,  
W Theobald, J Palastro, T Filkins, D Turnbull, D  
Haberberger, C Ren, R Betti, C Stoeckl, EM Campbell,  
J Trela, D Batani, RHH Scott, MS Wei

***Pump-depletion dynamics and saturation of stimulated Brillouin scattering in shock ignition relevant experiments***

PHYSICAL REVIEW E, 103, 63208 (2021)

K Jana, AD Lad, D West, W Trickey, C Underwood, YM Ved, APL Robinson, J Pasley, GR Kumar

***Femtosecond, two-dimensional spatial Doppler mapping of ultraintense laser-solid target interaction***

PHYSICAL REVIEW RESEARCH, 3, 33034 (2021)

S Morris, A Robinson, C Ridgers

***Highly efficient conversion of laser energy to hard x-rays in high-intensity laser-solid simulations***

PHYSICS OF PLASMAS, 28, 103304 (2021)

A Tentori, A Colaitis, W Theobald, A Casner, D Raffestin, A Ruocco, J Trela, E Le Bel, K Anderson, M Wei, B Henderson, J Peebles, R Scott, S Baton, SA Pikuz, R Betti, M Khan, N Woolsey, S Zhang, D Batani

***Experimental characterization of hot-electron emission and shock dynamics in the context of the shock ignition approach to inertial confinement fusion***

PHYSICS OF PLASMAS, 28, 103302 (2021)

APL Robinson

***A critical analysis of the ‘ponderomotive snowplow’ concept in direct laser acceleration of electrons***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 064003 (2021)

RMGM Trines, APL Robinson, JR Wilkinson, JN Kirk, DS Hills, RM Deas, S Morris, T Goffrey, K Bennett, TD Arber

***Laser-assisted propagation of a relativistic electron bunch in air***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 84009 (2021)

A Ruocco, G Duchateau, VT Tikhonchuk

***Self-focusing of a spatially modulated beam within the paraxial complex geometrical optics framework in low-density plasmas***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 125019 (2021)

EP Alves, RMGM Trines, KA Humphrey, R Bingham, RA Cairns, F Fiúza, RA Fonseca, LO Silva

***A robust plasma-based laser amplifier via stimulated Brillouin scattering***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 114004 (2021)

B Brandão, JE Santos, RMGM Trines, R Bingham, LO Silva

***Bandwidth effects in stimulated Brillouin scattering driven by partially incoherent light***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 94003 (2021)

DR Blackman, A Adak, PK Singh, AD Lad, G Chatterjee, CP Ridgers, D Del Sorbo, RMGM Trines, APL Robinson, W Nazarov, G Ravindra Kumar, J Pasley

***Formation and evolution of post-solitons following a high intensity laser-plasma interaction with a low-density foam target***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 74001 (2021)

RMGM Trines, EP Alves, KA Humphrey, R Bingham, RA Cairns, F Fiúza, RA Fonseca, LO Silva

***Boosting the performance of Brillouin amplification at sub-quarter-critical densities via reduction of parasitic Raman scattering***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 124003 (2021)

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## VULCAN

G Cristoforetti, S Hüller, P Koester, L Antonelli, S Atzeni, F Baffigi, D Batani, C Baird, N Booth, M Galimberti, K Glize, A Héron, M Khan, P Loiseau, D Mancelli, M Notley, P Oliveira, O Renner, M Smid, A Schiavi, G Tran, NC Woolsey, LA Gizzi

***Observation and modelling of stimulated Raman scattering driven by an optically smoothed laser beam in experimental conditions relevant for shock ignition***

HIGH POWER LASER SCIENCE AND ENGINEERING, 9, e60 (2021)

C Hyland, S White, B Kettle, R Irwin, D Bailie, M Yeung, G Williams, R Heathcote, I East, C Spindloe, M Notley, D Riley

***Measurements of free-free absorption in warm dense aluminium***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 74003 (2021)

P Bradford, A Dearling, M Ehret, L Antonelli, N Booth, DC Carroll, RJ Clarke, K Glize, R Heathcote, M Khan, JD Moody, S Pikuz, BB Pollock, MP Read, S Ryazantsev, C Spindloe, CP Ridgers, JJ Santos, VT Tikhonchuk, NC Woolsey

***Measuring magnetic fields in laser-driven coils with dual-axis proton deflectometry***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 84008 (2021)

A Higginson, R Wilson, J Goodman, M King, RJ Dance, NMH Butler, CD Armstrong, M Notley, DC Carroll, Y Fang, XH Yuan, D Neely, RJ Gray, P McKenna

***Influence of target-rear-side short scale length density gradients on laser-driven proton acceleration***

PLASMA PHYSICS AND CONTROLLED FUSION, 63, 114001 (2021)

P Chaudhary, DC Gwynne, B Odlozilik, A McMurray, G Milluzzo, C Maiorino, D Doria, H Ahmed, L Romagnani, A Alejo, H Padda, J Green, D Carroll, N Booth, P McKenna, S Kar, G Petringa, R Catalano, FP Cammarata, GAP Cirrone, SJ McMahon, KM Prise, M Borghesi

***Development of a portable hypoxia chamber for ultra-high dose rate laser-driven proton radiobiology applications***

RADIATION ONCOLOGY, 17, 77 (2022)

CD Armstrong, D Neely, D Kumar, P McKenna, RJ Gray, AS Pirozhkov

***Deconvolution of multi-Boltzmann x-ray distribution from linear absorption spectrometer via analytical parameter reduction***

REVIEW OF SCIENTIFIC INSTRUMENTS, 92, 113102 (2021)

D Doria, P Martin, H Ahmed, A Alejo, M Cerchez, S Ferguson, J Fernandez-Tobias, JS Green, D Gwynne, F Hanton, J Jarrett, DA Maclellan, A McIlvenny, P McKenna, JA Ruiz, M Swantusch, O Willi, S Zhai, M Borghesi, S Kar

***Calibration of BAS-TR image plate response to GeV gold ions***

REVIEW OF SCIENTIFIC INSTRUMENTS, 93, 33304 (2022)

R Wilson, M King, NMH Butler, DC Carroll, TP Frazer, MJ Duff, A Higginson, RJ Dance, J Jarrett, ZE Davidson, CD Armstrong, H Liu, SJ Hawkes, RJ Clarke, D Neely, RJ Gray, P McKenna

***Influence of spatial-intensity contrast in ultraintense laser-plasma interactions***

SCIENTIFIC REPORTS, 12, 1910 (2022)

## ULTRA

LA Hammarback, AL Bishop, C Jordan, G Athavan, JB Eastwood, TJ Burden, JTW Bray, F Clarke, A Robinson, J Krieger, A Whitwood, IP Clark, M Towrie, JM Lynam, IJS Fairlamb

***Manganese-Mediated C-H Bond Activation of Fluorinated Aromatics and the ortho-Fluorine Effect: Kinetic Analysis by In Situ Infrared Spectroscopic Analysis and Time-Resolved Methods***

ACS CATALYSIS, 12, 1532-1544 (2022)

G Ning, P Cui, IV Sazanovich, JT Pegg, Q Zhu, Z Pang, R Wei, M Towrie, KE Jelfs, MA Little, AI Cooper

***Organic cage inclusion crystals exhibiting guest-enhanced multiphoton harvesting***

CHEM, 7, 3157-3170 (2021)

SV Lepeshkevich, IV Sazanovich, MV Parkhats, SN Gilevich, BM Dzhagarov

***Towards understanding non-equivalence of  $\alpha$  and  $\beta$  subunits within human hemoglobin in conformational relaxation and molecular oxygen rebinding***

CHEMICAL SCIENCE, 12, 7033-7047 (2021)

FA Baptista, D Krizsan, M Stitch, IV Sazanovich, IP Clark, M Towrie, C Long, L Martinez-Fernandez, R Improta, NAP Kane-Maguire, JM Kelly, SJ Quinn

***Adenine Radical Cation Formation by a Ligand-Centered Excited State of an Intercalated Chromium Polypyridyl Complex Leads to Enhanced DNA Photo-oxidation***

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, 143, 14766-14779 (2021)

L Lewis-Borrell, M Sneha, IP Clark, V Fasano, A Noble, VK Aggarwal, AJ Orr-Ewing

***Direct Observation of Reactive Intermediates by Time-Resolved Spectroscopy Unravels the Mechanism of a Radical-Induced 1,2-Metalate Rearrangement***

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, 143, 17191-17199 (2021)

F Dröge, FF Noakes, SA Archer, S Sreedharan, A Raza, CC Robertson, S MacNeil, JW Haycock, H Carson, AJHM Meijer, CGW Smythe, J Bernardino de la Serna, B Dietzek-Ivanšić, JA Thomas

***A Dinuclear Osmium(II) Complex Near-Infrared Nanoscopy Probe for Nuclear DNA***

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, 143, 20442-20453 (2021)



JH van Wonderen, K Adamczyk, X Wu, X Jiang, SEH Piper, CR Hall, MJ Edwards, TA Clarke, H Zhang, LJC Jeuken, IV Sazanovich, M Towrie, J Blumberger, SR Meech, JN Butt

***Nanosecond heme-to-heme electron transfer rates in a multiheme cytochrome nanowire reported by a spectrally unique His/Met-ligated heme***

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA, 118, e2107939118 (2021)

M Pižl, BM Hunter, IV Sazanovich, M Towrie, HB Gray, S Záliš, A Vlček

***Excitation-Wavelength-Dependent Photophysics of d8d8 Di-isocyanide Complexes***

INORGANIC CHEMISTRY, 61, 2745-2759 (2021)

AA Seddon, JKG Karlsson, EA Gibson, L O'Reilly, M Kaufmann, JG Vos, MT Pryce

***Photoelectrochemical Hydrogen Evolution Using Dye-Sensitised NiO***

JOHNSON MATTHEY TECHNOLOGY REVIEW, 66, 21-31 (2021)

P Pospíšil, L Cwiklik, J Sýkora, M Hof, GM Greetham, M Towrie, A Vlček

***Solvent-Dependent Excited-State Evolution of Prodan Dyes***

JOURNAL OF PHYSICAL CHEMISTRY B, 125, 13858-13867 (2021)

M Sneha, A Bhattacharjee, L Lewis-Borrell, IP Clark, AJ Orr-Ewing

***Structure-Dependent Electron Transfer Rates for Dihydrophenazine, Phenoxazine, and Phenothiazine Photoredox Catalysts Employed in Atom Transfer Radical Polymerization***

JOURNAL OF PHYSICAL CHEMISTRY B, 125, 7 840-7854 (2021)

VL Piercy, KH Saeed, AW Prentice, G Neri, C Li, AM Gardner, Y Bai, RS Sprick, IV Sazanovich, AI Cooper, MJ Rosseinsky, MA Zwijnenburg, AJ Cowan

***Time-Resolved Raman Spectroscopy of Polaron Formation in a Polymer Photocatalyst***

JOURNAL OF PHYSICAL CHEMISTRY LETTERS, 12, 10899-10905 (2021)

LM Uriarte, R Vitale, S Niziński, K Hadjidemetriou, N Zala, A Lukacs, GM Greetham, IV Sazanovich, M Weik, C Ruckebusch, SR Meech, M Sliwa

***Structural Information about the trans-to-cis Isomerization Mechanism of the Photoswitchable Fluorescent Protein rsEGFP2 Revealed by Multiscale Infrared Transient Absorption***

JOURNAL OF PHYSICAL CHEMISTRY LETTERS, 13, 1194-1202 (2022)

J Dale, CP Howe, H Toncrova, R Fritzsche, GM Greetham, IP Clark, M Towrie, AW Parker, TC McLeish, NT Hunt

***Combining steady state and temperature jump IR spectroscopy to investigate the allosteric effects of ligand binding to dsDNA***

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, 23, 15352-15363 (2021)

B Procacci, SH Rutherford, GM Greetham, M Towrie, AW Parker, CV Robinson, CR Howle, NT Hunt, JA Guicheteau

***Sensing of bacterial spores with 2D-IR spectroscopy***

PROCEEDINGS OF SPIE, 11749, 117490C (2021)

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## OCTOPUS

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O Morana, JA Nieto-Garai, P Björkholm, J Bernardino de la Serna, O Terrones, A Arboleya, D Ciceri, I Rojo-Bartolomé, CM Blouin, C Lamaze, M Lorizate, F Contreras

***Identification of a New Cholesterol-Binding Site within the IFN- $\gamma$  Receptor that is Required for Signal Transduction***

ADVANCED SCIENCE, 9, 2105170 (2022)

G Davies, J Driver, A Ward, L Negahdar, J McGregor

***Operando Studies of Aerosol-Assisted Sol-Gel Catalyst Synthesis via Combined Optical Trapping and Raman Spectroscopy***

JOURNAL OF PHYSICAL CHEMISTRY C, 125, 22591-22602 (2021)

L Mendonça, A Howe, JB Gilchrist, Y Sheng, D Sun, ML Knight, LC Zanetti-Domingues, B Bateman, A Krebs, L Chen, J Radecke, VD Li, T Ni, I Kounatidis, MA Koronfel, M Szykiewicz, M Harkiolaki, ML Martin-Fernandez, W James, P Zhang

***Correlative multi-scale cryo-imaging unveils SARS-CoV-2 assembly and egress***

NATURE COMMUNICATIONS, 12, 4629 (2021)

Y Hari-Gupta, N Fili, Á dos Santos, AW Cook, RE Gough, HCW Reed, L Wang, J Aaron, T Venit, E Wait, A Grosse-Berkenbusch, JCM Gebhardt, P Percipalle, T Chew, M Martin-Fernandez, CP Toseland

***Myosin VI regulates the spatial organisation of mammalian transcription initiation***

NATURE COMMUNICATIONS, 13, 1346 (2022)

M Lorizate, O Terrones, JA Nieto-Garai, I Rojo-Bartolomé, D Ciceri, O Morana, J Olazar-Intxausti, A Arboleya, A Martin, M Szykiewicz, M Calleja-Felipe, J Bernardino de la Serna, F Contreras

***Super-Resolution Microscopy Using a Bioorthogonal-Based Cholesterol Probe Provides Unprecedented Capabilities for Imaging Nanoscale Lipid Heterogeneity in Living Cells***

SMALL METHODS, 5, 2100430 (2021)

G Poologasundarampillai, A Haweet, SN Jayash, G Morgan, JE Moore, A Candeo

***Real-time imaging and analysis of cell-hydrogel interplay within an extrusion-bioprinting capillary***

BIOPRINTING, 23, e00144 (2021)

ML Martin-Fernandez

***Fluorescence Imaging of Epidermal Growth Factor Receptor Tyrosine Kinase Inhibitor Resistance in Non-Small Cell Lung Cancer***

CANCERS, 14, 686 (2022)

AC Benniston, D Sirbu, NV Tkachenko, L Zeng, PG Waddell, SW Botchway

***Voltage-Induced Fluorescence Lifetime Imaging of a BODIPY Derivative in Giant Unilamellar Vesicles (GUVs) as Neuron Membrane Mimics***

CHEMICAL COMMUNICATIONS, 57, 12631-12634 (2021)

DC Green, R Darkins, B Marzec, MA Holden, IJ Ford, SW Botchway, B Kahr, DM Duffy, FC Meldrum

***Dichroic Calcite Reveals the Pathway from Additive Binding to Occlusion***

CRYSTAL GROWTH & DESIGN, 21, 3746-3755 (2021)

RR Mould, SW Botchway, JRC Parkinson, EL Thomas, GW Guy, JD Bell, AVW Nunn

***Cannabidiol Modulates Mitochondrial Redox and Dynamics in MCF7 Cancer Cells: A Study Using Fluorescence Lifetime Imaging Microscopy of NAD(P)H***

FRONTIERS IN MOLECULAR BIOSCIENCES, 8, 630107 (2021)

M Claes, JRF Santos, L Masin, L Cools, BM Davis, L Arckens, K Farrow, L De Groef, L Moons

***A Fair Assessment of Evaluation Tools for the Murine Microbead Occlusion Model of Glaucoma***

INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, 22, 5633 (2021)

M Bernabé-Rubio, M Bosch-Fortea, MA Alonso, J Bernardino de la Serna

***Multi-dimensional and spatiotemporal correlative imaging at the plasma membrane of live cells to determine the continuum nano-to-micro scale lipid adaptation and collective motion***

METHODS, 193, 136-147 (2021)

V Kriechbaumer, SW Botchway

***Methods for Detection of Protein Interactions with Plasmodesmata-Localized Reticulons***

METHODS IN MOLECULAR BIOLOGY, p209-218 (2022)

JF McKenna

***Quantifying the Organization and Dynamics of the Plant Plasma Membrane Across Scales Using Light Microscopy***

METHODS IN MOLECULAR BIOLOGY, p233-251 (2022)

MR McGrory, RH Shepherd, MD King, N Davidson, FD Pope, IM Watson, RG Grainger, AC Jones, AD Ward

***Mie scattering from optically levitated mixed sulfuric acid-silica core-shell aerosols: observation of core-shell morphology for atmospheric science***

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, 24, 5813-5822 (2022)

Z Savage, C Duggan, A Toufexi, P Pandey, Y Liang, ME Segretin, LH Yuen, DCA Gaboriau, AY Leary, Y Tumtas, V Khandare, AD Ward, SW Botchway, BC Bateman, I Pan, M Schattat, I Sparkes, TO Bozkurt

***Chloroplasts alter their morphology and accumulate at the pathogen interface during infection by *Phytophthora infestans****

PLANT JOURNAL, 107, 1771-1787 (2021)

## Individual contributions and collaborative science

J Dobkowski, M Kijak, S Gawinkowski, E Karpiuk, M Pietrzak, IV Sazanovich, J Waluk

### ***Solving the Puzzle of Unusual Excited-State Proton Transfer in 2,5-Bis(6-methyl-2-benzoxazolyl)phenol***

JOURNAL OF PHYSICAL CHEMISTRY A, 126, 1823-1836 (2022)

AD Crawshaw, EV Beale, AJ Warren, A Stallwood, G Duller, J Trincao, G Evans

### ***A Sample Preparation Pipeline for Microcrystals at the VMXm Beamline***

JOURNAL OF VISUALIZED EXPERIMENTS, 172, e62306 (2021)

C Ruyer, A Debayle, P Loiseau, PE Masson-Laborde, J Fuchs, M Casanova, JR Marquès, L Romagnani, P Antici, N Bourgeois, M Nakatsutsumi, M Safronova, M Starodubtsev, T Lin

### ***Forward scattering and filamentation of a spatially smoothed laser pulse in the hydrodynamic and kinetic frameworks***

PHYSICS OF PLASMAS, 28, 52701 (2021)

P Chaudhary, G Milluzzo, H Ahmed, B Odlozilik, A McMurray, KM Prise, M Borghesi

### ***Radiobiology Experiments with Ultra-high Dose Rate Laser-Driven Protons: Methodology and State-of-the-Art***

FRONTIERS IN PHYSICS, 9, 624963 (2021)

AR Bell, JH Matthews

### ***Echoes of the past: ultra-high-energy cosmic rays accelerated by radio galaxies, scattered by starburst galaxies***

MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, 511, 448-456 (2022)

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### ARTEMIS

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Carson, H.

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***Molecular Eyes – Proteins that Translate Light into Biological Signals***

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McGrory, M.

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Santos, A.

***Spatial and physical organisation of the mammalian nucleus***

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