

Publications

Journal Papers

CALTA

S Banerjee, J Spear, PJ Dalton

Laser shock peening of tungsten and its dependency on polarisation of light for induced compressive stresses

OPTICS EXPRESS, 30, 32084-32096 (2022)

S Banerjee, J Spear

Confinement and absorption layer free nanosecond laser shock peening of tungsten and its alloy

OPTICS LETTERS, 47, 4736-4739 (2022)

Gemini

G Vieux, S Cipiccia, GH Welsh, SR Yoffe, F Gärtner, MP Tooley, B Ersfeld, E Brunetti, B Eliasson, C Picken, G McKendrick, M Hur, JM Dias, T Kühl, G Lehmann, DA Jaroszynski

The role of transient plasma photonic structures in plasma-based amplifiers

COMMUNICATIONS PHYSICS, 6, 9 (2023)

B Loughran, MJV Streeter, H Ahmed, S Astbury, M Balcazar, M Borghesi, N Bourgeois, CB Curry, SJD Dann, S Dilorio, NP Dover, T Dzelzainis, OC Ettlinger, M Gauthier, L Giuffrida, GD Glenn, SH Glenzer, JS Green, RJ Gray, GS Hicks, C Hyland, V Istokskaia, M King, D Margarone, O McCusker, P McKenna, Z Najmudin, C Parisuaña, P Parsons, C Spindloe, DR Symes, AGR Thomas, F Treffert, N Xu, CAJ Palmer

Automated control and optimization of laser-driven ion acceleration

HIGH POWER LASER SCIENCE AND ENGINEERING, 11, e35 (2023)

M Streeter, C Colgan, C Cobo, C Arran, E Los, R Watt, N Bourgeois, L Calvin, J Carderelli, N Cavanagh, S Dann, R Fitzgarrald, E Gerstmayr, A Joglekar, B Kettle, P McKenna, C Murphy, Z Najmudin, P Parsons, Q Qian, P Rajeev, C Ridgers, D Symes, A Thomas, G Sarri, S Mangles

Laser Wakefield Accelerator modelling with Variational Neural Networks

HIGH POWER LASER SCIENCE AND ENGINEERING, 11, e9 (2023)

N Xu, MJV Streeter, OC Ettlinger, H Ahmed, S Astbury, M Borghesi, N Bourgeois, CB Curry, SJD Dann, NP Dover, T Dzelzainis, V Istokskaia, M Gauthier, L Giuffrida, GD Glenn, SH Glenzer, RJ Gray, JS Green, GS Hicks, C Hyland, M King, B Loughran, D Margarone, O McCusker, P McKenna, C Parisuaña, P Parsons, C Spindloe, DR Symes, F Treffert, CAJ Palmer, Z Najmudin

Versatile tape-drive target for high-repetition-rate laser-driven proton acceleration

HIGH POWER LASER SCIENCE AND ENGINEERING, 11, e23 (2023)

M Streeter, Y Ma, B Kettle, S Dann, E Gerstmayr, F Albert, N Bourgeois, S Cipiccia, J Cole, I Gallardo González, A Hussein, D Jaroszynski, K Falk, K Krushelnick, N Lemos, N Lopes, C Lumsdon, O Lundh, S Mangles, Z Najmudin, R Pattathil, R Sandberg, M Shahzad, M Smid, R Spesyvtsev, D Symes, G Vieux, A Thomas

Characterization of laser wakefield acceleration efficiency with octave spanning near-IR spectrum measurements

PHYSICAL REVIEW ACCELERATORS AND BEAMS, 25, 101302 (2022)

L Dickson, C Underwood, F Filippi, R Shalloo, JB Svensson, D Guénot, K Svendsen, I Moulanier, SD Dufrénoy, C Murphy, N Lopes, P Rajeev, Z Najmudin, G Cantono, A Persson, O Lundh, G Maynard, M Streeter, B Cros

Mechanisms to control laser-plasma coupling in laser wakefield electron acceleration

PHYSICAL REVIEW ACCELERATORS AND BEAMS, 25, 101301 (2022)

P Chaudhary, G Milluzzo, A McIlvenny, H Ahmed, A McMurray, C Maiorino, K Polin, L Romagnani, D Doria, SJ McMahon, SW Botchway, PP Rajeev, KM Prise, M Borghesi

Cellular irradiations with laser-driven carbon ions at ultra-high dose rates

PHYSICS IN MEDICINE AND BIOLOGY, 68, 25015 (2023)

Plasma Physics

R Paddock, H Martin, R Ruskov, R Scott, W Garbett, B Haines, A Zylstra, E Campbell, T Collins, R Craxton, C Thomas, V Goncharov, R Aboushelbaya, Q Feng, M von der Leyen, I Ouatu, B Spiers, R Timmis, R Wang, P Norreys

Pathways towards break even for low convergence ratio direct-drive inertial confinement fusion

JOURNAL OF PLASMA PHYSICS, 88, 905880314 (2022)

H Schmitz, R Trines, R Bingham, E Kur, P Michel

Investigations of nonlinear polarization transfer between obliquely intersecting beams

JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B, 40, 922-929 (2023)

H Abu-Shawareb et al.

Lawson Criterion for Ignition Exceeded in an Inertial Fusion Experiment

PHYSICAL REVIEW LETTERS, 129, 75001 (2022)

R Scott, D Barlow, W Trickey, A Ruocco, K Glize, L Antonelli, M Khan, N Woolsey

Shock-Augmented Ignition Approach to Laser Inertial Fusion

PHYSICAL REVIEW LETTERS, 129, 195001 (2022)

K Weichman, JP Palastro, APL Robinson, R Bingham, AV Arefiev

Underdense relativistically thermal plasma produced by magnetically assisted direct laser acceleration

PHYSICAL REVIEW RESEARCH, 4, L042017 (2022)

K Weichman, APL Robinson, M Murakami, JJ Santos, S Fujioka, T Toncian, JP Palastro, AV Arefiev

Progress in relativistic laser-plasma interaction with kilotesla-level applied magnetic fields

PHYSICS OF PLASMAS, 29, 53104 (2022)

D Barlow, T Goffrey, K Bennett, RHH Scott, K Glize, W Theobald, K Anderson, AA Solodov, MJ Rosenberg, M Hohenberger, NC Woolsey, P Bradford, M Khan, TD Arber

Role of hot electrons in shock ignition constrained by experiment at the National Ignition Facility

PHYSICS OF PLASMAS, 29, 82704 (2022)

APL Robinson

Intense laser-generated ion beams in plasmas: the rapid heating regime

PLASMA PHYSICS AND CONTROLLED FUSION, 65, 55004 (2023)

APL Robinson

Intense laser-generated ion beams propagating in plasmas

PLASMA PHYSICS AND CONTROLLED FUSION, 64, 105014 (2022)

L Ceurvorst, W Theobald, MJ Rosenberg, PB Radha, C Stoeckl, R Betti, KS Anderson, JA Marozas, VN Goncharov, EM Campbell, CM Shuldberg, RW Luo, W Sweet, L Aghaian, L Carlson, B Bachmann, T Döppner, M Hohenberger, K Glize, RHH Scott, A Colaitis, SP Regan

Development of an x-ray radiography platform to study laser-direct-drive energy coupling at the National Ignition Facility

REVIEW OF SCIENTIFIC INSTRUMENTS, 93, 105102 (2022)

Vulcan

R Singh, S White, M Charlwood, F Keenan, C Hyland, D Bailie, T Audet, G Sarri, SJ Rose, J Morton, C Baird, C Spindloe, D Riley, S Pikuz

L-Shell X-Ray Conversion Yields for Laser-Irradiated Tin and Silver Foils

LASER AND PARTICLE BEAMS, 2022, 1-10 (2022)

S Ferguson, P Martin, H Ahmed, E Aktan, M Alanazi, M Cerchez, D Doria, JS Green, B Greenwood, B Odlozilik, O Willi, M Borghesi, S Kar

Dual stage approach to laser-driven helical coil proton acceleration

NEW JOURNAL OF PHYSICS, 25, 13006 (2023)

RW Paddock, MW von der Leyen, R Aboushelbaya, PA Norreys, DJ Chapman, DE Eakins, M Oliver, RJ Clarke, M Notley, CD Baird, N Booth, C Spindloe, D Haddock, S Irving, RHH Scott, J Pasley, M Cipriani, F Consoli, B Albertazzi, M Koenig, AS Martynenko, L Wegert, P Neumayer, P Tchorz, P Raczka, P Mabey, W Garbett, RMN Goshadze, VV Karasiev, SX Hu

Measuring the principal Hugoniot of inertial-confinement-fusion-relevant TMPTA plastic foams

PHYSICAL REVIEW E, 107, 25206 (2023)

A Alejo, H Ahmed, A Krygier, R Clarke, R Freeman, J Fuchs, A Green, J Green, D Jung, A Kleinschmidt, J Morrison, Z Najmudin, H Nakamura, P Norreys, M Notley, M Oliver, M Roth, L Vassura, M Zepf, M Borghesi, S Kar

Stabilized Radiation Pressure Acceleration and Neutron Generation in Ultrathin Deuterated Foils

PHYSICAL REVIEW LETTERS, 129, 114801 (2022)

SN Ryazantsev, AS Martynenko, MV Sedov, IY Skobelev, MD Mishchenko, YS Lavrinenko, CD Baird, N Booth, P Durey, LNK Döhl, D Farley, KL Lancaster, P McKenna, CD Murphy, TA Pikuz, C Spindloe, N Woolsey, SA Pikuz

Absolute keV x-ray yield and conversion efficiency in over dense Si sub-petawatt laser plasma

PLASMA PHYSICS AND CONTROLLED FUSION, 64, 105016 (2022)

O McCusker, H Ahmed, A McIlvenny, P Martin, S Ferguson, J Green, J Jarrett, M King, S Zhai, P McKenna, S Kar, M Borghesi

Multi-species ion acceleration from sub-ps, PW interactions with ultra-thin foils

PLASMA PHYSICS AND CONTROLLED FUSION, 65, 15005 (2022)

K Makur, B Ramakrishna, S Krishnamurthy, KF Kakolee, S Kar, M Cerchez, R Prasad, K Markey, M Quinn, X Yuan, J Green, RHH Scott, P McKenna, J Osterholz, O Willi, PA Norreys, M Borghesi, M Zepf

Probing bulk electron temperature via x-ray emission in a solid density plasma

PLASMA PHYSICS AND CONTROLLED FUSION, 65, 45005 (2023)

Target Fabrication

SN Ryazantsev, AS Martynenko, MV Sedov, IY Skobelev, MD Mishchenko, YS Lavrinenko, CD Baird, N Booth, P Durey, LNK Döhl, D Farley, KL Lancaster, P McKenna, CD Murphy, TA Pikuz, C Spindloe, N Woolsey, SA Pikuz

Absolute keV x-ray yield and conversion efficiency in over dense Si sub-petawatt laser plasma

PLASMA PHYSICS AND CONTROLLED FUSION, 64, 105016 (2022)

MO Schoelmerich, T Döppner, CH Allen, L Divol, M Oliver, D Haden, M Biener, J Crippen, J Delora-Ellefson, B Ferguson, DO Gericke, A Goldman, A Haid, C Heinbockel, D Kalantar, Z Karmiol, G Kemp, J Kroll, OL Landen, N Masters, Y Ping, C Spindloe, W Theobald, TG White

Developing a platform for Fresnel diffractive radiography with 1 μm spatial resolution at the National Ignition Facility

REVIEW OF SCIENTIFIC INSTRUMENTS, 94, 13104 (2023)

N Xu, MJV Streeter, OC Ettlinger, H Ahmed, S Astbury, M Borghesi, N Bourgeois, CB Curry, SJD Dann, NP Dover, T Dzelzainis, V Istokskaia, M Gauthier, L Giuffrida, GD Glenn, SH Glenzer, RJ Gray, JS Green, GS Hicks, C Hyland, M King, B Loughran, D Margarone, O McCusker, P McKenna, C Parisuaña, P Parsons, C Spindloe, DR Symes, F Treffert, CAJ Palmer, Z Najmudin

Versatile tape-drive target for high-repetition-rate laser-driven proton acceleration

HIGH POWER LASER SCIENCE AND ENGINEERING, 11, e23 (2023)

B Loughran, MJV Streeter, H Ahmed, S Astbury, M Balcazar, M Borghesi, N Bourgeois, CB Curry, SJD Dann, S Dilorio, NP Dover, T Dzelzainis, OC Ettlinger, M Gauthier, L Giuffrida, GD Glenn, SH Glenzer, JS Green, RJ Gray, GS Hicks, C Hyland, V Istokskaia, M King, D Margarone, O McCusker, P McKenna, Z Najmudin, C Parisuaña, P Parsons, C Spindloe, DR Symes, AGR Thomas, F Treffert, N Xu, CAJ Palmer

Automated control and optimization of laser-driven ion acceleration

HIGH POWER LASER SCIENCE AND ENGINEERING, 11, e35 (2023)

Ultra

M Sneha, GL Thornton, L Lewis-Borrell, ASH Ryder, SG Espley, IP Clark, AJ Cresswell, MN Grayson, AJ Orr-Ewing

Photoredox-HAT Catalysis for Primary Amine α -C-H Alkylation: Mechanistic Insight with Transient Absorption Spectroscopy

ACS CATALYSIS, 13, 8004-8013 (2023)

J Tolentino Collado, JN Iuliano, K Pirisi, S Jewlikar, K Adamczyk, GM Greetham, M Towrie, JRH Tame, SR Meech, PJ Tonge, A Lukacs

Unravelling the Photoactivation Mechanism of a Light-Activated Adenylyl Cyclase Using Ultrafast Spectroscopy Coupled with Unnatural Amino Acid Mutagenesis

ACS CHEMICAL BIOLOGY, 17, 2643-2654 (2022)

AR Neale, DC Milan, F Braga, IV Sazanovich, LJ Hardwick

Lithium Insertion into Graphitic Carbon Observed via Operando Kerr-Gated Raman Spectroscopy Enables High State of Charge Diagnostics

ACS ENERGY LETTERS, 7, 2611-2618 (2022)

SH Rutherford, GM Greetham, M Towrie, AW Parker, S Kharratian, TF Krauss, A Nordon, MJ Baker, NT Hunt

Detection of paracetamol binding to albumin in blood serum using 2D-IR spectroscopy

ANALYST, 147, 3464-3469 (2022)

P Sharma, M Sharma, M Dearn, M Wilding, TJ Slater, CRA Catlow

Cd/Pt Precursor Solution for Solar H₂ Production and in-situ Photochemical Synthesis of Pt Single-atom Decorated CdS Nanoparticles

ANGEWANDTE CHEMIE INTERNATIONAL EDITION, 135, e202301239 (2023)

K Sowidnich, M Towrie, P Matousek

Shifted Excitation Raman Difference Spectroscopy Combined with Wide Area Illumination and Sample Rotation for Wood Species Classification

APPLIED SPECTROSCOPY, 77, 666-681 (2023)

LA Hammarback, JB Eastwood, TJ Burden, CJ Pearce, IP Clark, M Towrie, A Robinson, IJS Fairlamb, JM Lynam

A comprehensive understanding of carbon-carbon bond formation by alkyne migratory insertion into manganacycles

CHEMICAL SCIENCE, 13, 9902-9913 (2022)

TJ Burden, KPR Fernandez, M Kagoro, J Eastwood, TFN Tanner, AC Whitwood, IP Clark, M Towrie, J Krieger, JM Lynam, IJS Fairlamb

Coumarin C-H Functionalization by Mn Carbonyls: Mechanistic Insight by Ultra-Fast IR Spectroscopic Analysis

CHEMISTRY: A EUROPEAN JOURNAL, 29, e202203038 (2023)

K Peterková, M Stitch, RZ Boota, P Scattergood, P Elliott, M Towrie, P Podbevsek, J Plavec, SJ Quinn

G-Quadruplex Binding of an NIR Emitting Osmium Polypyridyl Probe Revealed by Solution NMR and Time-Resolved Infrared Studies

CHEMISTRY: A EUROPEAN JOURNAL, 29, e202203250 (2022)

NP Gallop, J Ye, GM Greetham, TLC Jansen, L Dai, SJ Zelewski, R Arul, JJ Baumberg, RLZ Hoye, AA Bakulin

The effect of caesium alloying on the ultrafast structural dynamics of hybrid organic-inorganic halide perovskites

JOURNAL OF MATERIALS CHEMISTRY A: MATERIALS FOR ENERGY AND SUSTAINABILITY, 10, 22408-22418 (2022)

CP Howe, GM Greetham, B Procacci, AW Parker, NT Hunt

Sequence-Dependent Melting and Refolding Dynamics of RNA UNCG Tetraloops Using Temperature-Jump/Drop Infrared Spectroscopy

JOURNAL OF PHYSICAL CHEMISTRY B, 127, 1586-1597 (2023)

NBC Pfukwa, M Rautenbach, NT Hunt, OO Olaoye, V Kumar, AW Parker, L Minnes, PH Neethling

Temperature-Induced Effects on the Structure of Gramicidin S

JOURNAL OF PHYSICAL CHEMISTRY B, 127, 3774-3786 (2023)

CP Howe, GM Greetham, B Procacci, AW Parker, NT Hunt

Measuring RNA UNCG Tetraloop Refolding Dynamics Using Temperature-Jump/Drop Infrared Spectroscopy

JOURNAL OF PHYSICAL CHEMISTRY LETTERS, 13, 9171-9176 (2022)

M Speirs, SJO Hardman, AI Iorgu, LO Johannissen, DJ Heyes, NS Scrutton, IV Sazanovich, S Hay

Photoinduced Electron Transfer from a 1,4,5,6-Tetrahydro Nicotinamide Adenine Dinucleotide Analogue to Oxidized Flavin in an Ene-Reductase Flavoenzyme

JOURNAL OF PHYSICAL CHEMISTRY LETTERS, 14, 3236-3242 (2023)

CJ Kulka-Peschke, A Schulz, C Lorent, Y Rippers, S Wahlefeld, J Preissler, C Schulz, C Wiemann, CCM Bernitzky, C Karafoulidi-Retsou, SLD Wrathall, B Procacci, H Matsuura, GM Greetham, C Teutloff, L Lauterbach, Y Higuchi, M Ishii, NT Hunt, O Lenz, I Zebger, M Horch

Reversible Glutamate Coordination to High-Valent Nickel Protects the Active Site of a [NiFe] Hydrogenase from Oxygen

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, 144, 17022-17032 (2022)

JB Eastwood, LA Hammarback, TJ Burden, IP Clark, M Towrie, A Robinson, IJS Fairlamb, JM Lynam

Understanding Precatalyst Activation and Speciation in Manganese-Catalyzed C-H Bond Functionalization Reactions

ORGANOMETALLICS, 42, 1766-1773 (2023)

J Dobkowski, IV Sazanovich, A Gorski, J Waluk

Energy Relaxation of Porphycene in Atomic and Molecular Cryogenic Matrices

PHOTOCHEM, 2, 299-307 (2022)

A Šrut, S Mai, IV Sazanovich, J Heyda, A Vlček, L González, S Zális

Nonadiabatic excited-state dynamics of ReCl in two different solvents

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, 24, 25864-25877 (2022)

PM Keane, C Zehe, FE Poynton, SA Bright, S Estayalo-Adrián, SJ Devereux, PM Donaldson, IV Sazanovich, M Towrie, SW Botchway, CJ Cardin, DC Williams, T Gunnlaugsson, C Long, JM Kelly, SJ Quinn

Time-resolved infra-red studies of photo-excited porphyrins in the presence of nucleic acids and in HeLa tumour cells: insights into binding site and electron transfer dynamics

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, 24, 27524-27531 (2022)

SLD Wrathall, B Procacci, M Horch, E Saxton, C Furlan, J Walton, Y Rippers, JN Blaza, GM Greetham, M Towrie, AW Parker, J Lynam, A Parkin, NT Hunt

Ultrafast 2D-IR spectroscopy of [NiFe] hydrogenase from E. coli reveals the role of the protein scaffold in controlling the active site environment

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, 24, 24767-24783 (2022)

LJ Dodd, C Lima, D Costa-Milan, AR Neale, B Saunders, B Zhang, A Sarua, R Goodacre, LJ Hardwick, M Kuball, T Hasell

Raman analysis of inverse vulcanised polymers

POLYMER CHEMISTRY, 14, 1369-1386 (2023)

SH Rutherford, GM Greetham, AW Parker, A Nordon, MJ Baker, NT Hunt

Measuring proteins in H₂O using 2D-IR spectroscopy: pre-processing steps and applications toward a protein library

THE JOURNAL OF CHEMICAL PHYSICS, 157, 205102 (2022)

Octopus

CR Barker, FK Lewns, G
Poologasundarampillai, AD Ward

In Situ Sol-Gel Synthesis of Unique Silica Structures Using Airborne Assembly: Implications for In-Air Reactive Manufacturing

ACS APPLIED NANO MATERIALS, 5, 11699-11706 (2022)

C Qiu, Y Odarchenko, Q Meng, S Xu, I Lezcano-Gonzalez, P Olalde-Velasco, F Maccherozzi, L Zanetti-Domingues, M Martin-Fernandez, AM Beale

Resolving the Effect of Oxygen Vacancies on Co Nanostructures Using Soft XAS/X-PEEM

ACS CATALYSIS, 12, 9125-9134 (2022)

M Forouhan, WF Lim, LC Zanetti Domingues, CJ Tynan, TC Roberts, B Malik, R Manzano, AA Speciale, R Ellerington, A Garcia-Guerra, P Fratta, G Sorarú, L Greensmith, M Pennuto, MJA Wood, C Rinaldi

AR cooperates with SMAD4 to maintain skeletal muscle homeostasis

ACTA NEUROPATHOLOGICA, 143, 713-731 (2022)

Á dos Santos, N Fili, Y Hari-Gupta, RE Gough, L Wang, M Martin-Fernandez, J Aaron, E Wait, T Chew, CP Toseland

Binding partners regulate unfolding of myosin VI to activate the molecular motor

BIOCHEMICAL JOURNAL, 479, 1409-1428 (2022)

BM Davis, SR Needham, S Iyer, SK Roberts, LCZ Domingues, M Martin-Fernandez, DJ Rolfe

Towards cloud-enabled fully automated end-to-end single molecule imaging

BIOPHYSICAL JOURNAL, 122, 278a (2023)

TA Eastwood, K Baker, BR Streater, N Allen, L Wang, SW Botchway, IR Brown, JR Hiscock, C Lennon, DP Mulvihill

High-yield vesicle-packaged recombinant protein production from E. coli

CELL REPORTS METHODS, 3, 100396 (2023)

HK Saeed, PJ Jarman, S Sreedharan, R Mowll, AJ Auty, AAP Chauvet, CGW Smythe, JB de la Serna, JA Thomas

From Chemotherapy to Phototherapy - Changing the Therapeutic Action of a Metallo-Intercalating Ru-II-Re-I Luminescent System by Switching its Sub-Cellular Location

CHEMISTRY: A EUROPEAN JOURNAL, 29, e202300617 (2023)

T Spatola Rossi, C Pain, SW Botchway, V Kriechbaumer

FRET-FLIM to Determine Protein Interactions and Membrane Topology of Enzyme Complexes

CURRENT PROTOCOLS, 2, e598 (2022)

RH Shepherd, MD King, AR Rennie, AD Ward, MM Frey, N Brough, J Eveson, S Del Vento, A Milsom, C Pfrang, MWA Skoda, RJL Welbourn

Measurement of gas-phase OH radical oxidation and film thickness of organic films at the air-water interface using material extracted from urban, remote and wood smoke aerosol

ENVIRONMENTAL SCIENCE: ATMOSPHERES, 2, 574-590 (2022)

SR Gardeta, EM García-Cuesta, G D'Agostino, B Soler Palacios, A Quijada-Freire, P Lucas, J Bernardino de la Serna, C Gonzalez-Riano, C Barbas, JM Rodríguez-Frade, M Mellado

Sphingomyelin Depletion Inhibits CXCR4 Dynamics and CXCL12-Mediated Directed Cell Migration in Human T Cells

FRONTIERS IN IMMUNOLOGY, 13, 925559 (2022)

AV Nunn, GW Guy, SW Botchway, JD Bell

SARS-CoV-2 and EBV; the cost of a second mitochondrial “whammy”?

IMMUNITY & AGEING, 18, 40 (2021)

ML Martin-Fernandez

A perspective of fluorescence microscopy for cellular structural biology with EGFR as witness

JOURNAL OF MICROSCOPY, 291, 73-91 (2022)

N Goonawardane, L Upstone, M Harris, IM Jones, MT Heise

Identification of Host Factors Differentially Induced by Clinically Diverse Strains of Tick-Borne Encephalitis Virus

JOURNAL OF VIROLOGY, 96, e00818-22 (2022)

DT Hinds, SA Belhout, PE Colavita, AD Ward, SJ Quinn

Microsphere-Supported Gold Nanoparticles for SERS detection of Malachite Green

MATERIALS ADVANCES, 4, 1481-1489 (2023)

Á dos Santos, RE Gough, L Wang, CP Toseland

Measuring Nuclear Organization of Proteins with STORM Imaging and Cluster Analysis

METHODS IN MOLECULAR BIOLOGY, 2476, 293-309 (2022)

Y Zhu, CW Koo, CK Cassidy, MC Spink, T Ni, LC Zanetti-Domingues, B Bateman, ML Martin-Fernandez, J Shen, Y Sheng, Y Song, Z Yang, AC Rosenzweig, P Zhang

Structure and activity of particulate methane monooxygenase arrays in methanotrophs

NATURE COMMUNICATIONS, 13, 5221 (2022)

E Clancy, S Ramadurai, SR Needham, K Baker, TA Eastwood, JA Weinstein, DP Mulvihill, SW Botchway

Fluorescence and phosphorescence lifetime imaging reveals a significant cell nuclear viscosity and refractive index changes upon DNA damage

SCIENTIFIC REPORTS, 13, 422 (2023)

MGR Guastamacchia, R Xue, K Madi, WTE Pitkeathly, PD Lee, SED Webb, SH Cartmell, PA Dalgarno

Instantaneous 4D micro-particle image velocimetry via multifocal microscopy

SCIENTIFIC REPORTS, 12, 18458 (2022)

V Jackson, J Hermann, CJ Tynan, DJ Rolfe, RA Corey, AL Duncan, M Noriega, A Chu, AC Kalli, EY Jones, MS Sansom, ML Martin-Fernandez, E Seiradake, M Chavent

The guidance and adhesion protein FLRT2 dimerizes in cis via dual small-X3-small transmembrane motifs

STRUCTURE, 30, 1354-136500000 (2022)

M Fray, D Clarke, M Martin-Fernandez, L Cuff, A Piotrowska, R Amos, R Thomas

Life science and healthcare

CRYOGENICS, CHAPTER 8, 1-35 (2022)

Individual Contributions and Collaborative Science

MO Schoelmerich, T Döppner, CH Allen, L Divol, M Oliver, D Haden, M Biener, J Crippen, J Delora-Ellefson, B Ferguson, DO Gericke, A Goldman, A Haid, C Heinbockel, D Kalantar, Z Karmioli, G Kemp, J Kroll, OL Landen, N Masters, Y Ping, C Spindloe, W Theobald, TG White

Developing a platform for Fresnel diffractive radiography with 1 μm spatial resolution at the National Ignition Facility

REVIEW OF SCIENTIFIC INSTRUMENTS, 94, 13104 (2023)

A Masood, T Iqbal, S Afsheen, KN Riaz, G Nabi, MI Khan, N Al-Zaqri, I Warad, H Ahmed

Theoretical and experimental analysis of La-doped CuO for their application as an efficient photocatalyst

BIOMASS CONVERSION AND BIOREFINERY (2023)

M Yousaf, T Iqbal, S Afsheen, KN Riaz, N Al-Zaqri, I Warad, H Ahmed, M Asghar, M Shafiq

Effect of TiN-Based Nanostructured Coatings on the Biocompatibility of NiTi Non-ferrous Metallic Alloy by Cathodic Arc Plasma Processing

JOURNAL OF INORGANIC AND ORGANOMETALLIC POLYMERS AND MATERIALS, 33, 1164-1176 (2023)

DR Rusby, GE Cochran, A Aghedo, F Albert, CD Armstrong, A Haid, AJ Kemp, SM Kerr, PM King, N Lemos, MJ Manuel, T Ma, AG MacPhee, I Pagano, A Pak, GG Scott, CW Siders, RA Simpson, M Sinclair, SC Wilks, GJ Williams, AJ Mackinnon

Enhanced electron acceleration by high-intensity lasers in extended preplasma in cone targets

PHYSICS OF PLASMAS, 30, 23103 (2023)

I Alonso et al.

Cold atoms in space: community workshop summary and proposed road-map

EPJ QUANTUM TECHNOLOGY, 9, 30 (2022)

C Arrowsmith, A Dyson, J Gudmundsson, R Bingham, G Gregori

Inductively-coupled plasma discharge for use in high-energy-density science experiments

JOURNAL OF INSTRUMENTATION, 18, P04008 (2023)

K Beyer, G Marocco, C Danson, R Bingham, G Gregori

Parametric co-linear axion photon instability

PHYSICS LETTERS B, 839, 137759 (2023)

JJ Lee, RT Ruskov, H Martin, S Hughes, MW von der Layen, RW Paddock, R Timmis, I Ouatu, QS Feng, S Howard, E Atonga, R Aboushelbaya, TD Arber, R Bingham, PA Norreys

Toward more robust ignition of inertial fusion targets

PHYSICS OF PLASMAS, 30, 22702 (2023)

TE Yap, B Davis, P Bloom, MF Cordeiro, E Normando

Glaucoma rose plots: redesigning circumpapillary progression analysis

INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE, 63, 4262 (2022)

TE Yap, BM Davis, PA Bloom, MF Cordeiro, EM Normando

Glaucoma Rose Plot Analysis Detecting Early Structural Progression Using Angular Histograms

OPHTHALMOLOGY GLAUCOMA, 5, 562-571 (2022)

PM Donaldson

Spectrophotometric Concentration Analysis Without Molar Absorption Coefficients by Two-Dimensional-Infrared and Fourier Transform Infrared Spectroscopy

ANALYTICAL CHEMISTRY, 94, 17988-17999 (2022)

S Maiti, S Mitra, CA Johnson, KC Gronborg, S Garrett-Roe, PM Donaldson

pH Jumps in a Protic Ionic Liquid Proceed by Vehicular Proton Transport

JOURNAL OF PHYSICAL CHEMISTRY LETTERS, 13, 8104-8110 (2022)

PM Donaldson, RF Howe, AP Hawkins, M Towrie, GM Greetham

Ultrafast 2D-IR spectroscopy of intensely optically scattering pelleted solid catalysts

THE JOURNAL OF CHEMICAL PHYSICS, 158, 114201 (2023)

A Zachariou, AP Hawkins, P Collier, RF Howe, SF Parker, D Lennon

Neutron scattering studies of the methanol-to-hydrocarbons reaction

CATALYSIS SCIENCE & TECHNOLOGY, 13, 1976-1990 (2023)

S Mosca, A Milani, C Castiglioni, V Hernández Jolín, C Meseguer, JT López Navarrete, C Zhao, K Sugiyasu, MC Ruiz Delgado

Raman Fingerprints of π -Electron Delocalization in Polythiophene-Based Insulated Molecular Wires

MACROMOLECULES, 55, 3458-3468 (2022)

M von der Leyen, J Holloway, Y Ma, P Campbell, R Aboushelbaya, Q Qian, A Antoine, M Balcazar, J Cardarelli, Q Feng, R Fitzgarrald, B Hou, G Kalinchenko, J Latham, A Maksimchuk, A McKelvey, J Nees, I Ouatu, R Paddock, B Spiers, A Thomas, R Timmis, K Krushelnick, P Norreys

Observation of Monoenergetic Electrons from Two-Pulse Ionization Injection in Quasilinear Laser Wakefields

PHYSICAL REVIEW LETTERS, 130, 105002 (2023)

M Oliver, CH Allen, L Divol, Z Karmioli, OL Landen, Y Ping, R Wallace, M Schölmerich, W Theobald, T Döppner, TG White

Diffraction enhanced imaging utilizing a laser produced x-ray source

REVIEW OF SCIENTIFIC INSTRUMENTS, 93, 93502 (2022)

S Mosca, K Sowoidnich, M Mehta, WH Skinner, B Gardner, F Palombo, N Stone, P Matousek

10-kHz Shifted-Excitation Raman Difference Spectroscopy with Charge-Shifting Charge-Coupled Device Read-Out for Effective Mitigation of Dynamic Interfering Backgrounds

APPLIED SPECTROSCOPY, 77, 569-582 (2023)

C Castiglioni, A Botteon, C Conti, M Tommasini, P Matousek

Non-Destructive Analysis of Concentration Profiles in Turbid Media using micro-spatially offset Raman spectroscopy: A physical model

JOURNAL OF RAMAN SPECTROSCOPY, 53, 1592-1603 (2022)

N Yin, AW Parker, P Matousek, HL Birch

Chemical Markers of Human Tendon Health Identified Using Raman Spectroscopy: Potential for In Vivo Assessment

INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, 23, 14854 (2022)

A Sahoo, PP Rajeev, S Krishnan

All-optical investigations of intense femtosecond pulse ionization in transparent dielectrics with applications

JOURNAL OF OPTICS, 24, 64004 (2022)

D Curcio, K Volckaert, D Kutnyakhov, SY Agustsson, K Bühlmann, F Pressacco, M Heber, S Dziarzhyski, Y Acremann, J Demsar, W Wurth, CE Sanders, P Hofmann

Tracking the surface atomic motion in a coherent phonon oscillation

PHYSICAL REVIEW B, 106, L201409 (2022)

A Chikina, G Bhattacharyya, D Curcio, CE Sanders, M Bianchi, N Lanatà, M Watson, C Cacho, M Bremholm, P Hofmann+D41

One-dimensional electronic states in a natural misfit structure

PHYSICAL REVIEW MATERIALS, 6, L092001 (2022)

S Ren, Y Shi, QY van den Berg, MF Kasim, H Chung, EV Fernandez-Tello, P Velarde, JS Wark, SM Vinko

Non-thermal evolution of dense plasmas driven by intense x-ray fields

COMMUNICATIONS PHYSICS, 6, 99 (2023)

S Azadi, ND Drummond, SM Vinko

Correlation energy of the paramagnetic electron gas at the thermodynamic limit

PHYSICAL REVIEW B, 107, L121105 (2023)

H Poole, D Cao, R Epstein, I Golovkin, T Walton, SX Hu, M Kasim, SM Vinko, JR Rygg, VN Goncharov, G Gregori, SP Regan

A case study of using x-ray Thomson scattering to diagnose the in-flight plasma conditions of DT cryogenic implosions

PHYSICS OF PLASMAS, 29, 72703 (2022)

J Krása, V Nassisi, T Burian, V Hajkova, J Chalupsky, S Jelinek, K Frantálová, M Krupka, Z Kuglerová, SK Singh, V Vozda, L Vysin, J Wild, M Smid, P Perez-Martin, X Pan, M Kühlman, J Pintor, J Cikhardt, M Dreimann, D Eckermann, F Rosenthal, SM Vinko, A Forte, T Gawne, T Campbell, S Ren, Y Shi, T Hutchinson, O Humphries, T Preston, M Makita, M Nakatsutsumi, A Koehler, M Harmand, S Toleikis, K Falk, L Juha, S Bajt, S Guizard

Ion emission from plasmas produced by femtosecond pulses of short-wavelength free-electron laser radiation focused on massive targets: an overview and comparison with long-wavelength laser ablation

PROCEEDINGS OF SPIE, 12578, 125780J (2023)

CR Barker, ML Poole, M Wilkinson, J Morison, A Wilson, G Little, EJ Stuckey, RJ Welbourn, AD Ward, MD King

Ultraviolet refractive index values of organic aerosol extracted from deciduous forestry, urban and marine environments

ENVIRONMENTAL SCIENCE: ATMOSPHERES, 3, 1008-1024 (2023)

Theses

Gemini

von dey Leyen, M.

Study of novel electron injection mechanisms for laser-wakefield accelerators

University of Oxford (2021)

Colgan, C.

Laser-Plasma Interactions as Tools for Studying Processes in Quantum Electrodynamics

Imperial College London (2022)

Backhouse, M.

Measurement and optimisation of beam quality from laser wakefield accelerators

Imperial College London (2023)

Odlozilik, B.

Biological effects of laser-accelerated proton bursts

Queen's University Belfast (2022)

Vulcan

Spiers, B.

Laser-accelerated ions and their applications

University of Oxford (2022)

Greenwood, B.

Studies of laser-driven ions and kilo-amp pulses in novel regimes

Queen's University Belfast (2022)

Davidson, Z.

Multi-Channel Optical Probing of High Power Laser Plasma Interactions

University of Strathclyde (2023)

Plasma Physics

Khan, M.

Advanced Direct Drive Shock Ignition Studies

University of York (2022)

Ultra

Saeed, K.

Mechanistic studies of solar fuel generation at electrode surfaces

University of Liverpool (2022)

Thornton, G.

Transient Absorption Spectroscopy Studies of Photochemical Reactions Initiated by Electron Transfer

University of Bristol (2022)

Stitch, M.

Advanced Spectroscopic Studies of Structurally Diverse DNA Systems Towards New Therapeutics and Diagnostics

University College Dublin (2023)

Gallop, N.

On the electronic and vibronic behaviour of organic and perovskite photovoltaics

Imperial College London (2021)

Howe, C.

Sequence Dependent RNA UNCG and DNA TNCG Tetraloop Hairpin Melting and Refolding Dynamics Using Temperature-Jump Infrared Spectroscopy

University of York (2023)

Cerpentier, F.

The use of spectroscopic, electrochemical and spectroelectrochemical techniques in the development of organic and inorganic photocatalysts for the production of solar fuels

Dublin City University (2023)

Wu, G.

The Ultrafast Excited States Dynamics of Pt(II) Organometallic Compounds

University of Sheffield (2023)

Appleby, M.

Ultrafast Dynamics of Cu(I) complexes for Light-Driven Antibacterial Water Purification

University of Sheffield (2023)

Shipp, J.

Transition metal complexes as chromophores and catalysts for artificial photosynthesis

University of Sheffield (2022)

Peralta-Arriaga, S.

Biomimetic materials for hydrogen production

University of Sheffield (2023)

Nicolaidou, E.

Conformational effects on the photophysics of thiophene-based materials

University of Cyprus (2022)

Placket, E.

Studies into the effects of hydrogen-bonding on excited state dynamics

University of Southampton (2023)

Octopus

Davies, G.

Sustainable Catalytic Science and Engineering through Hydrothermal Synthesis

University of Sheffield (2022)

Barber, E.

Non-Photochemical Laser-Induced Nucleation (NPLIN): an Experimental Investigation via Real-Time Imaging and Product Analysis

University of Edinburgh (2022)

Barker, C.

Investigation of the Optical Properties of Atmospheric Aerosol Using Ultraviolet Light and Dual-Optical Trapping

Royal Holloway University of London (2022)

Hanifi, M.

Development of an RNA-targeting CRISPR system for the treatment of type 1 myotonic dystrophy (DM1)

University of Oxford (2023)