

(08/10/22)

Opening Ceremony

Monday: 8:30am-8:45am - Ballroom 104

MONDAY ORAL PRESENTATIONS

PLN 1: Plenary 1

Monday, August 15, 2022
8:45am - 9:30am

Ballroom 104 PLENARY (1120)
Session Chair: V. Ara Apkarian

8:45am - 9:30am

Multiplexed and Sensitive Bioanalysis using SERS and SESORS

Karen Faulds¹, Duncan Graham¹, Hayleigh Kearns¹,
Anastasia Kapara¹, Roy Goodacre², Fay Nicolson¹

¹University of Strathclyde, United Kingdom; ²University of Liverpool

BIO-1: Biology and Biomedicine 1

Monday, August 15, 2022
10:00am - 11:50am
101B (207)

Session Chair: **Marcus T Cicerone**

10:00am - 10:20am

Raman spectroscopy for on-site medical diagnosis and therapy

Juergen Popp^{1,2}

¹Leibniz Institute of Photonic Technology, Germany; ²Friedrich-Schiller University, Institute of Physical Chemistry and Abbe School of Photonics, Germany

10:20am - 10:35am

Label-free characterization of rare-cell populations by high-throughput Raman flow cytometry

Kotaro Hiramatsu^{1,2}, Matthew Lindley¹, Koji Yamada³,
Kengo Suzuki³, Keisuke Goda^{1,4,5}

¹The University of Tokyo, Japan; ²Japan Science and Technology Agency, Japan; ³euglena Co., Ltd., Japan; ⁴Department of Bioengineering, University of California, USA; ⁵Institute of Technological Sciences, China

10:35am - 10:50am

Looking for significance of lipid droplets in vascular inflammation

Marta Zofia Pacia¹, Natalia Chorazy¹, Magdalena Sternak¹,
Stefan Chlopicki^{1,2}

¹Jagiellonian Centre for Experimental Therapeutics (JCET), Jagiellonian University, 14 Bobrzynskiego Str., 30-348 Krakow, Poland; ²Chair of Pharmacology, Jagiellonian University, 16 Grzegorzeczka Str., 31-531 Krakow, Poland

10:50am - 11:05am

Stratification of saliva of healthy, habitués and oral cancer subjects using Raman and FTIR spectroscopic approaches.

Arti Hole¹, Nikita Maheswari¹, Atul Deshmukh², ViKram Gota¹, Pankaj Chaturvedi³, Murali Krishna Chilakapati¹

¹TMC-ACTREC, India; ²Center for Interdisciplinary Research, DY Patil University, Navi Mumbai India; ³Tata Memorial Hospital, Parel India

11:05am - 11:20am

The Impact of Nanoparticle on Early Developing Mammalian Embryos Evaluated using Raman Spectroscopy (Prerecorded talk)

Micahella Sarmiento¹, Alexander Krivoharchenko², Susanna Manuel^{1,3}, Artashes Karmenyan¹, Elena Perevedentseva^{1,4},
Victor Natochenko², Yin-Jeh Tzeng⁵, Shih-Che Hung⁵, Hsin-Hou Chang⁵, C.-H. Lee³, Chia-Liang Cheng¹

¹Department of Physics, National Dong Hwa University, Taiwan; ²Semenov Institute of Chemical Physics, Russian Academy of Science, Moscow, Russian; ³Department of Life Science, National Dong Hwa University, Taiwan; ⁴Lebedev Institute of Physics, Russian Academy of Science, Moscow Russia; ⁵Department of Molecular Biology and Human Genetics, Tzu Chi University, Taiwan

11:20am - 11:35am

SERS-detection of osteogenic differentiation in stem cells cultured on simple gold nanoisland substrates

Adrianna Milewska^{1,2,3}, Olafur E. Sigurjonsson^{2,4}, Kristjan Leosson¹

¹Innovation Center Iceland, Reykjavik, Iceland; ²The Blood bank, Landspítali University Hospital, Reykjavik, Iceland; ³University of Iceland, School of Engineering and Natural Sciences, Reykjavik, Iceland; ⁴Reykjavik University, School of Science and Engineering, Reykjavik, Iceland

11:35am - 11:50am

In vivo monitoring tissue development in bone scaffolds using Raman spectroscopy

Anders Runge Walther¹, Nicholas Ditzel², Moustapha Kassem², Morten Østergaard Andersen¹, Martin Aage Barsøe Hedegaard¹

¹SDU Biotechnology, Department of Green Technology, University of Southern Denmark, Campusvej 55, 5230 Odense M, DK; ²Endocrine Research (KMEB), Department of Endocrinology, Odense University Hospital and University of Southern Denmark, J.B. Winslows Vej 25, 5000 Odense C, DK

MAT-1: Materials 1

Monday, August 15, 2022
10:00am - 11:50am
102B (156)
Session Chair: **Ado Jorio**

10:00am - 10:20am

High Pressure Raman study of Novel Carbon Materials

Bingbing LIU

Jilin University, China, People's Republic of

(08/10/22)

10:20am - 10:35am

Optical tweezing combined with confocal Raman microscopy detects the metastable amorphous intermediate responsible for laser-induced nucleation

Zhiyu Liao, Klaas Wynne

University of Glasgow, United Kingdom;

10:35am - 10:50am

Resonant Raman Scattering “Suppressed” in MoS₂ Fullerenes: A high Pressure and Low Temperature Study

Tsachi Livneh¹, Eran Sterer¹, Rita Rosentsveig²

¹NRCN, Israel; ²Weizmann Institute of Science, Israel

10:50am - 11:05am

High-pressure Raman spectra of L,L-dileucine crystals

Paulo Tarso Cavalcante Freire¹, Cristiano Balbino Silva¹, Gardenia Sousa Pinheiro², José Gadelha Silva Filho³, Francisco Ferreira Sousa⁴, Alexandre Magno Rodrigues Teixeira⁵

¹Universidade Federal do Ceará, Brazil; ²Universidade Federal do Piauí, Brazil; ³Universidade Federal do Maranhão, Brazil; ⁴Universidade Federal do Pará, Brazil; ⁵Universidade Estadual do Cariri, Brazil

11:05am - 11:20am

Raman Enhancement of Copper Phthalocyanine by Twisted Bilayer Graphenes Promoted by Excited State Charge Transfer

Sang-Yong Ju

Yonsei University, Korea, Republic of (South Korea)

11:20am – 11:35am

Monitoring the Unusual Deformation and Fracture in Nanoindented Gallium Telluride Multilayers Via Micro-Raman Spectroscopy

Yan Zhou^{1,2}, Dong Liu¹, Shi Zhou³, Yong Xie⁴, Mingming Gong⁵, Tao Wang⁵, Ping-Heng Tan², Martin Kuball¹

¹Center for Device Thermography and Reliability (CDTR), H. H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, United Kingdom.; ²State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing 100083, China.; ³University of Science and Technology of China, Hefei, 230026, P. R. China.; ⁴State Key Discipline Laboratory of Wide Band Gap Semiconductor Technology, School of Advanced Materials and Nanotechnology, Xidian University, Xi'an, 710071, P. R. China.; ⁵State Key Laboratory of Solidification Processing, School of Materials and Engineering, Northwestern Polytechnical University, Xi'an, 710072, P. R. China.

11:35am – 11:50am

Electrospun Membrane doped with Gold Nanorods for Surface-enhanced Raman Spectroscopy

Ziwei Wang¹, Andrea Lucotti¹, Luigi Brambilla¹, Matteo Tommasini¹, Chiara Bertarelli^{1,2}

¹Politecnico di Milano, Italy; ²Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia, Italy

NEWT-1: New Techniques 1

Monday, August 15, 2022

10:00am - 11:50am

102A (156)

Session Chair: **Ewan William Blanch**

10:00am - 10:20am

High-speed multicolor stimulated Raman microscopy
Yasuyuki Ozeki

The University of Tokyo, Japan

10:20am - 10:35am

Human brain meningioma detection using handheld VRR analyzer

Liang Zhang¹, Yan Zhou², Shengjia Zhang³, Binlin Wu⁴, Ke Zhu⁵, Cheng-hui Liu⁶, Robert R. Alfano⁶, Xingang Yu¹

¹The Department of Neurosurgery, PLA General Hospital, Beijing, 100039, China.; ²The Department of Neurosurgery, Air Force Medical Center, PLA, Beijing, 100142, China.; ³JRME Co., Ltd, Taizhou, Jiangsu, 225300, China.; ⁴Physics Department and CSCU Center for Nanotechnology, CSC, New Haven, CT 06515, USA; ⁵Institute of Physics, Chinese Academy of Sciences (CAS), PO Box 603, Beijing, 100190, China.; ⁶Institute for Ultrafast Spectroscopy and Lasers, Department of Physics, CCNY of CUNY, New York, NY 10031, USA

10:35am - 10:50am

Drop Coating Deposition Raman Spectroscopy as a Valuable Tool for Sensitive Detection of Biologically Important Molecules

Eva Kočíšová, Alžbeta Kůžňová, Mikuláš Příkryl, Marek Procházka, Anna Kuzminova, Ondřej Kylián

Charles University, Faculty of Mathematics and Physics, Czech Republic

10:50am - 11:05am

Non invasive depth determination of target in Ex vivo animal tissues using deep Raman Spectroscopy

Sara Mosca¹, Priyanka Dey², Tanveer A. Tabish², Francesca Palombo², Nick Stone², Pavel Matousek¹

¹Central Laser Facility, STFC, UKRI, UK; ²School of Physics, University of Exeter, UK

11:05am - 11:20am

On-Chip Raman Spectroscopy for the Characterisation of Oral Biofilms

Aileen Delaney¹, Deirdre Devine², David Head³, Jonathan Vernon², Stephen Evans¹

¹School of Physics and Astronomy, University of Leeds, UK; ²Division of Oral Biology, School of Dentistry, University of Leeds, UK; ³School of Computing, University of Leeds, UK

11:20am – 11:40am

Compact Fiber Lasers for Coherent Raman Scattering Microscopy and Spectroscopy

Khanh Kieu

University of Arizona, United States of America

(08/10/22)

NLTR-1: Non-linear and Time Resolved 1

Monday, August 15, 2022
10:00am - 11:50am
103A (144)

Session Chair: **Paul Morris Champion**

10:00am - 10:30am

Vibrational Spectroscopic Imaging to Unveil Hidden Signatures in Living Systems

Ji-Xin Ph.D.

USA, United States of America

10:30am - 10:50am

Tracking Structural Evolutions during Charge Separation Processes with Time-Resolved Impulsive Stimulated Raman Spectroscopy

Dongho Kim

Yonsei University, Korea, Republic of (South Korea)

10:50am - 11:05am

Interfacial self-assembly and water interactions of model bacterial ice nucleators probed by vibrational sum-frequency generation (SFG)

Fani Madzharova¹, Mikkel Bregnhøj¹, Adam Chatterley¹, Taner Drace², Lasse Sander Andersen Dreyer², Thomas Boesen², Tobias Weidner¹

¹Department of Chemistry, Aarhus University, Denmark; ²Department of Molecular Biology and Genetics, Aarhus University, Denmark

11:05am - 11:20am

Direct measurement of mode specific second order nonlinear susceptibility of collagen using vibrational sum frequency imaging

Khokan Roy¹, Yryx Yanet Luna Palacios², Israel Rocha Mendoza³, Eric Potma⁴

¹University of California Irvine, United States of America; ²CICESE, Carretera Ensenada-Tijuana, Ensenada, Mexico; ³CICESE, Carretera Ensenada-Tijuana, Ensenada, Mexico; ⁴University of California Irvine, United States of America

11:20am - 11:35am

Analysis of Microplastics in Consumer Goods via Femtosecond Stimulated Raman Microscopy

Carolin Borbeck, Francisco van Riel Neto, Peter Gilch

Heinrich Heine University Duesseldorf, Germany

SERS-1: Sers/Ters 1

Monday, August 15, 2022
10:00am - 11:50am
101A (207)

Session Chair: **Karen Faulds**

10:00am - 10:20am

Controlling Plasmonic Nanogap Chemistry to Tune Analyte Interactions

Hong Wei^{1,2}, Chloe Groome^{1,2}, Héctor Pascual Herrero^{1,2}, William J. Thrift¹, Yixin Huang¹, Allon I. Hochbaum^{1,2}, Regina Ragan^{1,2}

¹Department of Materials Science and Engineering, University California, Irvine, Irvine, California 92697, USA; ²Center for Complex and Active Materials, University California, Irvine, Irvine, California 92697, USA

10:20am - 10:35am

Chemically stable surface bound thiolate intermediates in surface enhanced Raman spectroscopy

Xiaobin Yao^{1,2}, Tanja Deckert-Gaudig^{1,2}, Volker Deckert^{1,2}, Christiane Höppener¹

¹Leibniz Institute of Photonic Technology, Germany; ²Friedrich Schiller University Jena, Institute of Physical Chemistry and Abbe Center of Photonics, Germany

10:35am - 10:50am

Surface-enhanced Raman spectroscopic study of nanoparticle catalysis

Wei Xie

Nankai University, China, People's Republic of

10:50am - 11:05am

Surface-enhanced hyper Raman scattering elucidates adsorption and plasmon-assisted dimer formation of aromatic thiols

Janina Kneipp, Fani Madzharova, Zhiyang Zhang, Zsuzsanna Heiner

Humboldt-Universität zu Berlin, Germany

11:05am - 11:20am

Impact of the Molecular Dimensions on the Sensitivities Using Engineered Gap Hotspots at Nanoscale Resolution for Plasmonics Based Biosensing.

Rishabh Rastogi^{1,2}, Pierre-Michel Adam², Sivashankar Krishnamoorthy¹

¹Luxembourg Institute of Science and Technology, Luxembourg; ²University of Technology of Troyes, France

11:20am - 11:35am

Waveguide-Coupled Plasmon Resonance for SERS

Shuping Xu, Yu Tian, Hailong Wang, Weiqing Xu

State Key Laboratory of Supramolecular Structure and Materials, Institute of Theoretical Chemistry, College of Chemistry, Jilin University

(08/10/22)

PLN 2: Plenary 2

Monday, August 15, 2022
1:45pm - 2:30pm
Ballroom 104 PLENARY (1120)
Session Chair: **Judy Kim**

1:45pm - 2:30pm

Low-wavenumber Raman spectroscopy in multilayer graphene and related van der Waals heterostructures

Ping-Heng Tan

Institute of Semiconductors, Chinese Academy of Sciences, China, People's Republic of

BIO-2: Biology and Biomedicine 2

Monday, August 15, 2022
2:40pm - 4:00pm
101B (207)
Session Chair: **Juergen Popp**

2:40pm - 3:00pm

TWO NEW APPROACHES TO BROADBAND STIMULATED RAMAN SCATTERING MICROSCOPY

Alejandro De la Cadena¹, **Andrea Ragni**², **Giuseppe Sciortino**², **Federico Vernuccio**¹, **Carlo M. Valensise**¹, **Marco Sampietro**², **Giorgio Ferrari**², **Giulio Cerullo**¹, **Dario Polli**¹

¹Physics department, Politecnico di Milano; ²Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano

3:00pm - 3:15pm

Decreasing volume, Increasing Impact: A History of Stimulated Raman Scattering Imaging

Richard Prince¹, **Eric Potma**²

¹East Tennessee State University, United States of America; ²University of California, Irvine, United States of America

3:15pm - 3:30pm

Raman spectroscopy in monitoring of adipogenesis and carotenoid delivery to adipocytes

Krzysztof Czamara¹, **Ewa Stanek**¹, **Joanna Janus**^{1,2}, **Aleksandra Kolodziejczyk**², **Aleksandra Orlef**², **Marta Z. Pacia**¹, **Aleksandra Wajda**², **Agnieszka Kaczor**^{1,2}

¹Jagiellonian Centre for Experimental Therapeutics (JCET), Jagiellonian University, Krakow, Poland; ²Faculty of Chemistry, Jagiellonian University, Krakow, Poland

3:30pm - 3:45pm

Understanding the Mechanism of Formation of Protein Fibrils for Preventing Neurodegenerative Disease

Anthony Dahdah, **Ewan Blanch**, **Nilamuni Hiranya De Silva**, **Subashani Maniam**

Rmit, Australia

3:45pm - 4:00pm

Surface Enhanced Resonance Raman spectro-electrochemistry of DyP type peroxidases

Smilja Todorovic

ITQB-NOVA Universidade Nova de Lisboa, Portugal

MAT-2: Materials 2

Monday, August 15, 2022
2:40pm - 4:00pm
102B (156)
Session Chair: **Klaas Wynne**

2:40pm - 3:10pm

Phonons engineering and phonon transport in low dimensional systems

Marta De Luca¹, **Claudia Fasolato**², **Milo Y. Swinkels**¹, **Iaria Zardo**¹

¹University of Basel, Switzerland; ²Università degli Studi di Perugia, Italy

3:10pm - 3:25pm

Ultranarrow lines in Raman spectra of quantum wells due to effective acoustic phonon selection by in-plane wave vector

Alexey Koudinov², **E.V. Borisov**³, **A.A. Shimko**³, **Yu.E. Kitaev**², **C. Trallero-Giner**⁴, **T. Wojtowicz**⁵, **G. Karczewski**⁵, **Serguei Goupalov**^{1,2}

¹Jackson State University, United States of America; ²Ioffe Institute, Russia; ³Saint-Petersburg State University, Russia; ⁴Havana University, Cuba; ⁵Institute of Physics, Polish Academy of Sciences, Poland

3:25pm - 3:40pm

Resonance Raman Scattering Study of Edge Phonons and Defects in Molybdenum Disulfide

Rafael Nunes Gontijo^{1,2,3}, **Andrej Gadelha**², **Orlando J. Silveira**², **Tianyi Zhang**³, **Kazunori Fujisawa**^{3,4}, **Ricardo W. Nunes**², **Ana Laura Elias**¹, **Marcos A. Pimenta**², **Ariete Righi**², **Mauricio Terrones**³, **Cristiano Fantini**²

¹Binghamton University, United States of America; ²Universidade Federal de Minas Gerais, Brazil; ³The Pennsylvania State University, United States of America; ⁴Shinshu University, Japan

3:40pm - 3:55pm

Janus Monolayer-Induced Abnormal Interlayer Coupling in 2D Heterostructures

Shengxi Huang¹, **Kunyan Zhang**¹, **Yunfan Guo**², **Jing Kong**²

¹The Pennsylvania State University, United States of America; ²Massachusetts Institute of Technology, United States of America

(08/10/22)

NEWT-2: New Techniques 2

Monday, August 15, 2022
2:40pm - 4:00pm
102A (156)

Session Chair: **Yasuyuki Ozeki**

2:40pm - 3:00pm

Combined Raman-Dielectrophoresis Method for Real Time Study: from Bacteria to Nanoplastic

Giulia Barzan^{1,2}, Alessio Sacco¹, Luisa Mandrile¹, Andrea Mario Giovannozzi¹, Chiara Portesi¹, Andrea Mario Rossi¹

¹Istituto Nazionale di Ricerca Metrologica, Italy; ²Politecnico di Torino

3:00pm - 3:15pm

Non-destructive investigation of diffusion of conservation products by micro-SORS

Alessandra Botteon^{1,2}, Claudia Conti¹, Marco Realini¹, Chiara Colombo¹, Pavel Matousek³, Chiara Castiglioni²

¹Institute of Heritage Science (ISPC), National Research Council (CNR); ²Politecnico di Milano, Department of Chemistry, Materials and Chemical Engineering Giulio Natta; ³Central Laser Facility, Research Complex at Harwell, STFC Rutherford Appleton Laboratory

3:15pm - 3:30pm

Characterization of Fibrotic and Epigenetic Alterations in Endometriosis

Lucas Becker^{1,2}, Tara Beyer¹, Sahra Steinmacher³, André Koch³, Simone Liebscher¹, Daniel Carvajal Berrio^{1,2}, Eva-Maria Brauchle^{1,2,4}, Sara Y Brucker³, Julia Marzi^{1,2,4}, Martin Weiss², Katja Schenke-Layland^{1,2,4,5}

¹Institute of Biomedical Engineering, Department for Medical Technologies and Regenerative Medicine, Eberhard Karls University Tuebingen, 72076 Tuebingen, Germany; ²Cluster of Excellence iFIT (EXC 2180) Image-Guided and Functionally Instructed Tumor Therapies, Eberhard Karls University Tuebingen, 72076 Tuebingen, Germany; ³Department of Women's Health, Research Institute for Women's Health, Eberhard Karls University Tuebingen, 72076 Tuebingen, Germany; ⁴NMI Natural and Medical Sciences Institute at the University of Tuebingen, 72770 Reutlingen, Germany; ⁵Department of Medicine, Division of Cardiovascular Medicine, University of California, Los Angeles, CA 90095, United States

3:30pm - 3:45pm

Raman Analysis of Nanoparticles in Reflection Mode Nanoaperture Optical Tweezers

Behnam Khosravi, Reuven Gordon

University of Victoria, Canada

3:45pm - 4:00pm

AI Powered Drug Classification by Mobile Phone based Raman Spectroscopy

Un Jeong Kim¹, Suyeon Lee¹, Hyocheol Kim¹, Hyungbin Son², Hyuck Choo¹

¹Samsung Advanced Institute of Technology, Korea, Republic of (South Korea); ²Chung-Ang University, Korea, Republic of (South Korea)

SERS-2: SERS/TERS: Application to Biological Systems 2

Monday, August 15, 2022
2:40pm - 4:00pm
101A (207)

Session Chair: **Kamilla Malek**

2:40pm - 2:55pm

Nanoscale Structural Characterization of Biological Systems Using Combined Nano-Raman and Nano-Infrared Spectroscopies

Dmitry Kurouski

Texas A&M University, United States of America

2:55pm - 3:10pm

Transforming Treatment of Patients with Drug Induced Liver Injury using SERS based Lateral Flow Testing

Sian Sloan-Dennison¹, Benjamin Clark¹, Kathleen Scullion², James Dear², Dieter Bingemann³, Paul Fineran², David Creasey³, Cicely Rathmell³, Karen Faulds¹, Duncan Graham¹

¹University of Strathclyde, United Kingdom; ²University of Edinburgh, United Kingdom; ³Wasatch Photonics, USA

3:10pm - 3:25pm

Fabrication of SERS active substrates through Langmuir-Blodgett and self assembly techniques for screening human cancer cell lines

Joydeep Chowdhury

Jadavpur University, India

3:25pm - 3:40pm

SERS, a Single-molecule and Label-free Technique for Drug Discovery

Lamvaa M. Almhadi^{1,2}, Vibhav A. Valsangkar^{1,2}, Ken Halvorsen², Qiang Zhang¹, Jia Sheng^{1,2}, Igor K. Lednev^{1,2}

¹University at Albany, SUNY, United States of America; ²RNA Institute, College of Arts and Science, University at Albany, SUNY

3:40pm - 3:55pm

Detection of DNA Bases and Monitoring ssDNA Hybridization by Noble Metal Nanoparticles Decorated Graphene Nanosheets as Ultrasensitive G-SERS Platforms

Sanju Gupta

Penn State University, United States of America

(08/10/22)

TH-1: Fundamentals and Theory 1

Monday, August 15, 2022
2:40pm - 4:00pm
103A (144)

Session Chair: **Ludger Wirtz**

2:40pm - 3:00pm

Strong field Raman spectroscopy; tracking electronic coherences using high harmonics

Konstantin Dorfman

East China Normal University, China, People's Republic of

3:00pm - 3:20pm

Entangled light in Raman excitation, two-photon absorption and black hole radiation

Marlan Scully, Zhenhuan Yi

Texas A&M University, United States of America

3:20pm - 3:35pm

Theory for photoluminescent background in SERS experiments

Evgeny S. Andrianov^{1,2}, Vladislav Yu. Shishkov^{1,2}, Alexander A. Pukhov^{1,2,3}, Alexey P. Vinogradov^{1,2,3}, Alexander A. Lisiansky^{4,5}

¹Dukhov Research Institute of Automatics (VNIIA), Russian Federation; ²Moscow Institute of Physics and Technology (MIPT), Russian Federation; ³Institute for Theoretical and Applied Electromagnetics, Russian Federation; ⁴Department of Physics, Queens College of the City University of New York, USA; ⁵The Graduate Center of the City University of New York, USA

BIO-3: Biology and Biomedicine 3

Monday, August 15, 2022
4:30pm - 6:00pm
101B (207)

Session Chair: **Lawrence Ziegler**

4:30pm - 5:00pm

Towards Simple, Real-Time Spectroscopic Coherent Raman Imaging of Biology

Marcus T Cicerone, Xavier P Audier, Wei-Wen Chen, Ronit Sharon-Frilling, Jessica Zahn

Georgia Institute of Technology, United States of America

5:00pm - 5:15pm

Multimodal coherent Raman and multiphoton nonlinear optical microscopy to monitor the risk of cancer relapse in human tumors after therapy

Arianna Bresci¹, Francesco Manetti¹, Silvia Ghislanzoni², Federico Vernuccio¹, Benedetta Talone¹, Chiara Ceconello¹, Alejandro De la Cadena¹, Renzo Vanna³, Italia Bongarzone², Giulio Cerullo^{1,3}, Dario Polli^{1,3}

¹Politecnico di Milano, Italy; ²IRCCS Istituto Nazionale dei Tumori Foundation; ³CNR Institute for photonics and nanotechnologies (IFN)

5:15pm - 5:30pm

Development of Raman Spectroscopic analysis techniques to assess quality biomarkers in fish

Jeremy D Landry, Peter J Torley, Ewan W Blanch
RMIT University, Australia

5:30pm - 5:45pm

Gut microbiota and adipose tissue: another pieces in the obesity puzzle

Zuzanna Majka^{1,2}, Krzysztof Czamara¹, Joanna Janus², Ewa Stanek¹, Agnieszka Krawczyk³, Dominika Salamon³, Tomasz Gosiewski³, Agnieszka Kaczor^{1,2}

¹Jagiellonian Centre for Experimental Therapeutics (JCET), Jagiellonian University, Krakow, Poland; ²Faculty of Chemistry, Jagiellonian University, Krakow, Poland; ³Department of Molecular Medical Microbiology, Faculty of Medicine, Jagiellonian University Medical College, Krakow, Poland

MAT-3: Materials 3

Monday, August 15, 2022
4:30pm - 6:00pm
102B (156)

Session Chair: **Janina Maultzsch**

4:30pm - 5:00pm

Micro- versus nano-Raman spectroscopy in two-dimensional systems

Ado Jorio^{1,2}, Cassiano Rabelo², Hudson Miranda², Thiago L. Vasconcelos³, Luiz Gustavo Cançado^{1,2}

¹Physics Department, UFMG, Brazil; ²Electrical Engineering, UFMG, Brazil; ³Inmetro, Brazil

5:00pm - 5:15pm

Solving the Computational Puzzle: Towards a Pragmatic Pathway for Modeling Low-Energy Vibrational Modes of Pharmaceutical Crystals

Karlis Berzins¹, Joshua J. Sutton¹, Sara J. Fraser-Miller¹, Thomas Rades^{2,3}, Timothy M. Korter⁴, Keith C. Gordon¹

¹University of Otago, New Zealand; ²University of Copenhagen, Denmark; ³Åbo Akademi University, Finland; ⁴Syracuse University, USA

5:15pm - 5:30pm

Electronic Raman scattering in layered NiPS3

Xi Ling, Hikari Kitadai

Boston University, United States of America

5:45pm - 6:00pm

Quantitative Raman Imaging for Crystal Orientation Analysis

Oleksii Hchenko^{1,2}, Yuriy Pilgun^{2,3}, Florian Bachmann⁴, Anja Boisen¹

¹Technical University of Denmark, Denmark; ²Lightnovo ApS, Birkerød, Denmark; ³Faculty of Radio Physics, Electronics and Computer Systems, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; ⁴Xnovo Technology ApS, Koge, Denmark

(08/10/22)

NEWT-3: New Techniques 3

Monday, August 15, 2022
4:30pm - 6:00pm
102A (156)

Session Chair: **Andrea Mario Rossi**

4:30pm - 5:00pm

Structural Analysis of Complex Biomolecules Using Raman Optical Activity (ROA)

Ewan William Blanch
RMIT University, Australia

5:00pm - 5:15pm

Frontiers of synchrotron-based UV Resonance Raman spectroscopy for exploring biological macromolecules

Barbara Rossi
Elettra Sincrotrone Trieste, Italy

5:15pm - 5:30pm

Light Sheet Integral Field Raman Microspectroscopy

Alejandra Zegarra-Valverde¹, Walter Hauswald¹, Rainer Heintzmann^{1,2}

¹Leibniz Institute of Photonic Technology, Jena, Germany; ²Institute of Physical Chemistry, Friedrich Schiller University Jena, Germany

5:30pm - 5:45pm

Shifted Excitation Raman Difference Spectroscopy as a Promising Tool for Precision Agriculture

Kay Sowoidnich, Martin Maiwald, Bernd Sumpf
Ferdinand-Braun-Institut (FBH), Leibniz-Institut für Höchstfrequenztechnik, Germany

NLTR-2: Non-linear and Time Resolved: Novel Developments for Biology 2

Monday, August 15, 2022
4:30pm - 6:00pm
103A (144)

Session Chair: **Stephen R. Meech**

4:30pm - 4:45pm

Discrimination of Metastatic State in Prostate Cancer Cells by Identifying Metabolic Changes with Coherent Raman Imaging and Machine Learning

Jessica Lynn Zahn, Marcus T Cicerone, Ronit Sharon-Friling, Wei-Wen Chen, Rajas Poorna
Georgia Institute of Technology, United States of America

4:45pm - 5:00pm

Label-free stimulated Raman scattering imaging reveals silicone breast implant material in tissue

Ludo van Haasterecht, Liron Zada, Robert W. Schmidt, Freek Ariese

LaserLab Amsterdam, Department of Physics and Astronomy, Faculty of Sciences Vrije Universiteit Amsterdam, The Netherlands

5:00pm - 5:15pm

DO-SRS Multiplex Super Resolution Metabolic Imaging in Aging and Diseases

Lingyan Shi, Yajuan Li, Anthony Fung, Wenxu Zhang, Hongje Jang

UCSD, United States of America

5:15pm - 5:30pm

Coherent Raman scattering-guided real-time precision molecular control

Matthew Clark, Gil Gonzalez, Yiyang Luo, Mark Carlsen, Greg Eakins, Mingji Dai, Chi Zhang

Purdue University, United States of America

5:30pm - 5:45pm

A fingerprint of amyloid plaques in a bitransgenic animal model of Alzheimer's disease obtained by hyperspectral Raman data

Emerson Fonseca¹, Lucas Lafeta¹, Renan Cunha¹, Hudson Miranda², João Campos¹, Helton Medeiros³, Marco Romano-Silva⁴, Raigna Silva^{1,5}, Alexandre Barbosa^{1,6}, Rafael Vieira⁷, Ado Jorio Jorio¹, Leandro Malard¹

¹Universidade Federal de Minas Gerais, Brazil; ²Programa de Pós-Graduação em Engenharia Elétrica, UFMG, Belo Horizonte, MG 31270-901, Brazil; ³Divisão de Metrologia de Materiais, Inmetro, 25250-020, Duque de Caxias, RJ, Brazil; ⁴Departamento de Saúde Mental-Faculdade de Medicina, UFMG, Belo Horizonte, MG 30130-100, Brazil; ⁵Instituto de Física, UFU, Uberlândia, MG 38400-920, Brazil; ⁶Departamento de Oftalmologia, Faculdade de Medicina, HC/UFMG, Belo Horizonte, MG 30130-100, Brazil; ⁷Departamento de Bioquímica e Imunologia, UFMG, CEP 30161-70 Belo Horizonte, Minas Gerais, Brazil

SERS-3: Sers/Ters 3

Monday, August 15, 2022
4:30pm - 6:00pm
101A (207)

Session Chair: **Regina Ragan**

4:30pm - 5:00pm

Novel SERS and PIERS substrates for designing bioanalytical platforms

Kamilla Malek
Jagiellonian University in Krakow, Poland

(08/10/22)

5:00pm - 5:15pm

Surface Modification of Plasmonic nanostructures: Enabling SERS Detection of Weakly Interacting Analytes

Li-Lin Tay, Shawn Poirier, Ali Ghaemi, John Hulse
National Research Council Canada, Canada

5:15pm - 5:30pm

Graphene Oxide – Silver Nanoparticles Composites for SERS Detection of 4-aminothiophenol

Mateusz Kasztelan^{1,2}, Anna Studzińska¹, Grażyna Zofia Żukowska², Barbara Palys¹

¹University of Warsaw, Poland; ²Warsaw University of Technology

5:30pm - 5:45pm

Porous carbon nanowires for metal-free SERS

Kotaro Hiramatsu¹, Nan Chen², Ting-Hui Xiao¹, Zhenyi Luo¹, Yasutaka Kitahama¹, Naoki Kishimoto³, Tamitake Itoh⁴, Zhenzhou Cheng⁵, Keisuke Goda^{1,6,7}

¹University of Tokyo; ²Beijing Institute of Technology; ³Tohoku University; ⁴National Institute of Advanced Industrial Science and Technology; ⁵Tianjin University; ⁶Wuhan University; ⁷University of California, Los Angeles

TUESDAY ORAL PRESENTATIONS

PLN 3: Plenary 3

Tuesday, August 16, 2022
8:45am - 9:30am
Ballroom 104 PLENARY (1120)
Session Chair: **Giulio Cerullo**

8:45am - 9:30am

Spatially Offset Raman Spectroscopy (SORS)

Pavel Matousek
STFC Rutherford Appleton Laboratory, United Kingdom

BIO-4: Biology and Biomedicine 4

Tuesday, August 16, 2022
10:00am - 11:50am
101B (207)
Session Chair: **Nick Stone**

10:00am - 10:20am

Detecting drugs in cells and tissues by Raman/SERS microscopy

Katsumasa Fujita
Osaka University, Japan

10:20am - 10:35am

Monitoring of metabolic alterations in tumor microenvironment by surface-enhanced Raman scattering

Javier Plou^{1,2}, Isabel Garcia¹, Mathias Charconnet¹, Arkaitz Carracedo^{2,3}, Luis Liz-Marzan^{2,3}

¹CIC BiomaGUNE, Spain; ²CIC BiomaGUNE, Spain; ³Ikerbasque, Basque Foundation for Science, 48013 Bilbao, Spain

10:35am - 10:50am

Spontaneous and Stimulated Raman Scattering of amyloid-beta plaques in post-mortem human AD brain tissue

BENjamin Lochocki¹, Freek Ariese¹, Jeroen J. M. Hoozemans², Johannes F. de Boer¹

¹VU Amsterdam; ²Amsterdam UMC

10:50am - 11:05am

Single-cell Raman coupled with stable isotope labelling to study antibiotic resistance and its spread

Li Cui, Hong-Zhe Li, Kai Yang, Yong-Guan Zhu
Institute of Urban Environment, Chinese Academy of Sciences, P. R. China

11:05am - 11:20am

Effects of sulfation and the environment on the structure of chondroitin sulfate studied via Raman optical activity

Vaclav Profant¹, Christian Johannessen², Ewan Blanch³, Petr Bour⁴, Vladimír Baumruk¹

¹Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; ²Department of Chemistry, University of Antwerp, Belgium; ³School of Science, RMIT University, Melbourne, Australia; ⁴Institute of Organic Chemistry and Biochemistry, Academy of Sciences, Prague, Czech Republic

11:20am - 11:35am

Using Raman Spectroscopy to Differentiate Between Various Genospecies of *Borrelia* in Mouse Blood

Nicolas King Goff, Tianyi Dou, Artem Rogovskyy, Dmitry Kourouski
Texas A&M University, United States of America

11:35am - 11:50am

Structure-function correlation studies of a non-canonical heme oxygenase from *Mycobacterium tuberculosis*

Piotr J. Mak, Samuel N. Snyder
Saint Louis University, United States of America

(08/10/22)

MAT-4: Materials 4

Tuesday, August 16, 2022
10:00am - 11:50am
102B (156)

Session Chair: **Angela R. Hight Walker**

10:00am - 10:20am

Raman Spectroscopy Studies of 1D Systems: Carbon and Sulfur Chains

Antonio G Souza Filho

Universidade Federal do Ceará, Brazil

10:20am - 10:40am

Electron-phonon processes in twisted bilayer graphene and low symmetry 2D materials investigated by resonance and polarized Raman spectroscopy

Marcos Pimenta

UFMG, Brazil

10:40am - 10:55am

Probing lattice dynamics and electronic resonances in hexagonal Ge and SixGe1-x alloys in nanowires using Raman spectroscopy

Diego de Matteis¹, Marta De Luca¹, Elham Fadaly², Marcel Verheijen², Miquel López-Suárez³, Riccardo Rurali³, Erik Bakkers², Ilaria Zardo¹

¹Departement Physik, Universität Basel, 4056 Basel, Switzerland; ²Department of Applied Physics, Eindhoven University of Technology, 5612AP Eindhoven, The Netherlands; ³Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain

10:55am - 11:10am

Raman scattering obtained from laser excitation of MAPbI3 single crystal

Hagit Aviv, Tal Ben-Uliel, Yaakov R. Tischler

Bar Ilan University, Israel

11:10am - 11:25am

Raman scattering study of phase transition in methyl ammonium lead halide perovskite single crystals

Trang Thi Thu Nguyen¹, Yejin Kim¹, Hye Ri Jung¹, William Jo¹, Won Seok Woo², Chang Won Ahn², Shinuk Cho², Ill Won Kim², Maryam Bari³, Zuo-Guang Ye³, Seokhyun Yoon¹

¹Ewha womans university, Seoul, Republic of (South Korea); ²University of Ulsan, Ulsan, Korea, Republic of (South Korea); ³Simon Fraser University, Burnaby, Canada

NEWT-4: New Techniques 4

Tuesday, August 16, 2022
10:00am - 11:50am
102A (156)

Session Chair: **Reuven Gordon**

10:00am - 10:20am

Arrayed Nanoplasmonic Sensors and Actuators

Wei-Chuan Shih

University of Houston, United States of America

10:20am - 10:35am

Hyperspectral and chemically-selective 2D and 3D imaging in mid-infrared

Dave Knez, Eric Potma, Dmitry Fishman

UC Irvine, United States of America

10:35am - 10:50am

A Raman filter-based system, operating in ambient light through lock-in amplification for real-time, accurate assessment of disease markers

Hao Guo¹, Alexey Tikhomirov¹, Alexandria Mitchell¹, Ian Alwayn², Haishan Zeng³, Kevin Hewitt¹

¹Dalhousie University, Halifax, Nova Scotia, Canada; ²Leiden University Medical Centre, Leiden, Netherlands; ³BC Cancer Research Centre, Vancouver, BC, Canada

10:50am - 11:05am

Exploring new ways of studying photodegradation by means of Raman spectroscopy inside a liquid core waveguide exposure cell

Iris Groeneveld¹, Govert W. Somsen¹, Maarten R. van Bommel², Freek Ariese³

¹Vrije Universiteit Amsterdam, Netherlands, The; ²University of Amsterdam, Netherlands, The; ³LaserLab, Vrije Universiteit Amsterdam, Netherlands, The

11:05am - 11:20am

Monitoring phytoplankton population using NIR Raman spectroscopy, excitation/emission spectroscopy and chemometric analysis

Nina Igorevna Novikova

The University of Auckland, New Zealand

11:20am - 11:35am

Raman Spectroscopy for Detecting Traces of Explosives at Security Checkpoints

Lisa B. Dreier, Anja Köhntopp, Christoph Kölbl, Frank Duschek

German Aerospace Center, Germany

(08/10/22)

11:35am - 11:50am

Fluorescence guided photothermal infrared microscopy at single-cell resolution

Yeran Bai¹, Xinran Tian¹, Andrew Longhini¹, Zhongyue Guo², Ji-Xin Cheng², Kenneth Kosik¹, Craig Prater³

¹Neuroscience Research Institute, University of California Santa Barbara, Santa Barbara CA 93105, USA; ²Biomedical Engineering, Boston University, Boston, MA 02215; ³Photothermal Spectroscopy Corporation, Santa Barbara, CA 93101, USA

NLTR-3: Non-linear and Time Resolved 3

Tuesday, August 16, 2022

10:00am - 11:50am

103A (144)

Session Chair: **Tahei Tahara**

10:00am - 10:20am

Raman Vibrational Coherence Spectroscopy and Proton Tunneling in Green Fluorescent Protein

Paul Morris Champion

Northeastern University, United States of America

10:20am - 10:40am

Accessing excited potential energy surfaces by Raman excitation profiles measured via time-domain Raman spectroscopy

Batignani Giovanni^{1,2}, Sansone Carlotta¹, Mai Emanuele¹, Ferrante Carino^{2,3}, Fumero Giuseppe¹, Mukamel Shaul⁴, Scopigno Tullio^{1,2,5}

¹Dipartimento di Fisica, Università di Roma "La Sapienza", Roma I-00185, Italy; ²Istituto Italiano di Tecnologia, Center for Life Nano Science @Sapienza, Roma I-00161, Italy; ³ENEA, FSN-FISS-SNI Laboratory, Casaccia R.C. Via Anguillarese 301, 00123 Roma, Italy; ⁴Department of Chemistry, University of California, Irvine, California 92623, United States; ⁵Istituto Italiano di Tecnologia, Graphene Labs, Via Morego 30, I-16163 Genova, Italy

10:40am - 10:55am

Transient Raman study of excited state dynamics of 1,9'-bianthryl

Palas Roy¹, Faisal Al-Kahtani¹, Andrew N. Cammidge¹, Stephen R. Meech¹

¹School of Chemistry, University of East Anglia, Norwich Research Park, Norwich NR4 7TJ, U.K.

10:55am - 11:10am

Low-Wavenumber Fourier-Transform Impulsive Stimulated Raman Spectrometer with Single Femtosecond Oscillator

Mauro Falconieri¹, Michele Marrocco¹, Serena Gagliardi¹, Flaminia Rondino¹, Yejun Wang², Waruna Kulatilaka², Eugenio DelRe³, Fabrizio Di Mei³, Ludovica Falsi³

¹ENEA, Italy; ²Texas A&M University, USA; ³Università "Sapienza", Italy

11:10am - 11:25am

Liquid-Liquid Phase Separation in Synthetic Polymers via Femtosecond Stimulated Raman Microscopy

Francisco van Riel Neto, Carolyn Borbeck, Peter Gilch

Heinrich Heine University, Germany

SERS-4: Sers/Ters 4

Tuesday, August 16, 2022

10:00am - 11:50am

101A (207)

Session Chair: **Bin Ren**

10:00am - 10:20am

Tip-enhanced Raman scattering - high resolution and beyond

Volker Deckert^{1,2,3}, Christiane Höppener²

¹University of Jena, Germany; ²Leibniz Institute of Photonic Technology, Jena, Germany; ³IQSE, Texas A&M University, College Station, USA

10:20am - 10:35am

Highly sensitive SERS sensor based on Ag nanoparticles for heavy metals detection in water

Verónica Montes-García¹, Sara Gullace^{1,2}, Giuseppe Calogero³, Stefano Casalini^{1,4}, Paolo Samori¹

¹Institut de Science et d'Ingénierie Supramoléculaires (I.S.I.S.) Université de Strasbourg & CNRS, 8, allée Gaspard Monge, Strasbourg (France); ²Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, V.le F. Stagno d'Alcontres 31, 98166, Messina (Italy); ³IPCF-CNR, Istituto per i Processi Chimico-Fisici, V.le F. Stagno d'Alcontres 37, 98158, Messina (Italy); ⁴Università degli Studi di Padova, Dipartimento di Scienze Chimiche, via Marzolo 1, 35131 Padova (Italy) (current address)

10:35am - 10:50am

Nanoscale Chemical Imaging of Supported Lipid Monolayers using Tip-Enhanced Raman Spectroscopy

Yashashwa Pandey¹, Naresh Kumar¹, Guillaume Goubert², Renato Zenobi¹

¹ETH Zurich, Switzerland; ²Université du Québec à Montréal

10:50am - 11:05am

Low-Level Organic Detection on Icy Worlds using the Compact Integrated Raman Spectrometer (CIRS)

James Lambert, Tuan Vu, Mark Anderson

Jet Propulsion Laboratory, United States of America

(08/10/22)

11:05am - 11:20am

Observation of nano-confinement-induced ice nucleation: Ice-vii to ice-ih transition

Jonggeun Hwang¹, Dongha Shin^{1,2}, Xingcai Zhang^{3,4}, Wonho Jhe¹

¹Center for 0D Nanofluidics, Institute of Applied Physics, Department of Physics and Astronomy, Seoul National University, Seoul 08826, Korea; ²Department of Chemistry and Chemical Engineering, Inha University, Incheon 22212, Korea; ³John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 02138, USA; ⁴School of Engineering, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA

PLN 4: Plenary 4

Tuesday, August 16, 2022

2:25pm - 3:10pm

Ballroom 104 PLENARY (1120)

Session Chair: **Eric Olaf Potma**

2:25pm - 3:10pm

Structural and optical properties of 2D van-der-Waals materials

Janina Maultzsch

Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

PD-1: Post Deadline 1

Tuesday, August 16, 2022

3:20pm - 3:50pm

101A (207)

Session Chair: **Dan Fu**

Beyond the Tunneling Limit of Quantum Plasmonics in Tip-Induced GO-Enhanced Raman Spectroscopy

Dmitri Voronine

University of South Florida, United States of America

PD-2: Post Deadline 2

Tuesday, August 16, 2022

3:20pm - 3:50pm

101B (207)

Session Chair: **Giovanni Batignani**

Functional stimulated Raman imaging for complex sub-cellular analysis

Lu Wei

California Institute of Technology, United States of America

BIO-5: Biology and Biomedicine 5

Tuesday, August 16, 2022

4:30pm - 6:00pm

101B (207)

Session Chair: **Karen Faulds**

4:30pm - 5:00pm

Clinical Raman spectroscopy - a potential panacea (or just a pretty good compliment to current clinical diagnostics)?

Nick Stone^{1,2,3}

¹University of Exeter; ²Gloucestershire Hospitals NHS Foundation Trust; ³Royal Devon and Exeter NHS Foundation Trust

5:00pm - 5:15pm

Racing to cross the "Valley of Death" - a comparative Raman and IR study of blood serum for clinical diagnosis

Deb Roy¹, Edward Duckworth¹, Matt Mortimer², Murali Krishna³, Venkat Kanamarlapudi⁴, Bilal Al-Sarireh²

¹Department of Chemistry, Swansea University, Singleton Park, SA2 8PP; ²Department of Surgery, Morrision Hospital, ABM University Health Board, Swansea.SA6 6NL; ³Advanced Center for Treatment, Research and Education in Cancer (ACTREC), Tata Memorial Center (TMC), Navi Mumbai - 410210, INDIA; ⁴Swansea Medical School, Swansea University, Singleton Park, SA2 8PP

5:15pm - 5:30pm

In vivo monitoring disease progression in rodent models of inflammatory arthritis using fibre-optic Raman spectroscopy

Anders Runge Walther¹, Elzbieta Stepula², Nicholas Ditzel³, Moustapha Kassem³, Mads Bergholt², Martin Aage Barsøe Hedegaard¹

¹University of Southern Denmark, DK; ²King's College London, UK; ³Odense University Hospital, SDU, DK

MAT-5: Materials 5

Tuesday, August 16, 2022

4:30pm - 6:00pm

102B (156)

Session Chair: **Marcos Pimenta**

4:30pm - 5:00pm

Magneto-Raman Spectroscopy to Identify Spin Structure in Low-Dimensional Quantum Materials

Angela R. Hight Walker

Physical Measurement Laboratory, National Institute of Standards and Technology (NIST), Gaithersburg, Maryland 20899, USA

(08/10/22)

5:00pm - 5:15pm

Distinct Magneto-Raman Signatures of Spin-Flip Phase Transitions in 2D Magnet CrI3

Amber McCreary¹, Thuc Mai^{1,2}, Franz Utermohlen², Jeffrey Simpson^{1,3}, Kevin Garrity¹, Xiaozhou Feng², Dmitry Shcherbakov², Yanglin Zhu⁴, Jin Hu⁵, Daniel Weber², Kenji Watanabe⁶, Takashi Taniguchi⁶, Joshua Goldberger², Zhiqiang Mao⁴, Chun Ning Lau², Yuanming Lu², Nandini Trivedi², Rolando Valdes Aguilar², Angela Hight Walker¹

¹National Institute of Standards and Technology, United States of America; ²The Ohio State University, United States of America; ³Towson University, United States of America; ⁴The Pennsylvania State University, United States of America; ⁵The University of Arkansas, United States of America; ⁶National Institute for Materials Science, Japan

5:15pm - 5:30pm

Theoretical Design, Synthesis and Characterization of Novel Thermo-chromic Materials

Bernardo Albuquerque Nogueira^{1,2}, Alberto Milani², Rita Cardoso¹, José António Paixão³, Chiara Castiglioni², Rui Fausto¹

¹CQC, Department of Chemistry, University of Coimbra, Portugal; ²CMIC, Dipartimento di Chimica, Materiali e Ingegneria Chimica "G. Natta", Politecnico di Milano, Italy; ³CFisUC, Department of Physics, University of Coimbra, Portugal

NEWT-5: New Techniques 5

Tuesday, August 16, 2022

4:30pm - 6:00pm

102A (156)

Session Chair: **Pavel Matousek**

4:30pm - 5:00pm

Versatile Applications of Two-Dimensional Correlation Analysis in Raman Spectroscopy

Yeonju Park¹, Isao Noda², Young Mee Jung¹

¹Kangwon National University, Korea, Republic of (South Korea); ²University of Delaware (USA)

5:00pm - 5:15pm

Full Spectrum Raman Excitation Mapping: Rapid Raman Spectroscopy of Nanocarbons from visible to near-IR

Paul Finnie¹, Jianying Ouyang¹, Jianfu Ding¹, Jeff Fagan²

¹National Research Council Canada, Canada; ²National Institute of Standards and Technology

5:15pm - 5:30pm

Raman Spectroscopy on Europa: A Radiation Challenge

Lauren R Doherty, Ian B Hutchinson, Melissa McHugh, Hannah N Lerman

University of Leicester, United Kingdom

5:30pm - 5:45pm

RLS, a Raman Spectrometer for Mars Exploration

Fernando Rull¹, Andoni Moral², Guillermo Lopez¹, Carlos Perez², Jose Antonio Manrique¹, Laura Seoane², Marco Veneranda¹, Jose Antonio Rodriguez², Pablo Rodriguez²

¹Unidad Asociada UVA-CSIC, University of Valladolid, Valladolid, Spain; ²Instituto de Técnica Aeroespacial (INTA), Madrid, Spain

5:45pm - 6:00pm

Spectral focusing coherent Raman scattering microscopy using the triple output dual optical parametric oscillator CRONUS-2P

Dominykas Gudavičius^{1,2}, Wolfgang Langbein¹

¹Cardiff University, School of Physics and Astronomy, The Parade, Cardiff CF24 3AA, United Kingdom; ²Light Conversion, Keramikų st. 2B, LT-10233 Vilnius, Lithuania

SERS-5: Sers/Ters 5

Tuesday, August 16, 2022

4:30pm - 6:00pm

101A (207)

Session Chair: **Dmitry Kurouski**

4:30pm - 5:00pm

Tip-enhanced Raman Spectroscopy for Nanoscale Characterization of Two-Dimensional Materials

Teng-Xiang Huang, Si-Si Wu, Kai-Qiang Lin, Yi-Fan Bao, Xiang Wang, Bin Ren

State Key Laboratory of Physical Chemistry of Solid Surfaces, Collaborative Innovation Center of Chemistry of Energy Materials, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China

5:00pm - 5:15pm

DNA Origami Directed Plasmonic Hot-Spot for Studying Molecular State and Spin Crossover by Single Molecule SERS

Anushree Dutta¹, Kosti Tapio², Antonio Suma³, Amr Mostafa¹, Yuya Kanehira¹, Vincenzo Carnevale⁴, Giovanni Bussi⁵, Ilko Bald¹

¹UNIVERSITY OF POTSDAM, Germany; ²University of Jyväskylä, Finland; ³Università degli Studi di Bari Aldo Moro, Italy; ⁴Temple University, USA; ⁵Scuola Internazionale Superiore di Studi Avanzati, Italy

5:15pm - 5:30pm

Parametric Nanopore Array fabrication for visible spectrum SERS of molecule translocation

Devin B. O'Neill, Marzia Iarossi, Angela de Fazio, Stoyan Yordanova, Erick Ulin-Avila, Francesco Tantussi, Francesco de Angelis

Italian Institute of Technology, Italy

(08/10/22)

TH-2: Fundamentals and Theory 2

Tuesday, August 16, 2022
4:30pm - 6:00pm
103A (144)

Session Chair: **Giuseppe Fumero**

4:30pm - 5:00pm

**Raman Scattering in the Quantum Domain:
Entangling Light and Matter**

Ian Walmsley

Imperial College London, United Kingdom

5:00pm - 5:20pm

**Quantum advantage of seeded, squeezed light in
stimulated Brillouin Spectroscopy and Imaging**

girish agarwal

Texas A & M University, United States of America

5:20pm - 5:35pm

**Selective Enhancement of Peptide Raman Signals
explained by Synchrotron Resonance Raman
Experiments and Simulations**

Sara Gomez¹, Franco Egidi¹, Tommaso Giovannini¹, Barbara Rossi², Chiara Cappelli¹

¹Scuola Normale Superiore di Pisa, Italy; ²Elettra Sincrotrone Trieste S.C.p.A.

5:35pm - 5:50pm

**Raman and Raman Optical Activity of amino acids in
aqueous solution: a computational investigation**

Chiara Sepali, Piero Lafiosca, Tommaso Giovannini, Chiara Cappelli

Scuola Normale Superiore, Italy

5:50pm - 6:05pm

**Theory of Abnormal Raman Bands of Wagging
Vibrational Modes in Aromatic Amine and Benzyl
Radicals**

**De-Yin Wu, Xiao-Ru Shen, Jia Liu, Jian-Zhang Zhou,
Zhong-Qun Tian**

Xiamen University, China, People's Republic

WEDNESDAY ORAL PRESENTATIONS

PLN 5: Plenary 5

Wednesday, August 17, 2022
8:45am - 9:30am
Ballroom 104 PLENARY (1120)
Session Chair: **Lawrence Ziegler**

8:45am - 9:30am

Atomic limit in microscopy & photon confinement

V. Ara Apkarian

UCI, United States of America

BIO-6: Biology and Biomedicine 6

Wednesday, August 17, 2022
10:00am - 11:50am
101B (207)
Session Chair: **Thomas Wilhelm Bocklitz**

10:00am - 10:20am

**Label-free identification of human T cells activation
using Raman spectroscopy**

**Aleksandra Borek-Dorosz^{1,2}, Anna Maria Nowakowska¹,
Paulina Laskowska³, Maciej Szydłowski³, Piotr Mrówka^{3,4},
Piotr Juszczyński³, Małgorzata Baranska^{1,2}, Katarzyna
Majzner¹**

¹Jagiellonian University, Faculty of Chemistry, Krakow, Poland; ²Jagiellonian University, Jagiellonian Centre for Experimental Therapeutics (JCET), Krakow, Poland; ³Department of Experimental Hematology, Institute of Hematology and Transfusion Medicine, Warsaw, Poland; ⁴Department of Biophysics, Physiology and Pathophysiology, Medical University of Warsaw, Warsaw, Poland

10:20am - 10:40am

Raman signature of SARS-CoV-2

Bayden Wood

Monash University, Australia

10:40am - 10:55am

**Non-invasive monitoring maturation process of
hepatocytes by Raman Microscopy**

Menglu Li^{1,2}, Yasunori Nawa^{1,2}, Satoshi Fujita^{1,3}, Katsumasa Fujita^{1,2}

¹AIST-Osaka University Advanced Photonics and Biosensing Open Innovation Laboratory (PhotoBIO-OIL), National Institute of Advanced Industrial Science and Technology, Japan; ²Department of Applied Physics, Graduate School of Engineering, Osaka University, Japan; ³The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan

(08/10/22)

10:55am - 11:10am

The Biochemical Profile of Breast Cancer - Diagnosing with Raman Spectroscopy

Adriana P. Mamede^{1,3}, Inês P. Santos¹, Ana L.M. Batista de Carvalho¹, Luis P.Q. Rei², Maria Silva⁴, Paulo Figueiredo⁵, Maria P.M. Marques^{1,3}, Luís A.E. Batista de Carvalho¹

¹Unidade de I&D Química-Física Molecular, University of Coimbra, Portugal; ²Portuguese Oncology Institute Francisco Gentil (IPOFG, Coimbra, Portugal); ³Department of Life Sciences, University of Coimbra, Portugal; ⁴Surgery Department, Portuguese Oncology Institute Francisco Gentil (IPOFG, Coimbra, Portugal); ⁵Pathology Department, Portuguese Oncology Institute Francisco Gentil (IPOFG, Coimbra, Portugal)

11:10am - 11:25am

Three-Dimensional Scaffolds for Monitoring Drug Diffusion and Cell Death Events by Surface-Enhanced Raman Scattering

Pablo S. Valera^{1,2,3}, Javier Plou^{1,2,3}, Beatriz Molina-Martínez¹, Isabel García^{1,3}, Arkaitz Carracedo^{3,4,5}, Luis M. Liz Marzán^{1,2,3}

¹CIC biomaGUNE, Basque Research and Technology Alliance (BRTA), Paseo de Miramón 182, 20014 Donostia - San Sebastián, Spain; ²Biomedical Research Networking Center in Bioengineering, Biomaterials, and Nanomedicine (CIBER-BBN), 20014 Donostia-San Sebastián, Spain; ³CIC bioGUNE, Basque Research and Technology Alliance (BRTA), 48160 Derio, Spain; ⁴Ikerbasque, Basque Foundation for Science, 48013 Bilbao, Spain; ⁵Biomedical Research Networking Center in Oncology (CIBERONC), 48160 Derio, Spain

11:25am - 11:40am

Identification of immune cell phenotypes to study cell-material and tumor-immune interactions

Julia Marzi^{1,2,3}, Nora Feuerer^{1,2}, Daniel Carvajal Berrio^{1,3}, Martin Weiss^{2,4}, Peter Loskill^{2,5}, Katja Schenke-Layland^{1,2,3,6}

¹Institute of Biomedical Engineering, Department for Medical Technologies & Regenerative Medicine, Eberhard Karls University Tübingen, Germany; ²NMI Natural and Medical Sciences Institute at the University of Tübingen, Reutlingen, Germany; ³Cluster of Excellence iFIT (EXC 2180) "Image-Guided and Functionally Instructed Tumor Therapies", Eberhard Karls University Tübingen, Germany; ⁴Department of Women's Health, Eberhard Karls University Tübingen, Germany; ⁵Institute of Biomedical Engineering, Department for Microphysiological Systems, Eberhard Karls University Tübingen, Germany; ⁶Dept. of Medicine/Cardiology, University of California Los Angeles (UCLA), Los Angeles/CA, USA

NEWT-6: New Techniques 6

Wednesday, August 17, 2022

10:00am - 11:50am

102A (156)

Session Chair: Vladislav V Yakovlev

10:00am - 10:20am

Ultrafast Raman Spectroscopy in the Single Phonon Regime: Entangling Light and Vibration

Christophe Galland

EPFL, Switzerland

10:20am - 10:35am

Raman Spectroscopy for Blue Bioeconomy

Simona Cinta Pinzaru

Babes-Bolyasi University, Romania

10:35am - 10:50am

Improving SERS Reproducibility and Throughput by Affordable Custom-Made Spinning Cell Device

Nicolò Simone Villa¹, Federica Iacoe¹, Chiara Zanchi¹, Paolo Maria Ossi², Matteo Tommasini¹, Andrea Lucotti¹

¹Department of Chemistry, Materials and Chemical Engineering "G. Natta", Politecnico di Milano, Italy; ²Department of Energy, Politecnico di Milano, Italy

10:50am - 11:05am

Raman spectroscopy for biodegradation monitoring of anthropogenic organic contaminants in a diffusive fluid matrix

Mario Marchetti¹, Marc Offroy², Patrice Bourson³, Ferroudja Abdat³, Guillaume Casteran⁴

¹MAST-FM2D, Univ Gustave Eiffel, IFSTTAR; ²Université de Lorraine, CNRS, LIEC; ³LMOPS/CentraleSupélec EA 4423, Université de Lorraine; ⁴Direction Générale de l'Aviation Civile—Service Technique de l'Aviation Civile

11:05am - 11:20am

Quantitative analysis of the hyperfine structure of binary sodium silicate glasses and their melts by Raman spectroscopy jointly with NMR

Jinglin You

State Key Laboratory of Advanced Special Steel & Shanghai Key Laboratory of Advanced Ferrometallurgy & School of Materials Science and Engineering, Shanghai University, China

11:20am - 11:35am

Sensing dopamine with Fe(III)-sensitized AuNP monolayer 1nm-gap SERS films

Marika Niihori¹, Tamas Foldes², Rakesh Arul¹, David-Benjamin Gryss¹, Charlie Readman¹, Bart de Nijs¹, Edina Rosta², Jeremy J Baumberg¹

¹Nanophotonics Centre, Dept of Physics, Cavendish Laboratory, University of Cambridge, UK; ²Dept of Physics and Astronomy, University College London, UK

(08/10/22)

11:35pm – 11:50pm

Application of LC-Raman method to sugar analysis

Liang-Hung Weng, Hirotosugu Hiramatsu

National Yang Ming Chiao Tung University, Taiwan

NLTR-4: Non-linear and Time Resolved 4

Wednesday, August 17, 2022

10:00am - 11:50am

103A (144)

Session Chair: **Sanford Ruhman**

10:00am - 10:30am

Ultrafast dynamics at the water interfaces revealed by femtosecond phase-sensitive nonlinear vibrational spectroscopy

Tahei Tahara

RIKEN, Japan

10:30am - 10:50am

Probing Reaction Dynamics in Higher-Lying States using Transient Stimulated Raman Spectroscopy

Timothy J. Quincy, Matthew S. Barclay, Marco

Caricato, Christopher G. Elles

University of Kansas, United States of America

10:50am - 11:05am

Chemically resolved pump-probe investigations of molecular dynamics

Riccardo Mincigrucci, Emiliano Principi, Claudio

Masciovecchio

Elettra Sincrotrone Trieste, Italy;

11:05am - 11:20am

Ultrafast spectroscopy of oriented single crystals of [2.2]Paracyclophane: Time resolved springing of a molecular “trap”

Omer Shalom Haggag, Noam Levinsky, Sanford Ruhman

The Hebrew University of Jerusalem, Israel

11:20am - 11:35am

Vibrational sum-frequency generation spectroscopy reveals glycosaminoglycan structure and its interaction with lipid membranes

Gergo Peter Szekeres^{1,2}, Szilvia Krekic^{3,4,5}, Rebecca L. Miller⁶, Mark Mero⁷, Kevin Pagel^{1,2}, Zsuzsanna Heiner³

¹Institut für Chemie und Biochemie, Freie Universität Berlin, Germany; ²Department of Molecular Physics, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany; ³School of Analytical Sciences Adlershof, Humboldt-Universität zu Berlin, Berlin, Germany; ⁴Institute of Biophysics, Biological Research Centre, Szeged, Hungary; ⁵Doctoral School of Multidisciplinary Medical Sciences, University of Szeged, Hungary; ⁶Copenhagen Center for Glycomics, Department of Cellular and Molecular Medicine, Faculty Sciences, University of Copenhagen, Denmark; ⁷Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany

SERS-6: Sers/Ters 6

Wednesday, August 17, 2022

10:00am - 11:50am

101A (207)

Session Chair: **Janina Kneipp**

10:00am - 10:20am

SERS detection schemes in complex biological matrices

Dana Cialla-May^{1,2,3}, Juergen Popp^{1,2,3}

¹Leibniz Institute of Photonic Technology, Germany; ²Friedrich Schiller University Jena; ³Research Campus Infectognoctic

10:20am - 10:35am

Tip-enhanced Raman Spectroscopy (TERS) of core-shell block copolymer micelles with a cross-linked core

Christiane Höppener¹, Johanna Katrin Elter², Felix Helmut Schacher^{2,3}, Volker Deckert^{1,3,4}

¹Leibniz Institute of Photonic Technologies (IPH) and Institute of Physical Chemistry Lessingstraße 10, D-07743 Jena, Germany; ²Institute of Organic Chemistry and Macromolecular Chemistry (IOMC), Friedrich-Schiller-University Jena, Lessingstraße 8, D-07743 Jena, Germany; ³Jena Center for Soft Matter (JCSM), Friedrich-Schiller-University Jena, Philosophenweg 7, Germany; ⁴Abbe Center of Photonics, Friedrich-Schiller-Universität Jena, Lessingstraße 10, D-07743 Jena, Germany and Institute of Quantum Science and Engineering, Texas A&M University, College Station, TX 77843-4242, USA

10:35am - 10:50am

Nanostars for label-free SERS

Cecilia Spedalieri, Janina Kneipp

Humboldt-Universität zu Berlin, Germany

10:50am - 11:05am

Reliable determination of SERS enhancement factor: molecular quantification through reference-free X-ray fluorescence

Eleonora Cara¹, Luisa Mandrile¹, Federica Celegato¹, Alessio Sacco¹, Andrea Mario Giovannozzi¹, Andrea Mario Rossi¹, Philipp Hoenicke², Yves Kayser², Burkhard Beckhoff², Natascia De Leo¹, Davide Marchi³, Alberto Zoccante³, Maurizio Cossi³, Michele Laus³, Micaela Castellino⁴, Luca Boarino¹, Federico Ferrarese Lupi¹

¹Istituto Nazionale di Ricerca Metrologica, INRiM, Italy; ²Physikalisch-Technische Bundesanstalt, PTB, Germany; ³Università del Piemonte Orientale, UPO, Italy; ⁴Politecnico di Torino, PoliTO, Italy

11:05am - 11:20am

Detection of induced chirality by surface-enhanced Raman optical activity

Debraj Gangopadhyay¹, Moumita Das^{1,2}, Jaroslav Šebestík¹, Josef Kapitán³, Petr Bouř^{1,2}

¹Institute of Organic Chemistry and Biochemistry, Academy of Sciences, Flemingovo náměstí 2, Prague 16610, Czech Republic; ²Department of Analytical Chemistry, University of Chemistry and Technology, Technická 5, Prague 16628, Czech Republic; ³Department of Optics, Palacký University Olomouc, 17. listopadu 12, Olomouc, 77146, Czech Republic

(08/10/22)

11:20am - 11:35am

Development of a Versatile SERS Sensor using Tyramine-mediated Crosslinking Chemistry

Hyejin Chang^{1,2}

¹Division of Science Education, Kangwon National University, Chuncheon 24341, Republic of Korea; ²Kangwon Radiation Convergence Research Support Center, Kangwon National University, Chuncheon 24341, Republic of Korea

11:35am - 11:50am

Tip-Enhanced Raman Spectroscopic Imaging of Phenyl and Benzene on Cu(100)

Benjamin N. Taber¹, Nuvraj K. Bilkhu², V. Ara Apkarian¹, Joonhee Lee¹

¹University of Nevada, Reno, United States of America; ²Department of Physics, University of Nevada

TH-3: Fundamentals and Theory 3

Wednesday, August 17, 2022

10:00am - 11:50am

103B (144)

Session Chair: **Shaul Mukamel**

10:00am - 10:30am

Computational resonant Raman spectroscopy of 2D materials: Exciton-phonon coupling and non-adiabatic effects

Ludger Wirtz, Sven Reichardt

University of Luxembourg, Luxembourg

10:30am - 10:50am

2D Impulsively Stimulated Resonant Raman Spectroscopy of Molecular Excited States

Giuseppe Fumero^{1,2}, **Christoph Schnedermann**^{3,4}, **Giovanni Batignani**¹, **Torsten Wende**³, **Matz Liebel**^{3,5}, **Giovanni Bassolino**³, **Carino Ferrante**^{1,6}, **Shaul Mukamel**⁷, **Philipp Kukura**³, **Tullio Scopigno**^{1,6}

¹Department of Physics, Sapienza University of Rome, Rome, Italy; ²Department of Basic and Applied Sciences for Engineering, Sapienza University of Rome, Rome, Italy; ³Physical and Theoretical Chemistry Laboratory, University of Oxford, Oxford, United Kingdom; ⁴Cavendish Laboratory, University of Cambridge, United Kingdom; ⁵ICFO - Institut de Ciències Fòtoniques, Barcelona, Spain; ⁶Istituto Italiano di Tecnologia, Center for Life Nano Science @Sapienza, Roma, Italy; ⁷Department of Chemistry and Physics and Astronomy, University of California, Irvine, USA

10:50am - 11:05am

Anti-Stokes Raman scattering and sound velocity of monolayer graphene

Xin Cong¹, **Ping-Heng Tan**¹, **Pedro Venezuela**²

¹Institute of Semiconductors, Chinese Academy of Sciences, People's Republic of China; ²Instituto de Física, Universidade Federal Fluminense, Niterói, Brazil

11:05am - 11:20am

Moiré phonons in twisted bilayer MoS₂

Miao-Ling Lin, Qing-Hai Tan, Ping-Heng Tan

State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China

11:20am - 11:35am

The Raman to rationalize the electrochemical mechanisms of the positive electrodes of Li-ion batteries

Mouna Ben Yahia

ICGM-University of Montpellier, France

THURSDAY ORAL PRESENTATIONS

PLN 6: Plenary 6

Thursday, August 18, 2022

8:45am - 9:30am

Ballroom 104 PLENARY (1120)

Session Chair: **Tullio Scopigno**

8:45am - 9:30am

Making Raman spectroscopy ultrafast

Philipp Kukura

University of Oxford, United Kingdom

NEWT-7: New Techniques 7

Thursday, August 18, 2022

10:00am - 11:50am

102A (156)

Session Chair: **Eric Olaf Potma**

10:00am - 10:20am

Timing is Everything: A Quest for More Information from Coherent Raman Spectroscopy and Imaging

Vladislav V Yakovlev

Texas A&M University, United States of America

10:20am - 10:40am

Probing Spectral Fluctuations and SERS Imaging at High Speed

Alexandre Brolo¹, **Nathan Lindquist**²

¹University of Victoria, Canada; ²Bethel University

(08/10/22)

10:40am - 10:55am

Simplified FM CARS and FM SRS with up to 18-fold contrast improvement

Kristin Wallmeier¹, Thomas Würthwein¹, Tim Hellwig², Max Brinkmann², Nick Lemberger¹, Carsten Fallnich^{1,3}

¹University of Münster, Münster, Germany; ²Refined Laser Systems GmbH, Münster, Germany; ³Cells in Motion Interfaculty Centre, University of Münster, Münster, Germany

10:55am - 11:10am

Efficient and adaptable sampling techniques for rapid and accurate determination of complex samples by Surface Enhanced Raman Spectroscopy

Zhuomin Zhang

Sun Yat-sen University, China, People's Republic of

11:10am - 11:25am

Using a flight-like Raman spectrometer to identify redox couples: a potential energy source for life.

Melissa McHugh, Ian Hutchinson, Hannah Lerman

University of Leicester, United Kingdom

11:25am - 11:40am

Unsupervised Raman spectroscopy imaging of bio-interfaces in analogue samples in preparation for space missions

Cedric MALHERBE¹, Lucas DEMARET¹, Ian B. HUTCHINSON², Gauthier EPPE¹

¹University of Liège, Belgium; ²University of Leicester, United Kingdom

NLTR-5: Non-linear and Time Resolved 5

Thursday, August 18, 2022

10:00am - 11:50am

103A (144)

Session Chair: **Christopher G. Elles**

10:00am - 10:20am

Dependence of Vibrational Energy Transfer on Distance in a Four-helix Bundle Protein

Yasuhisa Mizutani

Osaka University, Japan

10:20am - 10:35am

Removing Non-Resonant Background from CARS spectra via Deep Learning

Carlo Michele Valensise¹, Alessandro Giuseppe², Federico Vernuccio¹, Alejandro De la Cadena¹, Giulio Cerullo¹, Dario Polli¹

¹Physics Department, Politecnico di Milano, Italy; ²DIAG, University of Rome "La Sapienza"

10:35am - 10:50am

High-speed fingerprint broadband CARS with supercontinuum generation in bulk media and deep learning spectral denoising

Federico Vernuccio¹, Arianna Bresci¹, Alejandro De la Cadena¹, Benedetta Talone¹, Chiara Ceconello¹, Francesco Manetti¹, Renzo Vanna², Giulio Cerullo^{1,2}, Dario Polli^{1,2}

¹Department of Physics, Politecnico di Milano, P.zza Leonardo da Vinci 32, 20133 Milan, Italy; ²CNR-Institute for Photonics and Nanotechnologies (IFN-CNR), P.zza Leonardo Da Vinci 32, 20133 Milan, Italy

10:50am - 11:05am

Nanoscale coherent Raman detection via the local field enhancement at a single plasmonic nanorod

Martina Elisena Recchia¹, Dafydd Sion Harlow¹, Wolfgang Langbein², Paola Borri¹

¹Cardiff University School of Biosciences, Museum Avenue, Cardiff CF10 3AX, United Kingdom; ²Cardiff University School of Physics and Astronomy, The Parade, Cardiff CF24 3AA, United Kingdom.

11:05am - 11:20am

Broadband Hadamard spectral acquisition for a high speed and high spectral resolution Stimulated Raman Microscope

Luca Genchi, Andrea Bucci, Siarhei Laptinok, Carlo Liberale

Biological and Environmental Science and Engineering Division, King Abdullah University of Science and Technology, Saudi Arabia

11:20am - 11:35am

Assessment of formulated product performance with stimulated Raman scattering microscopy

Natalie Anne Belsey¹, Dimitrios Tsikritsis¹, Richard Guy²

¹National Physical Laboratory, United Kingdom; ²University of Bath, United Kingdom

11:35am - 11:50am

Towards excited state Raman scattering studies of single-molecules

Jana Ockova

The Institute of Photonic Sciences in Barcelona (ICFO), Spain

(08/10/22)

SERS-7: Sers/Ters: Applications to Biological Systems 7

Thursday, August 18, 2022
10:00am - 11:50am
101A (207)

Session Chair: **Dana Cialla-May**

10:00am - 10:20am

Bringing SERS to the Clinic: A Nanomaterials Chemistry Approach to Plasmonics (Prerecorded talk)

Supriya Atta¹, Manjari Bhamidipati¹, Kholud Dardir¹, Ted V. Tsoulos², Hao Wang¹, Zhaolin Xue¹, Laura Fabris¹

¹Rutgers University, United States of America; ²École Polytechnique Fédérale de Lausanne

10:20am - 10:35am

Raman fingerprint as biomarker for the diagnosis of neurodegenerative diseases

Cristiano Carlomagnò, Alice Gualerzi, Silvia Picciolini, Marzia Bedoni

Fondazione Don Gnocchi, Italy

10:35am - 10:50am

Nanostars – decorated microfluidic devices for SERS targeting of biomolecules in liquid samples

Caterina Dallari¹, Caterina Credi^{1,2}, Elena Lenci³, Andrea Trabocchi³, Riccardo Cicchi^{1,4}, Francesco Saverio Pavone^{1,4,5}

¹European Laboratory for Non Linear Spectroscopy (LENS); ²Department of Industrial Engineering, University of Florence; ³Department of Chemistry, University of Florence; ⁴National Institute of Optics, National Research Council (INO-CNR); ⁵Department of Physics, University of Florence

10:50am - 11:05am

Spatial Separation of Plasmonic Hot Electron Generation and a Hydrodehalogenation Reaction Center using a DNA Wire

Sergio Kogikoski Junior, Anushree Dutta, Ilko Bald

University of Potsdam, Germany

11:05am - 11:20am

SERS-active nanostructures for biomedical diagnostics and pathogen detection: towards the development of a portable SERS analyzer.

Agnieszka Kaminska¹, Evelin Witkowska¹, Krzysztof Niciński¹, Aneta Kowalska¹, Sylwia Berus¹, Marta Czaplicka¹, Tomasz Szymborski¹, Dorota Korsak², Joanna Trzcńska-Danielewicz³, Anna Skoczyńska⁴

¹Institute of Physical Chemistry, Polish Academy of Sciences, Poland; ²University of Warsaw, Faculty of Biology, Institute of Microbiology, Applied Microbiology, Miecznikowa 1, 02-096 Warsaw, Poland; ³Department of Molecular Biology, Institute of Biochemistry, Faculty of Biology, University of Warsaw, Miecznikowa 1, 02-096 Warsaw, Poland; ⁴National Medicines Institute, Chelmska 30/34, 00-725 Warsaw, Poland

11:20am - 11:35am

Characterisation of the Cyanate Inhibited State of Cytochrome c Oxidase with surface-enhanced resonance Raman spectroscopy (SERRS)

Fabian Kruse¹, Inez Weidinger¹, Anh Duc Nguyen², Jovan Dragelj², Maria Andrea Mroginski², Joachim Heberle³, Ramona Schlesinger³

¹Technische Universität Dresden, Institute of Chemistry, Germany; ²Technische Universität Berlin, Department of Chemistry, Germany; ³Freie Universität Berlin, Department of Physics, Germany

SERS-8: Sers/Ters: Applications to Material Science 8

Thursday, August 18, 2022
10:00am - 11:50am
101B (207)

Session Chair: **Olga Eremina**

10:00am - 10:15am

SPPs controlling and plasmonic catalysis on nanomaterials

Zhenglong Zhang, Hairong Zheng

Shaanxi Normal University, China, People's Republic of

10:15am - 10:30am

Tip-enhanced Raman Spectroscopy Protocol for Nanoscale Chemical Imaging of Commercial Functionalized Few-layer Graphene

Naresh Kumar¹, Barry Brennan¹, Bert Weckhuysen², Thomas Howe³, Lee Edwards³, Andrew Wain¹, Andrew Pollard¹

¹National Physical Laboratory, Hampton Road, TW11 0LW Teddington, United Kingdom; ²Utrecht University, Universiteitsweg 99, 3584 CG Utrecht, the Netherlands; ³Haydale Limited, Clos Fferws, Parc Hendre, SA18 3BL Ammanford, United Kingdom

10:30am - 10:45am

Study of chemical enhancement mechanism in various semiconductor substrates based Surface enhanced Raman spectroscopy (SERS)

Javeong Kim¹, Yujin Jang¹, Suyeun Baek¹, Eunji Ko¹, Nam-Jung Kim², Heehun Kim², Gyu-Chul Yi², Po-Cheng Tsai³, Shih-Yen Lin³, Yukyung Shin⁴, Myung Hwa Kim⁴, Seokhyun Yoon¹

¹Department of Physics, Ewha womans university, Seoul, Republic of (South Korea); ²Department of Physics and Astronomy, Seoul National University, Seoul, Korea; ³Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan; ⁴Department of Chemistry and Nanoscience, Ewha Womans University, Republic of Korea

10:45am - 11:00am

Correlated KPFM and TERS Imaging to Elucidate Defect-induced Inhomogeneities in Oxygen Plasma Treated 2D MoS₂ Nanosheets

Sanju Gupta

Penn State University, United States of America

(08/10/22)

11:00am - 11:15am

ULF TERS imaging –a novel technique for assessing the layer interaction in vertical heterostructures of 2D semiconductors.

Alvaro Rodriguez¹, Andrey Kravev², Matěj Velický¹, Peng Chen³, Xiangfeng Duan⁴, Patrick El-Khoury⁵, Otakar Frank¹

¹J. Heyrovský Institute of Physical Chemistry, Czech Republic; ²HORIBA Scientific, USA; ³School of Microelectronics, Southern University of Science and Technology, China; ⁴Department of Chemistry and Biochemistry and California NanoSystems Institute, University of California, Los Angeles, USA; ⁵Physical Sciences Division Pacific Northwest National Laboratory, USA

11:15am - 11:30am

Sub-diffraction nanoscale Raman imaging of the interface in a 2D semiconductor heterostructure

John Pierce Fix¹, Sourav Garg², Andrey Kravev³, Connor Flanery¹, Michael Colgrove¹, Audrey Sulkanen⁴, Minyuan Wang⁴, Gang-Yu Liu⁴, Patrick Kung², Nicholas J Borys¹

¹Department of Physics, Montana State University, Bozeman Montana; ²Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa Alabama; ³HORIBA Scientific, Novato California; ⁴Department of Chemistry, University of California Davis, Davis California

11:30am - 11:45am

SERS spectroelectrochemical study of the first stages of electrochemical and chemical aniline oxidation at different pH

Zuzana Morávková, Ivana Šeděnková, Patrycja Bober
Institute of Macromolecular Chemistry, CAS, Czech Republic

XRR-1: X Ray Raman 1

Thursday, August 18, 2022

10:00am - 11:50am

103B (144)

Session Chair: **Shaul Mukamel**

10:00am - 10:25am

Probing elementary molecular events by stimulated X-ray Raman spectroscopy

Shaul Mukamel

University of California - Irvine, United States of America

10:25am - 10:50am

Resonant Inelastic X-Ray Scattering of condensed matter

Faris Gelmukhanov

Royal Institute of Technology, Sweden

10:50am - 11:15am

X ray Raman FEL based opportunities

James Cryan

SLAC National Accelerator Laboratory, United States of America

11:15am - 11:40am

A novel photo-induced lattice instability in SnSe observed by femtosecond x-ray scattering

Yijing Huang¹, Shan Yang², Samuel Teitelbaum¹, Gilberto De la Peña¹, Takahiro Sato¹, Matthieu Chollet¹, Diling Zhu¹, Jennifer Niedziela², Dipanshu Bansal², Andrew May³, Aaron Lindenberg¹, Olivier Delaire², David Reis¹, Mariano Trigo¹

¹Stanford University/SLAC National Accelerator Laboratory, United States of America; ²Duke University, United States of America; ³Oak Ridge National Laboratory, United States of America

PD-3: Post Deadline 3

Thursday, August 18, 2022

2:30pm - 4:00pm

101A (207)

Session Chair: **Giuseppe Fumero**

2:30pm - 3:00pm

Nonlocal Nonlinear Phononics

Meredith Henstridge^{1,2}, Michael Först², Edward Rowe², Michael Fechner², Andrea Cavalleri^{2,3}

¹SLAC National Laboratory, Menlo Park, CA, United States of America; ²Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany; ³Department of Physics, Clarendon Laboratory, University of Oxford, Oxford, United Kingdom

3:00pm - 3:30pm

Picosecond energy transfer in a transition metal dichalcogenide-graphene heterostructure revealed by transient Raman spectroscopy

Carino Ferrante^{1,2,3,4}, Giorgio Di Battista^{4,5,6}, Luis E. Parra Lopez⁵, Giovanni Batignani^{3,4}, Etienne Lorchat⁵, Alessandra Virga^{3,4}, Stephane Berciaud⁵, Tullio Scopigno^{4,1,3}

¹Graphene Labs, Istituto Italiano di Tecnologia, I-16163 Genova, Italy; ²Innovative Nuclear Systems Laboratory, Fusion and Technology for Nuclear Safety and Security Department, "Italian National Agency for New Technologies, Energy and Sustainable Economic Development," Casaccia, 00123 Roma, Italy; ³Center for Life Nano Science @Sapienza, Istituto Italiano di Tecnologia, I-00161 Roma, Italy; ⁴Dipartimento di Fisica, Università di Roma "La Sapienza," 00185 Roma, Italy; ⁵Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, Université de Strasbourg, CNRS, F-67000 Strasbourg, France; ⁶Fakultät für Physik, Ludwig-Maximilians-Universität München, Geschwister-Scholl-Platz 1, 80539 München, Germany

3:30pm - 4:00pm

Covariance-based stochastic Raman spectroscopy

Daniele Fausti

University of Trieste and University of Erlangen-Nuremberg, Italy

(08/10/22)

PD-4: Post Deadline 4

Thursday, August 18, 2022
2:30pm - 4:00pm
101B (207)

Session Chair: **Richard Prince**

2:30pm - 3:00pm

Gold nanomesh for wearable SERS

Kotaro Hiramatsu¹, Limei Liu^{1,2}, Pablo Martinez Pancorbo¹, Ting-Hui Xiao¹, Saya Noguchi¹, Machiko Marumi¹, Julia Gala de Pablo¹, Siddhant Karhadkar¹, Hiroki Segawa³, Yasutaka Kitahama¹, Tamitake Itoh⁴, Junle Qu², Kuniharu Takei⁵, Keisuke Goda^{1,6,7}

¹University of Tokyo, Japan; ²Shenzhen University; ³National Research Institute of Police Science; ⁴National Institute of Advanced Industrial Science and Technology; ⁵Osaka Metropolitan University; ⁶Wuhan University; ⁷University of California, Los Angeles

3:00pm - 3:30pm

In vivo biomolecular imaging of zebrafish embryos using confocal Raman spectroscopy

Håkon Høgetset¹, Conor C. Horgan¹, James P.K. Armstrong¹, Mads S. Bergholt¹, Vincenzo Torraca², Qu Chen¹, Timothy J. Keane¹, Laurence Bugeon¹, Margareth J. Dallman¹, Serge Mostowy², Molly M. Stevens¹

¹Imperial College London; ²London School of Hygiene and Tropical Medicine

3:30pm - 4:00pm

Quantification in Stimulated Raman scattering microscopy through water normalization

Dan Fu

University of Washington, United States of America

BIO-7: Biology and Biomedicine 7

Thursday, August 18, 2022
4:30pm - 6:00pm
101B (207)

Session Chair: **Katarzyna Majzner**

4:30pm - 5:00pm

Machine learning and chemometrics as tools for biomedical Raman data analysis

Thomas Wilhelm Bocklitz^{1,2}

¹Leibniz Institute of Photonic Technology (Leibniz-IPHT), Member of Leibniz Health Technologies, Jena, Germany; ²Institute of Physical Chemistry and Abbe Center of Photonics (IPC), Friedrich-Schiller-University

5:00pm - 5:15pm

Visualizing cell wall dynamics during yeast sporulation process by Raman microspectroscopy and MCR-ALS technique

ohammad Imrul Hossain¹, **Hemanth Noothalapati**^{2,3}, **Tatsuyuki Yamamoto**^{1,2}

¹Faculty of Life and Environmental Science, Shimane University, Ma; ²Raman project center for medical and biological applications, Shimane University, Matsue, Japan; ³Research Administration office, Shimane University, Matsue, Japan

5:15pm - 5:30pm

Raman spectroscopy and semi-supervised learning for the investigation of biochemical response in patients receiving HDR-brachytherapy

Kirsty Milligan¹, **Xinchen Deng**¹, **Ramie Ali-Adeeb**¹, **Phillip Shreeves**², **Juanita M. Crook**³, **Alexandre G. Brolo**⁴, **Julian J. Lum**⁵, **Jeffrey L. Andrews**², **Andrew Jirasek**¹

¹Medical Physics, The University of British Columbia, Canada; ²Department of Mathematics and Statistics, The University of British Columbia, Canada; ³BC Cancer, Centre for the Southern Interior, Kelowna, Canada; ⁴Department of Chemistry, The University of Victoria, Canada; ⁵BC Cancer, Victoria, Canada

MAT-6: Materials 6

Thursday, August 18, 2022
4:30pm - 6:00pm
102B (156)

Session Chair: **Antonio G Souza Filho**

4:30pm - 4:50pm

Exciton-Phonon Coupling in CdSe Nanoplatelets from Resonance Raman Intensity Analysis

Anne Kelley

Univ of California - Merced, United States of America

4:50pm - 5:10pm

Development of novel techniques for the analysis of microplastics using Raman imaging

Jovan Badzoka¹, **Martin Brunner**¹, **Maria Moll**², **Christian Huck**¹

¹Leopold-Franzens University of Innsbruck, Austria; ²Medical University of Innsbruck, Austria

(08/10/22)

5:10pm - 5:25pm

Multi-Wavelength Raman Spectroscopy of Poly(Furfuryl Alcohol)

Francesco D'Amico², **Maurizio Ermanno Musso**¹, **Raphael J.F. Berger**¹, **Nicola Cefarin**², **Durval Bertoldo Menezes**³, **Andreas Reyer**¹, **Letizia Scarabattoli**^{1,6}, **Thomas Sepperer**⁴, **Gianluca Tondi**^{4,5}, **Thomas Schnabel**⁴, **Lisa Vaccari**²

¹University of Salzburg, Department of Chemistry and Physics of Materials, Salzburg, Austria; ²Elettra-Sincrotrone Trieste S.C.p.A., Basovizza (TS), Italy; ³Federal Institute of Triângulo Mineiro, Uberlândia, Minas Gerais, Brazil; ⁴Salzburg University of Applied Sciences, Forest Products & Biogenic Technology, Kuchl, Austria; ⁵Land, Environment, Agriculture and Forestry Department, University of Padova, Legnaro (PD), Italy; ⁶Università degli Studi di Perugia, Department of Chemistry, Perugia, Italy

5:25pm - 5:40pm

Renewable Hybrid Plasmonic Materials as Platforms for Chemical Reactions

Sivoney Ferreira de Souza

University of Potsdam, Germany

5:40pm - 5:55pm

Vibrational and electronic properties of sp-carbon chains probed by synchrotron-based UV resonance Raman spectroscopy

Pietro Marabotti¹, **Matteo Tommasini**², **Chiara Castiglioni**², **Patrick Serafini**¹, **Mariagrazia Tortora**³, **Barbara Rossi**³, **Sonia Peggiani**¹, **Andrea Li Bassi**¹, **Valeria Russo**¹, **Carlo Spartaco Casari**¹

¹Micro and Nanostructured Materials Laboratory - NanoLab, Department of Energy, Politecnico di Milano via Ponzio 34/3, I-20133, Milano, Italy; ²Department of Chemistry, Materials and Chem. Eng. 'G. Natta', Politecnico di Milano Piazza Leonardo da Vinci 32, I-20133, Milano, Italy; ³Elettra Sincrotrone Trieste, S.S. 114 km 163.5, Basovizza, 34149 Trieste, Italy

NLTR-6: Non-linear and Time Resolved 6

Thursday, August 18, 2022

4:30pm - 6:00pm
103A (144)

Session Chair: **Dongho Kim**

4:30pm - 5:00pm

Ballistic of photoisomerization in 13-cis, 15-syn microbial rhodopsins: finally a predictive structure / photodynamic correlation?

Partha Malakar, **Sanford Ruhman**

Hebrew University, Israel

5:00pm - 5:15pm

Fluorescence-Encoded Time-Domain Coherent Raman Spectroscopy

Phillip Charles McCann¹, **Kotaro Hiramatsu**^{1,2,3}, **Keisuke Goda**^{1,4,5}

¹Department of Chemistry, The University of Tokyo, Tokyo 113-0033, Japan; ²Research Centre for Spectrochemistry, The University of Tokyo, Tokyo 113-0033, Japan; ³PRESTO, Japan Science and Technology Agency, Saitama 332-0012, Japan; ⁴Department of Bioengineering, University of California, Los Angeles, California 90095, USA; ⁵Institute of Technological Sciences, Wuhan University, Hubei 430072, China

5:15pm - 5:30pm

Ultrafast structural changes of large [Au(CN)₂]-oligomers in triplet excited state observed by time-domain Raman spectroscopy

Li Liu¹, **Hikaru Kuramochi**^{1,2,3}, **Munetaka Iwamura**⁴, **Koichi Nozaki**⁴, **Tahei Tahara**^{1,2}

¹Molecular Spectroscopy Laboratory, RIKEN, Japan; ²Ultrafast Spectroscopy Research Team, RIKEN Center of Advanced Photonics (RAP), RIKEN; ³Research Center of Integrative Molecular Systems, Institute for Molecular Science; ⁴Graduate School of Science and Engineering, University of Toyama

R-Quiz: Raman Quiz

Thursday, August 18, 2022

5:15pm - 5:45pm
101A (207)

Session Chair: **Sebastian Schlucker**

FRIDAY ORAL PRESENTATIONS

BIO-8: Biology and Biomedicine 8

Friday, August 19, 2022

8:45am - 10:35am
101B (207)

Session Chair: **Judy Kim**

8:45am - 9:05am

785 nm SERS of metalloporphyrins: Chemical enhancement, Herzberg-Teller coupling and forensics

Harrison Ingraham^{1,2}, **Ranjith Premasiri**^{1,2}, **James McNeeley**^{1,2}, **Lawrence Ziegler**^{1,2}

¹Boston University, United States of America; ²Photonics Center, Boston University

9:05am - 9:20am

Raman Metrology for Live Cell Imaging

Caitlin Thomson^{1,2}, **Dimitrios Tsikritsis**², **Duncan Graham**¹, **Natalie Belsey**²

¹University of Strathclyde, United Kingdom; ²National Physical Laboratory, United Kingdom

(08/10/22)

9:20am - 9:35am

Raman Microscopy of Microalgae: New Challenges and Opportunities in the World of Photosynthetic Microorganisms

Peter Mojzeš^{1,3}, Šárka Moudříková¹, Jana Pilátová², Lu Gao³, Ladislav Nedbal³, Kateřina Bišová⁴, Alexei Solovchenko⁵

¹Charles University, Faculty of Mathematics and Physics, Czech Republic; ²Charles University, Faculty of Science, Czech Republic; ³Forschungszentrum Jülich, Germany; ⁴Centre Algatech, Institute of Microbiology, Czech Republic; ⁵Moscow State University, Faculty of Biology, Russia

9:35am - 9:50am

Detection of Diseases Using SERS: Coupling of Magnetic Concentration and Principal Component Analysis for Zika Virus Detection

Raisa Lacerda Silveira¹, Sergio Hiroshi Toma¹, Koiti Araki¹, Alexandre Guimaraes Brolo², Paola Corio¹, Jonnatan Julival Santos¹

¹University of Sao Paulo, Brazil; ²University of Victoria

9:50am - 10:05am

Hydration Water Character on Atomically Dislocated Surfaces Revealed by Surface Enhanced Raman Spectroscopy

dongha shin

Inha University, Korea, Republic of (South Korea)

NEWT-9: New Techniques 9

Friday, August 19, 2022

8:45am - 10:35am

102A (156)

Session Chair: **Khanh Kieu**

8:45am - 9:15am

Surface enhanced coherent Raman scattering: blessing or curse?

Eric Olaf Potma

University of California, Irvine, United States of America

9:15am - 9:30am

Research progress of trace uranyl ions detection by SERS-based microfluidic devices

XUAN HE, YU LIU, XIAOLIN WANG

China Academy of Engineering Physics, Mianyang 621900, China, China, People's Republic of

9:30am - 9:45am

A study on the effect of functional groups of NIR Raman reporter dyes in quantitative analysis by NIR-SERRS-based LFA

Namhyun Choi, Mujo Adanalic, Asen Dankov, Roland Grzeschik, Sebastian Schlücker

Department of Chemistry and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Germany

9:45am - 10:00am

N-acetyl- β -D-glucosaminidase activity assay for monitoring insulin-dependent diabetes using Ag-porous Si SERS substrates

Narsingh Nirala, Giorgi Shtenberg

Institute of Agricultural Engineering, Agricultural Research Organization, Volcani Institute, Rishon LeZion, Israel

10:00am - 10:15am

Miniaturized dual laser Raman spectrometer with real-time spectral and intensity calibration for in-vivo skin diagnostics

Yurii Pilhun^{1,2}, Oleksii Ilchenko^{1,3}, Andrii Kutsyk^{1,2,4}

¹Lightnovo ApS, Denmark; ²Taras Shevchenko National University of Kyiv, Faculty of Radio Physics, Electronics and Computer Systems, Ukraine; ³Technical University of Denmark, Department of Health Technology, Denmark; ⁴Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

NLTR-7: Non-linear and Time Resolved 7

Friday, August 19, 2022

8:45am - 10:35am

103A (144)

Session Chair: **Philipp Kukura**

8:45am - 9:05am

Single-shot femtosecond stimulated Raman histology of gastroscopic biopsy

Zhijie Liu, Jianpeng Ao, Minbiao Ji

Fudan University, China, People's Republic of

9:05am - 9:20am

Coherent Anti-Stokes Raman Scattering-Raman Optical Activity Spectroscopy of a Chiral Organocatalyst in Achiral Solvents

VIKAS KUMAR¹, Till Reichenauer¹, Dennis Jansen², Jochen Niemeyer², Sebastian Schluecker¹

¹Department of Chemistry (Physical Chemistry), Center for Nanointegration Duisburg-Essen (CENIDE) University of Duisburg-Essen, Essen, Germany; ²Department of Chemistry (Organic Chemistry), Center for Nanointegration Duisburg-Essen (CENIDE) University of Duisburg-Essen, Essen, Germany

9:20am - 9:35am

BCARS down to the nanometer length scale

Franz Hempel¹, Federico Vernuccio², Michael Rüsing¹, Giulio Cerullo², Dario Polli², Lukas M. Eng^{1,3}

¹Institut für Angewandte Physik, Technische Universität Dresden, 01062 Dresden, Germany; ²Dipartimento di Fisica, Politecnico Milano, 20133 Milano, Italy; ³ct.qmat: Dresden-Würzburg Cluster of Excellence—EXC 2147, TU Dresden, 01062 Dresden

(08/10/22)

9:35am - 9:50am

Random Illumination Wide-field Coherent Anti-Stokes Raman Scattering Microscopy

Eric Michele Fantuzzi¹, Sandro Heuke¹, Dominykas Gudavičius^{2,3}, Randy Bartels⁴, Karolis Neimontas², Anne Sentenac¹, Hervé Rigneault¹

¹Aix Marseille Univ, CNRS, Centrale Marseille, Institut Fresnel, Marseille, France; ²Light Conversion, Keramiku st.2B LT-10233 Vilnius, Lithuania; ³Cardiff University, School of Physics and Astronomy, The Parade, Cardiff CF24 3AA, United Kingdom; ⁴Colorado State University, Fort Collins, USA

9:50am - 10:05am

Vibrational tags for Raman and infrared-based imaging

Yong Li, Katherine Townsend, Robert Dorn, Jennifer Prescher, Eric Potma

Department of Chemistry, University of California, Irvine

10:05am - 10:20am

Super-multiplex flow cytometry by cyanine-based Raman tags

Ryo Nishiyama¹, Kotaro Hiramatsu¹, Shintaro Kawamura², Kosuke Dodo², Wei Min³, Mikiko Sodeoka², Keisuke Goda¹

¹Department of Chemistry, The University of Tokyo, Tokyo, Japan.; ²RIKEN Cluster for Pioneering Research, Saitama, Japan.; ³Department of Chemistry, Columbia University, New York, USA.

10:20am - 10:35am

Robust, high speed low frequency coherent Raman microscopy

Randy Bartels¹, David Smith¹, Siddarth Shivkumar², Hervé Rigneault²

¹Colorado State University, United States of America; ²Fresnel Institute, Marseille, France

SERS-10: Sers/Ters 10

Friday, August 19, 2022

8:45am - 10:35am

101A (207)

Session Chair: **Alexandre Brolo**

8:45am - 9:15am

Plasmonic core-shell nanostructures for in-situ probing surface reactions

Jin-Chao Dong, Hua Zhang, Jian-Feng Li

Xiamen University, China

9:15am - 9:30am

Molecular platform for frequency upconversion at the single-photon level

Philippe Roelli¹, Wen Chen², Huatian Hu³, Diego Martin-Cano⁴, Tobias J. Kippenberg², Christophe Galland²

¹Nano-optics Group, CIC nanoGUNE, Spain; ²EPFL, Institute of Physics, Switzerland; ³Wuhan Institute of Technology, China; ⁴Universidad Autónoma de Madrid, Spain

9:30am - 9:45am

New approaches in preparation of metallic nanostructures for SERS by means of low-pressure plasma

Marek Prochazka, Anna Kuzminova, Ondrej Kylian
Charles University, Czech Republic

9:45am - 10:00am

Integrating Sphere Measurements for Paper SERS Sensors

Li-Lin Tay, Shawn Poirier, Ali Ghaemi, John Hulse
National Research Council Canada

10:00am - 10:15am

Multiplexed Spatial Profiling of Cancer Enabled by SERS Nanoparticles

Olga Eremina^{1,2}, Alexander Czaja^{1,2}, Augusta Fernando^{1,2}, Cristina Zavaleta^{1,2}

¹Department of Biomedical Engineering, University of Southern California, 3650 McClintock Ave, Los Angeles, CA 90089, United States; ²Michelson Center for Convergent Bioscience, University of Southern California, 1002 Childs Way, Los Angeles, CA 90089, United States

PLN 7: Plenary 7

Friday, August 19, 2022

11:05am - 11:50am

Ballroom 104 PLENARY (1120)

Session Chair: **Wolfgang Kiefer**

11:05am - 11:50am

Stimulated Raman Scattering Imaging: the Next Frontier of Light Microscopy

Wei Min

Columbia University, United States of America

Closing Ceremony and Poster Winner Announcements

Friday: 11:50 am - 12:30 pm - Ballroom 10

(08/10/22)

TUESDAY POSTER PRESENTATIONS

Poster TUE-A: Poster Session Tuesday Afternoon

Tuesday, August 16, 2022
11:50am - 2:25pm

Probing Zeolite H-ZSM-5 Deactivation using Correlative Hyperspectral Confocal Raman, Fluorescence and Tip-enhanced Fluorescence Spectroscopies

Siiri Bienz¹, Sophie van Vreeswijk², Naresh Kumar¹, Bert Weckhuysen², Renato Zenobi¹

¹ETH Zurich, Switzerland; ²Utrecht University, Netherlands

Characterization of the cathode material of lithium-ion batteries by Raman spectroscopy

Sergey Mamedov, Michelle Nicole Sestak

HORIBA Scientific, United States of America

Characterising Graphene and 2D Materials by Confocal Raman and Photoluminescence Microscopy

Angela Flack

Edinburgh Instruments, United Kingdom

Circular polarization effects on diesel Raman spectra

J. D. Berrones-Guerrero, C. Frausto-Reyes, M. Ortiz-Morales, M. H. De la Torre

Centro de Investigaciones en Optica, A.C., Mexico

Use of complementary techniques for depth profiling of mobile screen protection covers

Bernd Bleisteiner¹, Sofia Gaiaschi², Thibault Brulé²

¹HORIBA Jobin Yvon GmbH, Germany; ²HORIBA France SAS, France;

AFM-TERS measurements in liquid environment with side illumination/collection

Patrick Hsia¹, Pierre Burgos², Marc Chaigneau¹

¹Horiba France SAS, France; ²Horiba UK Ltd., UK

Cavity Enhanced Transmission Raman for Content Uniformity Analysis of Low Dosage Pharmaceutical Tablets

Jun Zhao, Christopher Kautz

B&W Tek, United States of America

Development of a new unique concept for accurate sample measurement across different microscope based molecular spectroscopy system

Kohei TAMURA¹, Carlos MORILLO², Yuji HIGUCHI¹, Erika TAIRA¹, Kento AIZAWA¹, Satoko SUZUKI¹, Ken-ichi AKAO¹

¹JASCO Corporation, Japan; ²JASCO Incorporated

Graphene and Phthalocyanine Heterostructures for Surface Enhanced Raman Spectroscopy

Angela Luis Matos, Soraya Y. Flores Chalco, Muhammad Shehzad Sultan, Brad Weiner, Gerardo Morell

University of Puerto Rico Rio Piedras, Puerto Rico (U.S.)

Study of SERS of pharmaceutically significant organic molecule 4, 5-Dicianoimidazole adsorbed on Au nanocolloids: Theoretical modelling using DFT

Subhendu Chandra

Victoria Institution (College), India

TERS Investigation of Combustion-generated Ultrafine Particulate Matter

Ophélie Lancry¹, Jennifer A. Noble², Sébastien Legendre¹, Marc Chaigneau¹

¹Horiba, France; ²PIIM, Aix-Marseille Université, France

Confocal Raman Particle Analysis on the Micron Scale Applied to Microplastics, Bacteria and 2D Materials

Thomas Dieing, Miriam Böhmler, Harald Fischer, Matthias Finger, Olaf Hollricher

WITec GmbH, Germany

De-noising and differentiation of low-SNR Raman-spectra of EV's

Mathias Novik Jensen, Benjamin Ricaud, Olav Gaute Hellesø

Dept. of physics and technology, UiT The arctic university of Norway, Norway

Optimizing SERS Structures beyond the monochromatic E4-Model

Henriette Maaß^{1,2}, Thien Anh Le^{1,2}, Enno Schatz^{1,2}, Thorsten Feichtner¹, Bert Hecht¹

¹NanoOptics & Biophotonics group, Experimental Physics 5, University of Wuerzburg, Germany; ²NanoStruct GmbH, Wuerzburg, Germany

Multi-technique assessment of the SERS adsorption isotherm approximation

Evandro Ivanov, Paola Corio

University of São Paulo, Brazil;

SmartSampling™: a revolution in Raman imaging

Thibault Brulé, Sébastien Laden, Ludivine Fromentoux, Jérémy Brites

HORIBA France SAS, France

(08/10/22)

Deep Ultra-Violet Raman Spectroscopy for Eyesafe Standoff Chemical Threat Detection

Shayne Harrel, Adam Wise, Jenny Goulden

Andor Technologies, Belfast, UK

Raman spectroscopy evaluation of indomethacin stability loaded into microcontainers – influence of shape and size

Chiara Mazzoni, Roman Slipets, Oleksii Ilchenko, Lasse Højlund Eklund Thamdrup, Line Hagner Nielsen, Anja Boisen

The Danish National Research Foundation and Villum Foundation's Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics (IDUN), Department of Health Technology, Technical University of Denmark

The impact of graphene derivatives additives on polymer membranes analysed by Raman microspectroscopy

Aleksandra Weselucha-Birczynska¹, Anna Kolodziej¹, Emilie Gérouville¹, Małgorzata Świętek², Elżbieta Długoń³, Marta Błażewicz³

¹Jagiellonian University, Poland; ²Czech Academy of Sciences, Czech Republic; ³AGH - University of Science and Technology, Poland

Rapid Detection of Ciprofloxacin in Milk by a Hand-held Raman Spectrometer

Jing Miao¹, Xingyu Si²

¹The King's School, Canterbury, United States of America; ²JINSP Company Limited, China, People's Republic of

Raman Spectroscopic Study in Identifying Carotenoids upon Illumination of Light during Carrot growth stages

Pooja Manik Badgujar, Yu Chun Wang, Chia-Liang Cheng
National Dong Hwa University, Taiwan

Surface-Enhanced Raman Spectroscopy-Based Detection of SARS-CoV-2 Through In Situ One-pot Electrochemical Synthesis of 3D Au-Lysate Nanocomposite Structures on Plasmonic Electrodes

Iris Baffour Ansah^{1,2}, Dong-Ho Kim^{1,2}, Sung-Gyu Park¹

¹University of Science and Technology, Korea, Republic of (South Korea); ²Korea Institute of Material Science

Studying Variations of Consolidated Dyed Harakeke Fibres Using Raman and Infrared Spectroscopy combined with Chemometrics

Piumika Samanali Garagoda Arachchige^{1,4}, Henry Dunne¹, Brownyn J. Lowe², Catherine A. Smith³, Sara Jane Fraser-Miller^{1,4}, Keith Christopher Gordon^{1,4}

¹Department of Chemistry, University of Otago, Dunedin, New Zealand; ²Centre for Materials Science and Technology, University of Otago, Dunedin, New Zealand; ³Archaeology, School of Social Sciences, University of Otago, Dunedin, New Zealand; ⁴The Dodd-Walls Centre for Photonic and Quantum Technologies, University of Otago, New Zealand

Simultaneous Raman and Infrared testing for better microplastic identification

Jay Anderson, Mustafa Kansiz, Christoph Krafft

Photothermal Spectroscopy Corp, United States of America

Raman Analyses of Planetary Analogue Materials in Preparation for Future Exploration Missions

Ian Hutchinson

University of Leicester, United Kingdom

RamAIn: Automatic Analysis of Microscopic Raman Spectral Maps

Jana Pilátová^{1,2}, Filip Peška¹, Martin Pilát¹, Peter Mojžeš¹

¹Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, CZ-12116 Prague 2, Czech Republic; ²Faculty of Science, Charles University, Viničná 5, CZ-12844 Prague 2, Czech Republic

Raman Spectroscopy in Extreme Environments

Hannah N Lerman, Ian B Hutchinson, Melissa McHugh

University of Leicester, United Kingdom

The SERS effect of uranyl ions on the Ag substrate and its application in the trace analysis of uranyl ions

Shaofei Wang

China Academy of Engineering Physics, China, People's Republic of

Simultaneous Raman and Optical Photothermal Infrared Spectroscopy of Bioplastics at Submicron Spatial Resolution

Curtis Marcott^{1,2}, Isao Noda^{1,3}

¹University of Delaware, United States of America; ²Light Ligh Solutions, United States of America; ³Danimer Scientific, United States of America

Calcite - aragonite alternating layers in recent mineral spring pisoliths from Corund, Romania

Zoltan Ferenc Pal, Tudor Tamas, Simona Cinta Pinzaru

Babes-Bolyai University, Romania

A Versatile DNA Origami-Based Plasmonic Nanoantenna for Label-Free Single-Molecule Surface-Enhanced Raman Spectroscopy.

Kosti Tapio¹, **Amr Mostafa**¹, Yuya Kanehira¹, Antonio Suma², Anushree Dutta¹, Ilko Bald¹

¹University of Potsdam, Germany; ²Temple University, United States

Application of Raman spectroscopy in studies on mechanisms of phase transitions in lead halide hybrid perovskitoids templated by hydrazinium derivatives

Jan Albert Zienkiewicz¹, Karolina Kalduńska², Katarzyna Fedoruk³, Tadeusz Muziol², Maciej Ptak¹

¹Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wrocław, Poland; ²Faculty of Chemistry, Nicolaus Copernicus University in Torun, Torun, Poland; ³Institute of Physics, Wrocław University of Science and Technology, Wrocław, Poland

(08/10/22)

(08/10/22)

Detecting Hydrogen Passing Through Graphene by Surface-Enhanced Raman Spectroscopy of 4-Nitrothiophenol

Younghyun Wy, Sang Woo Han

KAIST, Korea, Republic of (South Korea)

Development of dual SERS substrates using silver nanoshells and two kinds of graphene quantum dots

Han Yeong Lee¹, Hyejin Chang^{1,2}

¹Division of Science Education, Kangwon National University, Republic of Korea; ²Kangwon Radiation Convergence Research Support Center, Kangwon National University, Chuncheon 24341, Republic of Korea

Development of a new Raman measurement system for in situ measurements during high temperature microwave synthesis of inorganic materials

John Jamboretz¹, Andreas Reitz¹, Christina Birkel^{1,2}

¹Arizona State University, United States of America; ²Department of Chemistry and Biochemistry, Technische Universität Darmstadt

Limitations in the detection of Cancerous Human Colorectal Tissues by micro-Raman Spectroscopy

Maria Karnachoriti^{1,2}, Ioannis Stathopoulos³, Maria Anthi Kouri^{3,4}, Ellas Spyratou^{2,3}, Nikolaos Danias³, Nikolaos Arkadopoulos³, Marianthi Panagopoulou¹, Stavros Venetis⁵, Efstathios P. Efstathopoulos³, Yannis S. Raptis¹, Ioannis Seimenis³, Athanassios G. Kontos¹

¹National Technical University of Athens, Greece; ²Democritus University of Thrace; ³National & Kapodistrian University of Athens; ⁴University of Massachusetts Lowell; ⁵Alpha Information Technology S.A., Software & System Development

Raman study of undoped and Si-doped orthorhombic κ-Ga2O3 thin-films

Giulia Spaggiari^{1,2}, Piero Mazzolini^{1,2}, Anna Sacchi², Danilo Bersani², Antonella Parisini², Francesco Mezzadri³, Marcella N. Marggraf⁴, Markus R. Wagner⁴, Zsolt Fogarassy⁵, Ildikó Cora⁵, Béla Pécz⁵, Luca Seravalli¹, Matteo Bosi¹, Roberto Fornari^{1,2}

¹Dept. of Mathematical, Physical and Computer Sciences, University of Parma, Parma (Italy); ²Institute of Materials for Electronics and Magnetism (IMEM), CNR, Parma (Italy); ³Dept. of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parma (Italy); ⁴Technische Universität Berlin, Institute of Solid State Physics, Berlin (Germany); ⁵Centre for Energy Research, Hungarian Academy of Sciences, Institute for Technical Physics and Materials Science, Budapest (Hungary)

Tunable aluminum nanocrescents as a platform for circular dichroism spectroscopy and surface-enhanced Raman spectroscopy

Anh Nguyen, Amy Morren, Jennifer Shumaker-Parry

The University of Utah, United States of America

Spectral Characterization of High-Speed SERS Fluctuations

Makayla M Schmidt¹, Marit A Engevik¹, Nathan D Lemke¹, Alexandre G Brolo², Nathan C Lindquist¹

¹Bethel University, United States of America; ²University of Victoria, Canada

A Portable SERS-based Lateral Flow Assay Strip for Rapid and Sensitive Detection of SARS-CoV-2 Antigen

Younju Joung, Kihyun Kim, Jaebum Choo

Chung-Ang University, Korea, Republic of (South Korea)

Characterization of PHBHx-based SPEs for Li polymer battery

SUJIN LEE¹, YEONJU PARK², ISAO NODA^{3,4}, YOUNG MEE JUNG^{1,2}

¹Department of Chemistry, Institute for Molecular Science and Fusion Technology, Kangwon National University, Chuncheon 24341, Korea; ²Kangwon Radiation Convergence Research Support Center, Kangwon National University, Chuncheon 24341, Korea; ³Department of Materials Science and Engineering, University of Delaware, Newark, DE 19716, USA; ⁴Danimer Scientific, 140 Industrial Blvd., Bainbridge, GA 39817, USA

SERS-based microdroplet sensor for sensitive and reproducible detection of SARS-CoV-2

Sohyun Park, Namhyun Choi, Joung-II Moon, Kang Min Lee, Jaebum Choo

Chung-Ang University, Korea, Republic of (South Korea)

Ag modified porous Silicon SERS substrates for the real-time pathogenic bacteria detection in mastitic milk obtained from infected cattle

Divagar Muthukumar, Giorgi Shtenberg

Institute of agricultural engineering, Agricultural research organization, Israel

Migration study of organotin compounds from food packaging by surface enhanced Raman scattering

Luisa Mandrile¹, Andrea Mario Giovannozzi¹, Martina Vona¹, Jesus Salafranca², Gianmario Martra³, Andrea Mario Rossi¹

¹National Institute of Metrological Research (INRIM), Italy; ²University of Zaragoza, Spain; ³University of Torino, Italy

Pigments and aging influence on the common plastics waste Raman signal: sorting algorithm evaluation based on Raman Spectroscopy

Ioana Marica¹, Mihaela Aluaș¹, Ana Maria Hodoroaga², Simona Cîntă Pinzaru¹

¹Babeș-Bolyai University, Physics Faculty, Kogălniceanu 1, RO-400084 Cluj-Napoca, Romania; ²Babeș-Bolyai University, Faculty of Chemistry and Chemical Engineering, A. János 11, RO-400028 Cluj-Napoca, Romania

Probing Supramolecular Ligands by Ultraviolet Resonance Raman Spectroscopy: Molecular Tweezers

Tim Holtum¹, Philipp Rebmann², Vikas Kumar¹, Thomas Schrader², Sebastian Schluucker¹

¹University Duisburg-Essen, Physical Chemistry I, 45141 Essen, Germany; ²University Duisburg-Essen, Organic Chemistry, 45141 Essen, Germany

(08/10/22)

Raman and Surface Enhanced Raman Scattering (SERS) for the Detection of Trace Components in Drug Mixtures

Lea Gozdziński, Azam Shafiul, Margo Ramsay, Ashley Larnder, Ian Garber, Bruce Wallace, Dennis Hore
University of Victoria, Canada

Characterisation of synthetic inclusions containing CaS, Al₂O₃, MgO·Al₂O₃ and calcium aluminate (CaO)_x–(Al₂O₃)_y phases found in steels using Raman spectroscopy

Francis Gyakwaa, Matti Aula, Tuomas Alatarvas, Tero Vuolio, Qifeng Shu, Marko Huttula, Timo Fabritius
University of Oulu, Finland

Effect of Er interlayer on microstructure and composition of erbium oxide coating on steel

Shiping Zhang, Dan Yan, Ping Wu
School of Mathematics and Physics, University of Science and Technology Beijing, Beijing 100083, China

In situ tracking electrochemical CO₂ reduction reaction intermediates on Cu(111) and Cu(110) surfaces by Raman spectroscopy

Li Jian-Feng, Nataraju Bodapp, Zhao Yu
Department of Chemistry, Xiamen University, Xiamen 361005, China

Thermoelectric properties of lower concentration K-doped Ca₃Co₄O₉ ceramics

Ya-nan Li, Ping Wu, Shiping Zhang, Jinguang Yang
School of Mathematics and Physics, University of Science and Technology Beijing, Beijing 100083, China

Blue Phosphorene Nanoscrolls

Yitian Wang¹, Chenghuan Jiang², Qian Chen¹, Qionghua Zhou¹, Yuhao Xu³

¹Southeast University, China, People's Republic of; ²Nanjing Institute of Technology, People's Republic of; ³Prairie View A&M University, U.S.A.

Defect-induced Raman phonons in the van der Waals bonded ferromagnet Fe_{2.8}GeTe₂

Guofeng Cheng
Shanghai Institute of Ceramics, Chinese Academy of Sciences, China, People's Republic of

Charge Transfer in Core-Shell Au NRs-MBA@Cu₂O Structure Based on Surface-enhanced Raman Scattering

Lin Guo
Jilin University, People's Republic of China

Experimental vis-à-vis theoretical investigations on self-affine properties of SERS active substrates

Somsubhra Saha, Joydeep Chowdhury
Jadavpur University, India

Finding new chemometric tools for Raman spectra analysis: Fuzzy clustering of bacterial species detected at single-cell level by SERS

Nicoleta Elena Dina¹, Ana Maria Raluca Gherman¹, Alia Colniță¹, Daniel Sorin Marconi¹, Costel Sârbu²

¹National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania; ²Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Cluj-Napoca, Romania

In situ or colloidal prepared metal nanoparticles on E.coli and cyanobacteria for improved reproducible SERS

Daniel Zimmermann, Vanessa Rumpler, Daniel-Ralph Hermann, David Lilek, Birgit Herbinger, Katerina Prohaska
FHWN, Biotech Campus Tulln, Austria

Novel strategy for hot spots generation using tyramine-mediated crosslinking chemistry

Eungyeong Park¹, Sila Jin², Yeonju Park², Hyejin Chang^{2,3}, Young Mee Jung^{1,2}

¹Department of Chemistry, Kangwon National University, Chuncheon 24341, Korea; ²Kangwon Radiation Convergence Research Support Center, Kangwon National University, Chuncheon 24341, Republic of Korea; ³Division of Science Education, Kangwon National University, Chuncheon 24341, Republic of Korea

Raman based detection of ciprofloxacin in pharmaceutical formulations

Chen Liu^{1,2}, Lisa Müller-Böttcher³, Dagmar Fischer^{3,4}, Dana Cialla-May^{1,2}, Jürgen Popp^{1,2}

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SARS-CoV-2 Screening Using Raman Spectroscopy Enhanced with Flexible Nanoparticle Substrates

Wangcun Jia, Phuong Le, Robert Brown, George Peavy, Thomas Milner
University of California, Irvine, United States of America

Novel insights into the oxidation behaviour of Nitride Bonded Silicon Carbide (NBSC) by in-situ Raman spectroscopy

Johannes T. Kehren¹, Marcel Bastian², Sinje U. Zimmer¹, Christian Dannert², Olaf Krause¹

¹Hochschule Koblenz, Materials Engineering Glas & Ceramics, Höhr-Grenzhausen, Germany; ²Forschungsgemeinschaft Feuerfest e.V., Höhr-Grenzhausen, Germany

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Depolarization ratios and intensity redistribution in methane Raman spectrum as a function of pressure

Dmitry Petrov, Ivan Matrosov, Aleksandr Tanichev

Institute of monitoring of climatic and ecological systems,
Russian Federation

Animal Feedstuff Inspection using Shifted Excitation Raman Difference Spectroscopy

Kay Sowoidnich¹, Michael Oster², Klaus Wimmers², Martin Maiwald¹, Bernd Sumpf¹

¹Ferdinand-Braun-Institut, Berlin, Germany; ²Forschungsinstitut für Nutztierbiologie, Dummerstorf, Germany

Biochemical Origin of Raman-Based Diagnostics of Huanglongbing in Grapefruit Trees

Tianyi Dou¹, Lee Sanchez¹, Shankar Pant², Sonia Irigoyen², Nicolas Goff¹, Zhongliang Xing¹, Prakash Niraula², Kranthi Mandadi³, Dmitry Kurouski¹

¹Department of Biochemistry and Biophysics, Texas A&M University, College Station, TX, United States; ²Texas A&M AgriLife Research and Extension Center at Weslaco, Weslaco, TX, United States; ³Department of Plant Pathology and Microbiology, Texas A&M University, College Station, TX, United States

A SERS-based capillary sensor for Galactose Detection using 4-Mercaptophenylboronic Acid-Immobilized Silver Nanoshells

Eun Hae Heo¹, Hyejin Chang^{1,2}

¹Division of Science Education, Kangwon National University, Chuncheon 24341, Republic of Korea; ²Kangwon Radiation Convergence Research Support Center, Kangwon National University, Chuncheon 24341, Republic of Korea

Raman spectroscopy quantitative analysis of triclosan incorporated in nanofibrous layers

Michal Knor, Adela Kotzianova, Kristyna Skuhrovcova, Lenka Bardonova, Ondrej Zidek, Vladimir Velebny

Contipro a.s., Czech Republic

Taxonomic identification of Campylobacter spp. by Surface-enhanced Raman Scattering according to the International Organization for Standardization (ISO) methods.

Krzysztof Niciński

Institute of Physical Chemistry Polish Academy of Science, Poland

Particle Size-dependent Onset of Quantum Regime in Ideal Dimers of Gold Nanospheres

Sebastian Schlücker, Jesil Jose, Ludmilla Schumacher, Mandana Jalali, Jan Taro Svejda, Daniel Erni

University of Duisburg-Essen, Germany

Kitaev Magnetism and Fractionalized Excitations in Double Perovskite Sm₂ZnInO₆

Birender Singh¹, Michael Vogl², Sabine Wurmehl^{2,3}, Saicharan Aswartham², Bernd Büchner^{2,3}, Pradeep Kumar¹

¹Indian Institute of Technology Mandi, India; ²Leibniz-Institute for Solid State and Materials Research, IFW-Dresden, 01069 Dresden, Germany; ³Institute of Solid State Physics, TU Dresden, 01069 Dresden, Germany

Salivary glands analyzed by Raman spectroscopy and surface-enhanced Raman spectroscopy (SERS): Towards development of the novel tool for clinical diagnosis

Marta Czaplicka¹, Aneta Aniela Kowalska¹, Ariadna Barbara Nowicka¹, Wojciech Kukwa³, Zuzanna Gronkiewicz², Dominik Kurzydłowski², Agnieszka Kamińska¹

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Deep UV Raman spectroscopy for bio-pharma cleaning validation

Krishnakumar Chullipalliyalil, Liam Lewis, Michael McAuliffe

Center for Advanced Photonics and Process Analysis (CAPP), Cork Institute of Technology, Ireland.

UVRR monitoring of temperature and water effects on choline based DES

Mariagrazia Tortora¹, Barbara Rossi¹, Monica Ferro², Greta Colombo Dugoni², Maria Enrica Di Pietro², Andrea Mele²

¹Elettra Sincrotrone Trieste; ²Politecnico di Milano, Department of Chemistry, Materials and Chemical Engineering "Giulio Natta"

Soft polyacrylamide hydrogels as a cell culture matrix for mechanical and spectroscopic study of glioblastoma development

Katarzyna Pogoda, Ewa Pięta, Klaudia Suchy, Czesława Paluszkiewicz, Wojciech Kwiatek

Institute of Nuclear Physics Polish Academy of Sciences, Poland

The impact of surface-roughness in SERS assessed by a fully quantum mechanical approach

Amirhassan Khodadadi¹, Raul D. Rodriguez², Evgeniya Sheremet², Stefanie Gräfe¹, Stephan Kupfer¹

¹Friedrich Schiller University of Jena, Germany; ²Tomsk Polytechnic University, Russia

Tuning the Water Vapor Adsorption Properties of UiO-66 via Cr-doped

Sen Chen, Ping Wu, Guodong Fu, Shiping Zhang, Shang Liu
University of Science and Technology Beijing, China, People's Republic of

Vibrational properties of PbI₂: from bulk to monolayer

Ariete Righi, Thiago Seniuk, Rafael N. Gontijo, Joyce C. C. Santos, Bernardo R. A. Neves, Marcos A. Pimenta
Departamento de Física, UFMG, Brazil

(08/10/22)

Gold nanotriangle-based SERS biosensor for adiponectin detection for early diagnosis of gestational diabetes mellitus

Wansun Kim¹, Ayoung Bang¹, Hyerin Lee¹, Sujeong Lee², Yeon-Hee Kim², Samjin Choi¹

¹Department of Biomedical Engineering, College of Medicine, Kyung Hee University, Seoul, Republic of Korea; ²Department of Obstetrics & Gynecology, Uijeongbu St Mary's Hospital, College of Medicine, The Catholic University of Korea, Gyeonggi-do, Republic of Korea

Electro-Inductive Effect—Electrodes That Act as Functional Groups to Control Electronic Properties and Chemical Reactivities of a Molecule

Hojin Ahn, Sang Woo Han

KAIST, Korea, Republic of (South Korea)

High-speed time-domain Raman spectral imaging with compressed sensing

Shigekazu Takizawa¹, Kotaro Hiramatsu¹, Shunsuke Ono², Kesuke Goda^{1,3,4}

¹The University of Tokyo, Japan; ²Tokyo Institute of Technology, Japan; ³University of California, Los Angeles, USA; ⁴Wuhan University, China

Enhanced Raman Scattering on Nine 2D van der Waals Materials

Hikari Kitadai¹, Xingzhi Wang¹, Nannan Mao², Shengxi Huang³, Xi Ling^{1,4,5}

¹Boston University, United States of America; ²Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, MA 02139, United States; ³Department of Electrical Engineering, The Pennsylvania State University, University Park, Pennsylvania 16802, United States; ⁴Division of Materials Science and Engineering, Boston University, Boston, Massachusetts 02215, United States; ⁵The Photonics Center, Boston University, Boston, Massachusetts 02215, United States

Spectro-Nanoscopy of Ultrathin Films of Organic and Biological Specimens via Infrared Photo-induced Force Microscopy (IR PiFM)

Sung Park, Padraic O'Reilly, Beihang Yu

Molecular Vista, United States of America

THURSDAY POSTER PRESENTATIONS

Poster THU-A: Poster Session Thursday Afternoon

Thursday, August 18, 2022
11:50am - 2:25pm

Hyper-Raman Spectroscopy of Chiral Nanostructures: Shining Circularly Polarised Light on the Elusive Forbidden Raman Modes

Robin Raffe Jones¹, Ventsislav K Valev¹, Daniel Wolverson¹, Tim Batten², Brian Smith²

¹University of Bath, United Kingdom; ²Renishaw Plc, Wotton-under-Edge, United Kingdom

Metrology considerations in coherent Raman scattering microscopy

Dimitrios Tsikritsis, Beth Hinchliffe, Natalie Anne Belsey
National Physical Laboratory, United Kingdom

Frequency modulation CARS imaging with a fiber optical parametric oscillator

Tim Hellwig¹, Maximilian Brinkmann¹, Carsten Fallnich²
¹Refined Laser Systems GmbH, Germany; ²Institute of Applied Physics, University of Münster, Germany

A label-free multimodal nonlinear microscope for biological applications

Arianna Bresci¹, Benedetta Talone¹, Francesco Manetti¹, Valentina Parodi², Martina Recchia¹, Carlo Valensise¹, Giulio Cerullo¹, Dario Polli¹

¹Department of Physics, Politecnico di Milano, Italy; ²Department of Chemistry, Materials and Chemical Engineering "G. Natta", Politecnico di Milano, Italy

Phonon hydrodynamic transport in 2D materials by ultrafast laser-based techniques

Grazia Raciti

University of Basel, Switzerland

Surface-Enhanced Femtosecond Stimulated Raman Spectroscopy: Effects of the Energy of Plasmon Resonances on Dispersive Line Shapes in Spectra

Patryk Pyrcz, Sylwester Gawinkowski

Institute of Physical Chemistry Polish Academy of Sciences, Poland

Ferrocene appended Porphyrins; a Spectroscopic and Computational study

Joseph Mapley

University of Otago, New Zealand

(08/10/22)

Excited State Dynamics of Arylazopyrazole Photoswitches

Till Reichenauer¹, Vikas Kumar¹, Katharina Ziegler², Bart Jan Ravoo², Sebastian Schlücker¹

¹Department of Chemistry and Center for Nanointegration Duisburg-Essen (CENIDE), University Duisburg-Essen, Essen, Germany; ²Organic Chemistry Institute and Center for Soft Nanoscience, Westfälische Wilhelms-Universität Münster, Münster, Germany

At-Line Monitoring of Downstream Process by Time-gated Raman technology

Mari Tenhunen, Amutha Daniel

Timegate Instruments Oy, Finland

Low Frequency Raman microscopy for API polymorphisms analysis

Thibault Brulé, Céline Eypert, Massimiliano Rocchia

HORIBA France SAS, France

Towards explainable AI using molecular weight windows to probe disease biomarkers using vibrational spectroscopy

Edward Duckworth¹, Deb Roy¹, Murali Krishna², Venkat Kanamarlapudi¹, Matt Mortimer³, Bilal Al-Sarireh³

¹Swansea University, United Kingdom; ²Advanced Center for Treatment, Research and Education in Cancer (ACTREC), India; ³Morrison Hospital, United Kingdom

Raman microspectroscopy highlights new features on hair greying.

Raoul VYUMVUHORE¹, Laurie VERZEAUX¹, Sophie GILARDEAU¹, Sylvie BORDES¹, Elodie AYMARD¹, Michel MANFAIT², Brigitte CLOSS¹

¹SILAB, R&D Department, Brive la Gaillarde, France; ²BioSpecT (Translational BioSpectroscopy) EA 7506, Université de Reims Champagne-Ardenne, Reims, France

Raman spectroscopy for rapid at-line assessment of pluripotency in stem cells

Jeppu Hagedorn^{1,2}, Caroline Halloin¹, Lars Poulsen¹, Martin A.B. Hedegaard²

¹R&ED, Novo Nordisk A/S, 2760 Maaloev, Denmark; ²Section for Biotechnology, Technical Faculty, University of Southern Denmark, 5230 Odense M

Ultraviolet resonance Raman (UVR) spectroscopy for label-free monitoring of peptide recognition by supramolecular ligands

Tim Holtum, Luca Vincenzo Supovec, Jens Voskuhl, Michael Giese, Thomas Schrader, Sebastian Schlücker

University of Duisburg-Essen, Germany

Shedding Light into the effect of Fusarium circinatum fungus on pines

Inês P. Santos¹, Daniel Martín¹, Glória Pinto², Pedro Monteiro², Maria P. Marques¹, Luís Batista de Carvalho¹

¹University of Coimbra, Portugal; ²University of Aveiro, Portugal

Degradation of Insulin Amyloid Fibrils Analyzed by Atomic Force Microscopy and Surface-Enhanced Raman Spectroscopy

Erwan Yudiar Darussalam^{1,2}, Péterfi Orsolya⁴, Tanja Deckert-Gaudig¹, Volker Deckert^{1,2,3}

¹Leibniz Institute of Photonic Technology (IPHT), Germany; ²Institute of Physical Chemistry (IPC), Friedrich Schiller Universität Jena, Germany; ³Institute of Quantum Science and Engineering, Texas A&M University, College Station, USA; ⁴George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Târgu Mureș, Romania

In vitro enzymatic activity sensing platform based on surface enhanced Raman scattering

Gyudo Lee¹, Yoochan Hong²

¹Korea University, Korea, Republic of (South Korea); ²KIMM, Korea, Republic of (South Korea)

Interactions of phospholipid vesicle with Fe₃O₄ nanoparticle: FTIR and Raman vibrational spectroscopies study

Gyeong Bok Jung¹, Seong Jin Back¹, Jisun You², Jeunghee Park²

¹Chosun University, Korea, Republic of (South Korea); ²Korea University Sejong Campus, Korea, Republic of (South Korea)

In search of spectroscopic signatures of Alzheimer's disease: the investigation of Porphyromonas gingivalis by SERS coupled with Principal Component Analysis.

Evelin Witkowska

Institute of Physical Chemistry Polish Academy of Science, Poland

Who's who? Discrimination of Breast Cell Lines by Raman Microspectroscopy

I.P. Santos¹, C.B. Martins^{1,2}, L.A.E. Batista de Carvalho¹, M.P.M. Marques^{1,2}, A.L.M. Batista de Carvalho¹

¹Unidade de I&D Química-Física Molecular. Department of Chemistry, University of Coimbra; ²Department of Life Sciences, University of Coimbra

A spectroscopic – based approach for the early assessment of the drug induced phospholipidosis in endothelium

Ewelina Bik^{1,2}, Jagoda Orelanska², Lukasz Mateuszuk¹, Stefan Chlopicki^{1,3}, Malgorzata Baranska^{1,2}, Katarzyna Majzner^{1,2}

¹Jagiellonian Centre for Experimental Therapeutics (JCET), Jagiellonian University, 14 Bobrzynskiego Str., 30-348 Krakow, Poland; ²Faculty of Chemistry, Jagiellonian University, 2 Gronostajowa Str., 30-387 Krakow, Poland; ³Chair of Pharmacology, Jagiellonian University, 16 Grzegorzeczka Str., 31-531 Krakow, Poland

Machine Learning Analysis of Spectral Data using Bacterial Metabolic Networks for Signal Amplification

Hong Wei, Yixin Huang, Peter Santiago, Allon Hochbaum, Regina Ragan

UC Irvine, United States of America

(08/10/22)

Real-time monitoring of mammalian cell culture by Time-gated Raman Spectroscopy

Amuthachelvi Daniel, Mari Tenhunen

Timegate Instruments, Finland

Enhanced Tri-modal Optical-Photothermal Infrared (O-PTIR) Spectroscopy – Advances in Spatial Resolution, Sensitivity & Tri-modality (IR, Raman & Fluorescence)

Mustafa Kansiz

Photothermal Spectroscopy Corp., United States of America

Single-photon-sensitive infra-red luminescence spectroscopy of live cells

Sergey V. Pereverzev

Lawrence Livermore National Laboratory, United States of America

Identification of Enantiomers Using Low-Frequency Raman Spectroscopy

Vinayaka Harshothama Damle, Hagit Aviv, Yaakov R Tischler

Bar-Ilan University, Israel

Nanoscale optical microscopy and spectroscopy – from real space observation of polaritons to chemical identification on biomaterials

Philip Schaefer, Nicolai Hartmann

neaspec GmbH, Germany

CARS endomicroscopic imaging probe enabled by a double-core double-clad fiber and related focus-combining micro-optical concept

Ekaterina Pshenay-Severin¹, Gregor Matz¹, Karl Reichwald¹, Jörg Bierlich², Jens Kobelke², Hyeonsoo Bae², Tobias Meyer², Bernhard Messerschmidt¹, Jürgen Popp^{2,3}

¹GRINTECH GmbH, Germany; ²Leibniz Institute of Photonic Technology, Germany; ³Institute of Physical Chemistry and Abbe Center of Photonics, Friedrich Schiller University Jena, Germany

Saliva Raman Spectroscopy: Exploring stratification of subjects with oral premalignant disorders

ARTI HOLE¹, NIKITA MAHESHWARI², SHEETAL CHOUDHARY³, ATUL DESHMUKH², MURALI KRISHNA CHILAKAPATI¹

¹ACTREC,TMC,KHARGHAR,NAVI MUMBAI , INDIA, India; ²D. Y. Patil University, Navi Mumbai, India; ³Yerala Dental College, Kharghar, Navi Mumbai,India

Defects in polymer multilayer films: a new way to investigate based on Raman microscopy

Thibault Brulé, Céline Eypert, Massimiliano Rocchia

HORIBA France SAS, France

Induced thermal effects correlated to strain analysis on Through Silicon Vias by means of Raman Spectroscopy

Aura Daniela Lubio Cervantes^{1,2}, Andreas Dörfler^{2,3}, Julien Plathier², Thomas Dequivre¹, Gitanjali Kolhatkar², Serge A. Charlebois¹, Andreas Ruediger²

¹Université de Sherbrooke, Canada; ²Institut National de la Recherche Scientifique; ³Munich University of Applied Sciences

Transportable high-performance Raman system for arts and cultural heritage analysis

Tim Batten¹, Riccardo Tagliapietra², Tim Prusnick¹

¹Renishaw plc, United Kingdom; ²Renishaw S.p.A, Italy

Low-frequency Raman spectroscopy facilitated by a novel narrow linewidth 785 nm diode laser with enhanced spectral purity

Magnus Rådmark, Gunnar Elgerona, Håkan Karlsson, Peter Jänes

Cobolt AB, Sweden

Rapid identification of different subtypes of the same bacteria based on Raman spectroscopy

睿明 赵¹, 龚 龚²

¹塔里木大学, China, People's Republic of; ²北京服装学院, china, people's Republic of

Optimising and understanding the spectroscopic signatures associated with planetary surface processes

Sidhi Karavadra, Ian B Hutchinson, Hannah N Lerman, Melissa McHugh

University of Leicester, United Kingdom

Raman Hetero Two-Dimensional Correlation Spectroscopy: A powerful technique for monitoring active centres in complex environments

Julian Hniopek^{1,2}, Michael Schmitt², Jürgen Popp^{1,2}, Thomas Bocklitz^{1,2}

¹Leibniz Institute of Photonic Technologies, Jena, Germany; ²Friedrich Schiller University Jena, Jena, Germany

Rapid method for analyzing the biochemical content of the honeys produced by Tetrigona sp and Apis mellifera

Bibin Bintang Andriana¹, Pampang Parikesit², Susanti Withaningsih², Pradjna Novedya Paramitha¹, We Nurdiana³, Hidetoshi Sato¹

¹Department of Biomedical Chemistry, Graduate school of Science and Technology, Kwasei Gakuin University, 2-1 Gakuen, Sanda-shi, Hyogo-ken, 669-1337. Japan.; ²Department Biology, Center for Environment and Sustainability Science, Padjadjaran University. Jl Sekeloa Selatan No. 1 Bandung 40132, West Java, Indonesia.; ³Sintang Orangutang Center, Jl. M. Saad No.8-Sintang 78611 Kelurahan Tanjung Puri, West Kalimantan, Indonesia.

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Insights on the dehydration process of PNiPAAm based hydrogels using 2D Raman correlation spectroscopy

Yeonju Park¹, Minkyung Kim², Hoeil Chung³, Young Mee Jung^{1,2}

¹Kangwon Radiation Convergence Research Support Center, Kangwon National University, Chuncheon 24341, Republic of (South Korea); ²Department of Chemistry, Institute for Molecular Science and Fusion Technology, Kangwon National University, Chuncheon 24341, Republic of (South Korea); ³Department of Chemistry and Research Institute for Convergence of Basic Science, Hanyang University, Seoul 04763, Republic of Korea

Drop Coating Deposition Raman Spectroscopy of Liposomes on Substrates with Different Roughness

Alžběta Kůžová¹, Anna Kuzminova², Ondřej Kylián², Eva Kočíšová¹

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Raman Spectroscopy Study of Commercial Activated Carbons Aging Processes

Sari Katz, A. Pevzner, V. Shepelev, S. Marx, H. Rotter, T. Amitay-Rosen, I. Nir

On Sabbatical leave from Soreq NRC

Effects of types of reduction and optimization in graphene oxide multilayers under influence laser power

Adela Aurora Pérez Carreño^{1,2}, Lucy Marleny Huayllacayan Mallqui³, Juan Abraham Méndez Velasquez⁴, Larissa Zoraya Hinojosa Vidal³, Carmen Sandra Guzman Calcina¹

¹Universidad Ricardo Palma, Perú; ²Universidade Federal Do ABC, Brazil; ³Pontificia Universidad Católica del Perú, Perú; ⁴Universidad del Callao, Perú

Raman Imaging System for 2D Materials Characterization

Sergej Shashkov, Valery Kopachevsky, Alexander Kudryakov, Alexander Grigorenko

SOL instruments, Belarus

Application of Raman Imaging to the Chemical Characterization and Dating of Paper

Enrico Pigorsch, Antje Harling

Papiertechnische Stiftung (PTS), Germany

Raman Spectroscopy Study of 95.5%AgNbO₃-4.5%LiTaO₃ Ceramics

Svetlana Krylova

Kirensky Institute of Physics Federal Research Center KSC SB RAS, Russian Federation

Rh-P25 Photocatalysts for degradation of glyphosate

Jennyffer Stefania Martínez Quimbayo¹, Manoj Ghosal², Bryan Heilala³, Samuli Urpelainen², Satu Ojala¹

¹Environmental and Chemical Engineering, Faculty of Technology, University of Oulu, Oulu, Finland.; ²Nano and Molecular Systems Research Unit, University of Oulu, Oulu, Finland.; ³Timegate Instruments Inc, Oulu, Finland.

Mechanisms of the phase transition in imidazolium lead bromide perovskites studied using Raman spectroscopy

Szymon Piotr Smolka, Anna Gagor, Dawid Drozdowski, Maciej Ptak, Mirosław Mączka

Institute of Low Temperature and Structure Research Polish Academy of Sciences, Poland

Raman spectroscopy: A tool for analyzing phase transitions in hypophosphite coordination polymers under high pressure

Maciej Ptak¹, Mirosław Mączka¹, Szymon Sobczak², Mikolaj Kryś², Fabio Furtado Leite³, Daniel Linhares Militão Vasconcelos⁴, Waldeci Paraguassu³, Paulo Tarso Cavalcante Freire⁴, Andrzej Katrusiak²

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Automated and Reproducible Synthesis of Gold Nanoparticles for SERS

Roland Grzeschik, Asen Dankov, Laurin Hensen, Sebastian Schlücker

Universität Duisburg-Essen, Germany

Doping Effect of Conducting Polymer Investigated by in-situ Raman Spectroscopy

Xinxin Song, Butian Zhang, Youwei Zhang, Shun Wang

MOE Key Laboratory of Fundamental Physical Quantities Measurement & Hubei Key Laboratory of Gravitation and Quantum Physics, School of Physics, Huazhong University of Science and Technology, Wuhan 430074, China

In situ study of the mineral reactions during hydration in calcium aluminate cements (CAC)

Sinje U. Zimmer¹, Olaf Krause¹, Kerstin Hauke², Thorsten Geisler²

¹Hochschule Koblenz, Materials Engineering Glas & Ceramics, Höhr-Grenzhausen, Germany; ²University Bonn, Institute of Geoscience, Bonn, Germany

Study on Water Vapor Adsorption Properties of Mn-Doped MIL-101 (Cr)

Shang Liu, Ping Wu, Shiping Zhang, Guodong Fu, Dan Yan

School of Mathematics and Physics, University of Science and Technology Beijing, Beijing 100083, China

(08/10/22)

In Situ Observe Silicon Nitriding Process Using Raman Spectroscopy

Jinguang Yang, Ping Wu, Dan Yan, Shiping Zhang, Ya-Nan Li, Li Wang

University of Science and Technology Beijing, China, People's Republic of

Dielectrophoretic trap made via femtosecond laser micromachining for separation of bacteria from fluids and SERS detection

Tomasz R. Szyborski¹, Yuriy Stepanenko^{1,2}, Patrycja Piecyk¹, Krzysztof Niciński¹, Dorota Korsak³, Ariadna Nowicka¹, Agnieszka Kamińska¹

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Raman-scattering studies of pressure-induced phase transitions in perovskite-like dicyanamide frameworks

Mirosław Maczka¹, Maciej Ptak¹, Anna Gagor¹, Fabio Furtado Leite², Waldeci Paraguassu²

¹Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Poland; ²Faculdade de Física, Universidade Federal do Para, 66075-110 Belem, Brazil

Ensemble-level single particle characterisation of SERS nanoparticles

Jana Ockova

The Institute of Photonics Sciences Barcelona (ICFO), Spain

Transfer of chirality from chiral capped silver nanoparticles to achiral adsorbate evidenced by surface-enhanced resonance Raman optical activity

Moumita Das^{1,2}, Debraj Gangopadhyay¹, Petr Bouřil^{1,2}

¹Institute of Organic Chemistry and Biochemistry, Academy of Sciences, Flemingovo náměstí 2, Prague 16610, Czech Republic; ²Department of Analytical Chemistry, University of Chemistry and Technology, Technická 5, Prague 16628, Czech Republic

SERS-PCR ASSAYS OF SARS-COV-2 USING AU NANOPARTICLES-ANCHORED AU NANODIMPLE SUBSTRATES

Hajun Dang¹, Yixuan Wu¹, Sung-Gyu Park², Jaebum Choo¹

¹Department of Chemistry, Chung-Ang University, Seoul, South Korea; ²Advanced Nano-Surface Department, Korea Institute of Materials Science (KIMS), South Korea

Monocrystalline Gold Platelets as a Platform for Reproducible High-Performance SERS Substrates

Thien Anh Le^{1,2}, Henriette Maaß^{1,2}, Enno Schatz^{1,2}, Thorsten Feichtner¹, Bert Hecht¹

¹NanoOptics & Biophotonics group, Experimental Physics 5, University of Wuerzburg, Germany; ²NanoStruct GmbH, Wuerzburg, Germany

Gold Nanocrystals on Glass Nanopipette for In-situ Intracellular Surface-Enhanced Raman Spectroscopy

Guili ZHAO, Aleix Guell

Ecole Polytechnique, France

Point of Care Detection of Drug Induced Liver Injury using a SERS Based LIFA Device

Benjamin Clark¹, Sian Sloan-Dennison¹, Kathleen Scullion³, James Dear³, Dieter Bingemann², Paul Fineran³, David Creasey², Cicely Ramthmell², Karen Faulds¹, Duncan Graham¹

¹University of Strathclyde, United Kingdom; ²Wasatch Photonics, United States of America; ³University of Edinburgh, United Kingdom

Structural Orientation of Aromatic Thiols on Au(111) Surface: Experiment and Theory

Joscha Hekele, Matthias Linke, Thomas Keller, **Jesil Jose**, Marvin Hille, Eckart Hasselbrink, Sebastian Schluucker, Peter Kratzer

University of Duisburg-Essen, Germany

SERS-based Kinetic Monitoring of the Platinum-catalyzed Hydrogen Reduction of the Three Nitrothiophenol Constitutional Isomers (2/3/4-NTP)

Daniel Schäfer, Jesil Jose, Roland Grzeschik, Sebastian Schlücker

Universität Duisburg-Essen, Germany

SERS-based study assisted by chemometric methods as a tool for differential diagnosis of vaginal infections

Sylvia Berus¹, Beata Młynarczyk-Bonikowska², Monika Adamczyk-Popławska³, Agnieszka Kamińska¹

¹Institute of Physical Chemistry, Polish Academy of Science, Kasprzaka 44/52, 01-224 Warsaw, Poland; ²Department of Dermatology and Venerology, Medical University of Warsaw, Koszykowa 82a, 02-008 Warsaw, Poland; ³Department of Biology, University of Warsaw, Miecznikowa 1, 02-096 Warsaw, Poland

SERS-like effect using hexagonal Boron Nitride as substrate

Jessica Santos Lemos¹, Andreij de Carvalho Gadelha¹, Cristiano Fantini Leite¹, Eliel Gomes da Silva Neto²

¹Federal University of Minas Gerais, Brazil; ²Federal University of Bahia, Brazil

SERS-active Fe₃O₄@TiO₂-Au nanocomposites as a Reusable Photocatalyst

Sila Jin¹, Shuang Guo², Eungyeong Park², Yeonju Park¹, Lei Chen³, Young Mee Jung^{1,2}

¹Kangwon Radiation Convergence Research Support Center, Kangwon National University, Korea; ²Kangwon National University, Republic of Korea; ³Jilin Normal University, P.R. China

New Insight of Charge Transfer Enhancement: Carrier Density Effect

Lei Chen¹, **Shuang Guo**², **Sila Jin**², **Young Mee Jung**²

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(08/10/22)

Effect of conductivity and SERS activity by temperature-mediated crystallinity changes of PEDOT:PSS organic semiconductor

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Development of the surface enhanced=Raman spectroscopy substrate using convective self-assembly method

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Theoretical Investigation of 3D Near-Field Probes

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Sample extraction and detection methods for SERS-based food safety applications

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Dynamic DNA Origami/Gold Nanoparticle Hybrid Device for Distance-controlled Dimer Assembly

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Determination of the limit of detection of multiple pesticides utilizing surface enhanced Raman spectroscopy (SERS)

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TERS and TEPL imaging of 2D Materials

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Studying phase separation in Lipid Bilayers Mixture and detection of femtomolar graphene solution in bilayers using TERS

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Tip enhanced Raman spectroscopy and chemical imaging of cyclo[18]carbon by density functional theory

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Multifunctional Copper Nanocubes: A Platform for SERS Activity and Specific CO2 Reduction

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Deep-UV SERS of Bio- and Explosive Molecules using Rhodium Nanoparticles

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Evaluation and Metrology of Surface-Enhanced Raman Scattering (SERS) substrates

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DNA origami assisted gold dimers as SERS substrates on optical fiber tips for direct miRNA detection using hairpin probes

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Plasmonic catalysis of different molecules on Au/Ag nanoarrays monitored by surface-enhanced Raman spectroscopy

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Surface-enhanced Raman spectra of KFeO2 nanoparticles

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The charge density wave state in 4H-NbSe₂: Effect of dimensionality, proximity, and magnetic field

Suvodeep Paul, Devesh Negi, Saheb Karak, Bommareddy Poojitha, Chandan Patra, R. P. Singh, Ravi Shankar Singh, Surajit Saha

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Vibrational spectroscopic investigation of molecular structure, hindered-rotation, vibrational properties and other molecular characteristics of 1-Methoxy-4-(2-tosylvinyl) benzene supported by DFT analysis

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Comparison of Gold and Silver nano thin films for chemical sensing of Tenofovir using Surface Enhanced Raman Spectroscopy.

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Synthesis monitoring of Silver/Gelatin crosslinker nanocomposites on silver nano thin films, for molecular sensor applications using Raman spectroscopy.

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Line-Scanning VSFG Hyperspectral Microscopy for Imaging Self-Assembled and Biomimetic Materials

Zishan Wu, Jackson Wagner, Wei Xiong

UCSD, United States of America

The harmful effects of Mg segregation on InGaN/GaN light-emitting diodes

TAEYOUNG PARK

UNI-RISCO LED center, United States of America

Non-destructive Raman identification of barium ferrite phase in powders and very thin film samples

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