EVC17 ECOSS37

Programme

Monday 17 June 2024

Time	Room	Programme
8:45 am to 9:30 am		Registration
9:00 am to 12:00 pm	Theatre, Hall Q	VTC3 - Clean Vacuum and UHV Trainer: Keith Middleman
9:30 am to 10:00 am	Auditorium	Opening Session Chairs: Dr. Oleg B. Malyshev and Prof. Martin McCoustra
10:00 am to 10.30 am	Auditorium	Opening Talk: Prof. Jim Clark Session Chairs: Dr. Oleg B. Malyshev and Prof. Martin McCoustra
10.30 am to 11:00 am	Hall Q	Morning Break
11:00 am to 12:35 pm	Auditorium	Advances in Experimental and Theoretical Methods 1 - MoPS1A: ASS+SS+SE Session Chair: Justin Wells Feature Talk: Boyao Liu 11:00 am - 11.15 am Yousef Alharbi: Characterisation of a novel detector and analyser of low-energy electrons for surface analysis 11.15 am - 11:30 am Dr Christopher Walker: Simulations of alternative forms of the Bessel box electron energy analyser 11:30 am - 11:45 am Dr Alex Walton: Probing the solid/liquid interface in X-Ray Phtotoelectron Spectroscopy: A droplet-based approach 11:45 am - 12:00 pm Hermann Nienhaus: Contact electrification monitored with ultra-high sensitivity and microsecond time-resolution 12:00 pm - 12:15 pm Jakub Schusser: Towards Robust Dichroism in Angle-Resolved Photoemission 12:15 pm - 12:35 pm Boyao Liu: Experimental Characterization of Defect-Induced Phonon Lifetime Shortening
	King's Suite	Metal Surfaces - Adsorption, Desorption and Reactions 1 - MoPS1K: ASS+SS+SE Session Chair: Jacek Goniakowski Invited Talk: Hans-Peter Steinrück 11:00 am - 11.30 am Prof. Hans-Peter Steinrueck: Modification of the surface properties of a Pt surface by ionic liquids 11:30 am - 11:45 am Dr. Isheta Majumdar: Ultra-thin metal oxide superstructures grown on Pd as passivation interlayers at the metal/porphyrin interface 11:45 am - 12:00 pm Abdul Rehman: Work Function Dependent Reduction of Transition Metal Nitrides (TMNs) in Hydrogen Environments 12:00 pm - 12:15 pm Al Rossin: Understanding the passivation layer formed by tolyltriazole on copper, bronze, and brass surfaces 12:15 pm - 12:30 pm Miss Ines Bertaso: The adsorption and reactivity of N-heterocyclic carbenes on ultrathin films of reactive metals on Au

	Queen's Suite - Thomson Room	**Low-dimensional Thin Film Materials - MoPS1T: TF** **Session Chair: Maarit Karppinen** **Invited Talk: Rebecca Clulow** **11:00 am - 11:30 am Dr Rebecca Clulow**: High entropy proton conducting perovskites for solid oxide fuel cells **11:30 am - 11:45 am Msc Eng. Jan Raczynski**: Thermal evolution of the metal/PtSe2 systems studied by Raman Spectroscopy **11:45 am - 12:00 pm Thiago De Souza Lamim**: Growth dynamics and mechanical properties of TiAl(Si)N monolayers and multilayers deposited by HiPIMS on Si and WC-Co substrates **12:00 pm - 12:15 pm Dr Nilanthy Balakrishnan**: Substrate-induced strain in molybdenum disulfide thin films grown by aerosol-assisted chemical vapour deposition **12:15 pm - 12:30 pm Daria M. Cegiełka**: N-heterocyclic carbenes – The design concept for densely packed and thermally ultra-stable aromatic self-assembled monolayers
	Queen's Suite - Cockcroft Room	**Large Vacuum Systems - MoPS1C: VST** **Session Chair: Junichiro Kamiya** **Feature Talk: Carlo Scarcia** **11:00 am - 11:15 am Luisa Spallino**: Low energy electron irradiation as mitigation strategy for two potential showstoppers in future gravitational wave detectors **11.15 am - 11:30 am Qingzhou Yu:** Investigation of the X-type metal seal for future fusion reactor **11:30 am - 11:45 am Dr Chris Peters**: Optimising high integrity vacuum viewport design and manufacture **11:45 am - 12:05 pm Carlo Scarcia**: The Einstein Telescope beampipe vacuum
12:30 pm to 2:00 pm	Hall Q	**Lunch**
12:30 pm to 1:30 pm	Hall Q	**Maximising The Benefits of Your Membership** **Speaker: Matthew Lovell**
2:00 pm to 3:30 pm	Auditorium	**Advances in Experimental and Theoretical Methods 2** - MoPS2A: ASS+SS+SE **Session Chair: Philip Moriarty** **Invited Talk: David Duncan** **2:00 pm - 2:30 pm Dr David Duncan**: Understanding the structure of two dimensional films using X-ray standing waves **2:30 pm - 2:45 pm Hanna Sjö**: Spatially resolved surface X-ray diffraction on polycrystalline surfaces **2:45 pm - 3:00 pm Oskar Fossberg**: Spectro-microscopy in the scanning field emission microscope **3:00 pm - 3:15 pm Dr. Debora Pierucci**: Operando Nanobeam Soft X-ray Microscopy: Unveiling the Energy Landscape of Nanocrystal-Based Devices **3:15 pm - 3:30 pm Koichiro Yaji**: Development of imaging-type spin-resolved photoemission microscopy apparatus
	King's Suite	**Metal Surfaces - Adsorption, Desorption and Reactions 2 - MoPS2K: ASS+SS+SE** **Session Chairs: Letizia Savio and Hans-Peter Steinrück** **Feature Talk: Jacek Goniakowski** **2:00 pm - 2:15 pm Michael Furlan:** Oxygen capture and storage in the Nb2O3 (2x2) Honeycomb lattice on Au **2:15 pm - 2:30 pm Dr. Burcu Karagoz:** Surface chemistry of methyl acetoacetate and aspartic acid on Cu – a model for enantioselective hydrogenation reactions **2:30 pm - 2:45 pm Peter McBreen:** Structure and Dynamics of Chirality-Transfer Complexes on Pt **2:45 pm - 3:00 pm Dr. Thiruvancheril Gopalakrishnan Gopakumar:** Temperature dependent disassembly analysis of a molecular adlayer reveals molecule-molecule and molecule-surface interaction energies separately **3:00 pm - 3:20 pm Jacek Goniakowski:** Planar Niobium Oxide Clusters on the Au Surface

	Queen's Suite - Dewar room	**Supported Nanostructures - MoPS2D: NS** **Session Chairs: Anna Rosławska and David Ward** **Invited Talk: László Óvári** **2:00 pm - 2:30 pm Dr László Óvári**: Hexagonal boron nitride monolayers on metals and alloys: relevance for templating and model catalysis **2:30 pm - 2:45 pm Dr. María Sánchez-Loredo**: Modification of the surface of a macroporous Ni electrocatalyst for hydrogen production using Ag and Pd nanostructures **2:45 pm - 3:00 pm Irena Padniuk**: On-surface synthesis of sulphur and oxygen-doped eleven-ring analogues of acenes **3:00 pm - 3:15 pm Dr Michael Hunt**: Self-Organised Nanostructuring of Solid Surfaces by Ion Beam Irradiation **3:15 pm - 3:30 pm Andreas Walz**: Soft-Landing meets Mass-Spectrometry - gentle UHV deposition for large, reactive or fragile molecules to create functional nano-architectures
	Queen's Suite - Thomson room	**Functional Coatings 1 - MoPS2T: TF** **Session Chair: Rebecca Clulow** **Invited Talk: Jolanta Klemberg-Sapieha** **2:00 pm - 2:30 pm Jolanta Klemberg-sapieha**: Functional coatings for aerospace applications **2:30 pm - 2:45 pm Sarka Zuzjakova**: W–Zr thin-film metallic glasses: Thermal behavior and evolution of properties **2:45 pm - 3:00 pm Mr. Francisco Javier Fernández Alonso**: Boosting Visible Light Photocatalysis with Synergistic Plasmonic Effect and Electron Trapping on Au-loaded Se-doped Ta2O5 Heterostructures **3:00 pm - 3:15 pm Luca Repetto**: How substrate roughness affects dewetting: an analysis based on the thin film equation **3:15 pm - 3:30 pm Matjaž Spreitzer**: Robust SrTiO3 Passivation of Silicon Photocathode by Reduced Graphene Oxide for Solar Water Splitting
	Queen's Suite - Cockcroft room	**Special Surfaces and Outgassing - MoPS2C: VST** **Session Chair: Reza Valizadeh** **Invited Talk: Valentine Petit** **2:00 pm - 2:30 pm Valentine Petit**: Surface technology for electron multipacting mitigation in the Large Hadron Collider vacuum system: developments towards in-situ implementation **2:30 pm - 2:45 pm Dr. Marcelo Juni Ferreira**: ESS vacuum system commissioning **2:45 pm - 3:00 pm Ivo Wevers**: Outgassing rate behaviour of selected polymers used in vacuum systems of particle accelerators
2:00 pm to 5:00 pm	Theatre, Hall Q	**VTC1 - Vacuum - The Basic Principles** **Trainer: Stuart Astin**
3.30 pm to 4:00 pm	Hall Q	**Afternoon Break**
4:00 pm to 5:35 pm	Auditorium	**Advances in Experimental and Theoretical Methods 3 - MoPS3A: ASS+SS+SE** **Session Chair: David Duncan** **Invited Talk: Philip Moriarty** **4:00 pm - 4:15 pm Dr. Shota Takahashi**: Pioneering tip-enhanced near-field nonlinear nanospectroscopy of interfacial molecules beyond the diffraction limit **4:15 pm - 4:30 pm Marta Chabowska**: A non-obvious source of surface meandering **4.30 pm - 4.45 pm Magdalena Załuska-Kotur**: Impurities as a source of regular patterns on the surface **4:45 pm - 5:00 pm Mr Dylan Barker**: Automated Classification of the State of a Scanning Probe Tip without Machine Learning **5:00 pm - 5:15 pm Roberto Bergamaschini**: Interplay of crystal faceting, wetting interactions and substrate geometry in solid-state dewetting and selective-area growth: a phase-field approach

		5:15 pm - 5:35 pm Philip Moriarty: Can tunnel current fluctuations accurately track molecular diffusion?
	King's Suite	**Spin Physics - MoPS3K: ASS+SS+SE** Invited Talk: Federico Mazzola **4:00 pm - 4:30 pm Federico Mazzola:** Hide and seek in the electron's world **4:30 pm - 4:45 pm PhD researcher Maha Alotaibi:** Exploring Spinterface Formation of Sexithiophene (6T) on Fe3O4: Insights into Interface Engineering for Enhanced Functionalities
	Queen's Suite - Dewar room	**MS-2: Light-matter Interaction at Atomic Scales - MoPS3D: MS** **Session Chairs: Alberto Martín Jiménez and Anna Roslawska** **Invited Talk: Pablo Merino** **4:00 pm - 4:30 pm Dr. Pablo Merino**: Scanning probe microscopy as a tool for nano-optical measurements **4:30 pm - 4:45 pm Yang Luo**: Femtosecond time-resolved spectroscopy at the atomic scale **4:45 pm - 5:00 pm Jaime Abad-Arredondo**: Electronic probing and manipulation of nanophotonic phenomena **5:00 pm - 5:15 pm David Mateos Roncero**: Directional picoantenna behaviour of tunnel junctions in the presence of atomic-scale defects **5:15 pm - 5:30 pm Mr Miguel Varea**: Light-matter interaction of field emission resonances in a scanning tunneling microscope
	Queen's Suite - Thomson room	**Functional Coatings 2 and Superconducting Thin Films - MoPS3T: TF** **Session Chair: Jolanta Klemberg-Sapieha** **4:00 pm - 4:15 pm Dr. Aleksandr Zubtsovskii**: Deposition study of NbTiN superconducting thin films prepared by reactive DC and HiPIMS magnetron (co)sputtering **4:15 pm - 4:30 pm Connor Fields:** Vibronic coupling in N2@C60: A gas phase-solid state hybrid **4:30 pm - 4:45 pm Prof. Xiaoran Liu**: Magnetism and Berry phase manipulation in an emergent structure of perovskite ruthenate by strain engineering
	Queen's Suite - Cockcroft room	**Special Vacuum Chambers and Components - MoPS3C: VST** **Session Chair: Marcelo Juni Ferriera** **4:00 pm - 4.15 pm** Prof. Sefer Avdiaj: **Vacuum System for Measuring** Diffusivity and Permeability: **Case Studies on Zerodur Glass, Kapton®, and PET Plastic** **4:15 pm - 4:30 pm Kristian Kirsch**: Aluminum fiber optical vacuum feedthroughs for harsh environments **4:30 pm - 4:45 pm Dr. Klaus Bergner**: Reliable Aluminum Vacuum Components for Miniaturized Quantum Technology Applications **4:45 pm - 5:00 pm Sam Lodge**: Updates on the factors determining the design of an XHV system for an Ion-trap Quantum Computer

5.30 pm to 7:30 pm	Hall Q	**Poster Session 1 and Drinks Reception -** Topics: Applied Surface Science, Biointerfaces and Materials Engineering, Nanometer Structures, Surface Engineering and Surface Science **Poster Presentations:** **Dr Kirill Bobrov:** Dynamics and long-range ordering of perylene on Ag **Prof. Dr. Jin-Hyo Boo:** 0D quantum dots @ 2D nanosheet muti-dimensional nanostructure tin sulfide as black phosphorus analogue for high performance solar-driven photocatalyst **Mr Jose Brandao-neto:** Radiation Damage in Crystallography - A Tale of 2 Excitation Regimes **Dr. Pavel Calta:** On detailed characterization of annealed PECVD silicon oxynitride thin films: growth of nanocrystals **Mr. Ranferi Cancino:** Effect of Li intercalation on the electronic properties of a SiC bilayer **Mr Jinchuan Chen:** Investigation of the co-adsorption of N-heterocyclic carbenes (NHCs) and ethyl pyruvate on Pt surfaces **Karthikeyan Chockalingam:** A framework for multiscale thermal simulations of batteries **Sukhyun Choi:** High-speed spectroscopic imaging ellipsometer based on monolithic polarizing interferometer: Inspection of the 2D van der waals materials **Mr Hugh Churn:** Lifetime Studies of Caesium Telluride Photocathodes Grown at Daresbury Laboratory **Alejandro Fernández García:** Out-of-plane growth of 2D molybdenum diselenide nanosheets on ultrafast laser-structured substrates **Kevin Jafet Garcia Caraveo:** Adsorption and detection of NH3 on metal functionalized SnC nanosheet: A DFT study **Dr Kerry Hazeldine:** In-situ Near-Ambient Pressure Scanning Tunneling Microscopy Study of MoS2 for Hydrodeoxygenation Applications **Atthar Ivansyah:** Revealing the Role of Magnesium in Mitigating the Properties of BCNO Material for Dye Adsorption, Antibacterial Activity : Experimental and Theoretical Investigation **Mrs. Štěpánka Jansová:** Methodology for procedures for the detection of naturally occurring asbestos in soil sediments **Masanori Kaku:** Hydrophilization of polyethylene terephthalate surface by deep-ultraviolet LED irradiations **Jina Kim:** Active phases of molten alloy catalysts composed of binary or ternary alloys for catalytic methane pyrolysis at high temperatures **Professor Eun Kyu Kim:** Resistive switching behaviours through structural change of CoOx and CuxO films deposited by magnetron sputtering **Fumio Komori:** Fabrication of Clean-Surface Microcrystals by Field Ion Beam for Surface Spectroscopy **Dr. Sam Lambrick:** Advancements in Surface Analysis: 3D ToF-SIMS with Gas Cluster Ion Beams **Masanari Namie:** Atomic interaction of titanium and titanium compounds surfaces with liquid sodium **Jun Nara:** Far- to middle-infrared absorption spectra of multi-layer graphene: DFT study **Mr. Sebastian Negrete Aragon:** Laser generated 2D MoOx functional surface nanostructures **Junoh Kim:** Physically Unclonable Functions Based on Heterostructured 2D Molybdenum Disulfide and Tungsten Disulfide **Daniel Rothhardt:** Mapping Electrostatic Potential on monolayer MnI2 islands **Prof Lidija Siller:** Synthesis and characterization of graphite anode with more stability and wettability by coating alumina layer from aluminium salt **Nick von Jeinsen:** Multi messenger imaging of bacterial biofilm composition and topography **Lukasz Walczak:** Characterization of the biomedical surface by the XPS and HPXPS