

Session Program

13-17 Sept 2021

**EUROPEAN CONGRESS AND EXHIBITION ON
ADVANCED MATERIALS AND PROCESSES -
EUROMAT 2021**

A6_Characterisation of functional materials

Virtual

Monday 13 September

11:00

A6_Characterisation of functional materials: A6_1_Spectroscopy I

Session | Location: Room 3

11:00–11:40

Advances in the In-situ and Operando Characterization of Functional Materials (Keynote)

Speaker

Bert Weckhuysen

11:40–12:00

Interface defects in SiC/SiO₂ probed by hard X-ray photoelectron spectroscopy

Speaker

Dr Anna Regoutz

12:00–12:20

Analysis of N-doped graphene nanostructures and nanocomposites by a combination of synchrotron x-ray photoelectron spectroscopy (XPS) and near edge x-ray absorption fine structure (NEXAFS)

Speaker

Dr Thomas Strunskus

12:20–12:40

Characterisation of Titanium Diffusion in TiW/Cu Metallisation Schemes of Power Semiconductor Devices Using Energy-Dependent Photoelectron Spectroscopy

Speaker

Mr Curran Kalha

12:40

14:00

A6_Characterisation of functional materials: A6_2_Spectroscopy II

Session | Location: Room 3

14:00–14:20

Operando Surface Spectroscopy and Microscopy During Catalytic Reactions

Speaker

Günther Rupprechter

14:20–14:40

In Situ Characterisation of the Solid Electrolyte Interphase in Lithium Ion Batteries

Speaker

Zoë Henderson

14:40–15:00

Insights into the Functionality of an Alkylated Li_xSi_yO_z Interphase for High Energy Cathodes from High Sensitivity NMR Spectroscopy

Speaker

Shira Haber

15:00–15:20

Operando characterisation of Catalytic Materials with Fluorescence Imaging, Optical Microscopy and Infrared Spectroscopy**Speaker**

Ms Lisa Rämisch

15:20–15:40

Time-Resolved Spectroscopy of Vanadia-Based SCR Catalysts under Transient Conditions**Speaker**

Mr Rob Jeremiah Nuguid

15:40

16:00

A6_Characterisation of functional materials: A6_3_Spectroscopy III**Session** | **Location:** Room 3

16:00–16:20

CO adsorption, orientation and dissociation on smooth and defect-rich Ir(111): SFG, LEED and DFT studies**Speaker**

Dr Xia Li

16:20–16:40

Methanol decomposition on copper surfaces under ambient conditions: Mechanism, surface kinetics and structure sensitivity**Speaker**

Dr Baran Eren

16:40–17:00

Controlling Organo-Metallic Interface Charge Transfer Via Adsorbate Orientation - A Photoemission Tomography Study**Speaker**

Mr Thomas Georg Boné

17:00–17:20

Probing the solid/liquid interface in X-Ray Photoelectron Spectroscopy - a droplet-based approach**Speaker**

Alex Walton

17:40

Tuesday 14 September

09:50

A6_Characterisation of functional materials: A6_4_Scattering

Session | Location: Room 3

09:50-10:10

***In operando* Synchrotron Grazing Incidence X-ray Scattering characterization of oriented nanostructured Pt films during templated electrodeposition**

Speaker

Mr Philipp Aldo Wieser

10:10-10:30

Functionality of Colloidal Nanocrystals and Supercrystals determined by Synchrotron Studies

Speaker

Rainer T. Lechner

10:30-10:50

Elastocaloric properties of polycrystalline samples of NiMnGaCu ferromagnetic shape memory alloy: effect of improvement of thermoelastic martensitic transformation

Speaker

Elena Villa

10:50-11:10

INFLUENCE OF MICROSTRUCTURE COMPONENTS ON IMPACT ENERGY OF LOW CARBON BAINITIC STEEL

Speaker

Dr Bandiougou Diawara

11:10

11:50

A6_Characterisation of functional materials: A6_5_Electron Microscopy I

Session | Location: Room 3

11:50-12:30

Recent developments in sub-100meV electron energy loss spectroscopy: from phonons to core losses in real and momentum space (Keynote)

Speaker

Prof. Quentin Ramasse

12:30-12:50

Fingerprinting the impact of p- and n-type dopants on the structural and local electrical properties of Indium Selenide by means of state-of-the-art transmission electron microscopy

Speaker

Mr Abel Brokkelkamp

12:50-13:10

Transmission electron microscopy characterization of 2H/3R polytypic WS₂: from bandgap determination to energy-gain phenomena

13:10

Speaker

Ms Sabrya van Heijst

15:20

A6_Characterisation of functional materials: A6_6_Electron Microscopy II**Session** | **Location:** Room 3

15:20–15:40

Multi-scale in situ observation of catalyst dynamics under reactive conditions**Speaker**

Marc Willinger

15:40–16:00

Atomic-level Structural Engineering and Analysis of Graphene**Speaker**

Mr Alberto Trentino

16:00–16:20

In situ generation of sub-10 nm silver nanowires under electron beam irradiation in a TEM**Speaker**

Dr Leonard Francis

16:20–16:40

Self-assembly and heteroatomic anchoring of single indium atoms and few-atom indium clusters on graphene**Speaker**

Dr Kenan Elibol

16:40–17:00

Mapping local electric fields in low-dimensional TMD nanomaterials with a pixel array detector electron microscope**Speaker**

Mr Maarten Bolhuis

17:00

17:20

A6_Characterisation of functional materials: A6_7_Electron Microscopy III**Session** | **Location:** Room 3

17:20–17:40

Atomic-scale carving of nanopores into a van-der-Waals heterostructure using slow highly charged ions**Speaker**

Anna Niggas

17:40–18:00

Gaining meaningful statistical data on TEM specimens through automated nanoparticle workflow (APW)**Speaker**

Yuri Rikers

18:00–18:20

Growth of metals on two-dimensional materials**Speaker**

Mr Georg Zagler

18:20–18:40

Cross-sectional Preparation of Energy Devices and their Characterization by Advanced TEM

Speaker

Christian Wiktor

18:40–19:00

Ex Situ and In Situ Study of Nanoparticle Exsolution from Iridium-doped Perovskites

Speaker

Dr Eleonora Cali

19:00

Wednesday 15 September

09:50

A6_Characterisation of functional materials: A6_8_Electron Microscopy IV

Session | Location: Room 3

09:50–10:10

In-situ STEM observation of surface modifications on a Graphene “Hot Plate”

Speaker

Prof. Sang Wook Lee

10:10–10:30

Atomic scale characterization of diamond-graphite heterostructures

Speaker

Prof. Thomas Waitz

10:30–10:50

Low band-gap rod-coil block copolymer:PC61BM blend water-processable nanoparticles: microanalytical characterization related to the WPNP-based active layer properties

Speaker

Dr Anna Maria Ferretti

10:50–11:10

Microstructure investigation of superconducting thin films on copper

Speaker

Ying Li

11:10–11:30

Nano-reinforced Epoxy Foaming Systems for the development of multifunctional Fiber reinforced polymer composites

Speaker

Dr Katerina Loizou

11:30

11:50

A6_Characterisation of functional materials: A6_9_Probe Microscopy I

Session | Location: Room 3

11:50–12:10

Self-metalation of 2H-Tetraphenyl Porphyrin and 2H-Porphine on an Oxide Surface

Speaker

Florian Schwarz

12:10–12:30

High resolution AFM imaging of molecular assemblies

Speaker

Prof. Ernst Meyer

12:30–12:50

Nano-hillock formation on the CaF₂(111) surface due to individual slow Au-cluster impacts

Speaker

Mr Gabriel Szabo

13:10

12:50-13:10

Study of changes in the structure and properties of an TiNi alloy in various structural states during phase transformations

Speaker

Dr Anna Churakova

15:30

A6_Characterisation of functional materials: A6_10_Probe Microscopy II

Session | **Location:** Room 3

15:30-15:50

Doping of Free-standing Graphene Measured with Kelvin Probe Force Microscopy under Electrochemical Reaction Conditions

Speaker

Ms Salma Khatun

16:10

15:50-16:10

nano-FTIR correlation nanoscopy of functional nanostructures

Speaker

Dr Andreas Andreas Huber