EFDS
Europäische Forschungsgesellschaft Dünne Schichten e. V.
European Society of Thin Films

ASMET
THE AUSTRIAN SOCIETY FOR METALLURGY AND MATERIALS

PROGRAM BOOKLET

PSE PARTNER COUNTRY 2024 AUSTRIA

WORKSHOP

ENERGY TRANSITION

THE ANSWER RESIDES IN THE COATING

NOVEMBER 13 – 14, 2023 | WELS, ÖSTERREICH

AUSTRIAN COMMUNITY

2024 CONFERENCES #PSE

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Joanneum Research, Niklasdorf, Austria

Helmut Riedl-Tragenreif
Technische Universität Wien, Wien, Austria

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PREFACE

Energy Transition
When the answer is in the layer

Rapid changes in the Earth's climate and increasingly important geopolitical considerations have led to an urgent need to introduce self-sufficient sustainable energy technologies in Europe. For this reason, the Austrian federal government has set the goal of achieving climate neutrality in Austria by 2040. Achieving this goal is only feasible through investments in research & development, the expansion of all renewable energy sources, infrastructure, storage and investments in energy efficiency.

Surface and thin-film technologies are the key to energy-efficient technologies, ranging from hydrogen and battery technology to plasma-based chemical synthesis and photovoltaics. Austrian research centers and universities in charge of new and further development as well as Austrian companies from the surface technology sector will present innovations in this sector.

The workshop will be held in the city of WELS, which is centrally located in the industrial state No.1 of Upper Austria. It is established as an industrial, scientific and trade fair center that attracts national as well as international visitors. Approximately 40,000 employees find work in the approximately 4,000 companies in Wels and the immediate vicinity.

The topic of energy and energy transition has been in focus in this region for years. This is also reflected in regional research funding, such as the Upper Austrian Hydrogen Initiative 2030. Hydrogen Offensive 2030: "Hydrogen as a success factor for a future-proof location". Other important events that show the orientation of Upper/Austrian energy policy are the "World Sustainable Energy Days", an annual conference on sustainability, renewable energies and energy efficiency, which have been held for 20 years, and the annual Energy Saving Fair. Here, developments and technological possibilities are presented to the public.

Please use the opportunity to discuss the energy transition and inform yourself about the funding of European research and development projects in the framework of "Collective Research NETworking". Competent contact persons from Austria (FFG) and Germany (EFDS e.V.) will be present and support you.

This workshop is jointly organized by The Austrian Society for Metallurgy and Materials ASMET and the European Research Society Thin Films e.V. EFDS. The event is related to the PSE2024 - 19th International Conference Plasma Surface Engineering in the context of the PSE Partner Country Program 2024 – Austria.

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PROGRAM

Monday, November 13, 2023

10:00	**Registration**
Session 1 | Innovation for the energy transition Moderation: Thomas Müller, Rübig GmbH & Co. KG	
11:00	**Welcome**
11:15	**Hurdles, challenges and opportunities of the European energy transition** Gerhard Dell, Landesenergiebeauftragter im österreichischen Bundesland Oberösterreich und Geschäftsführer des OÖ Energiesparverbandes, Österreich
11:45	**Shaping a sustainable energy future with research and innovation | Overview about the research funding of FFG** Gertrud Aichberger, Österreichische Forschungsförderungs GmbH, Wien, Österreich
12:05	**Hydrogen – The Key for a successful energy transition?** Jürgen Wageneder, Linde Gas GmbH, Stadl-Paura, Österreich
12:25	**PVD nitrides te be used for increased life time of tools and components as well as supercapacitors** Paul Mayrhofer, Technische Universität Wien, Österreich
12:55	**Lunch Break**
Session 2 | Tribological coatings for the energy transition Moderation: Gerhard Hackl, ASMET	
14:00	**Looking for the perfect friction match in the 2D world – How the in-operando formation of TMD´s and the use of MXenes revolutionize lubricating concepts** Carsten Gachot, Technische Universität Wien, Österreich
14:20	**Tribological Properties of Hard Coatings** Volker Strobl, Rübig GmbH & Co KG, Wels, Österreich
14:40	**Novel electrically conductive DLC coatings for electrical and electrochemical applications** Daniel Heim, FH Oberösterreich, Wels, Österreich
15:00	**Reducing environmental friction with high performance coatings** Florian Rovere, Oerlikon Balzers, Liechtenstein

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15:20	**In-situ wear detection of DLC coatings under near-application conditions** Ewald Badisch, AC²T research GmbH, Wiener Neustadt, Österreich
15:40	**Wear-resistant, low-friction atmospheric pressure Plasma spray coatings for sustainable (bio-based,recyclable) materials** Reinhard Kaindl, Joanneum Research, Niklasdorf, Österreich
16:00	**Coffee Break & Poster Session**

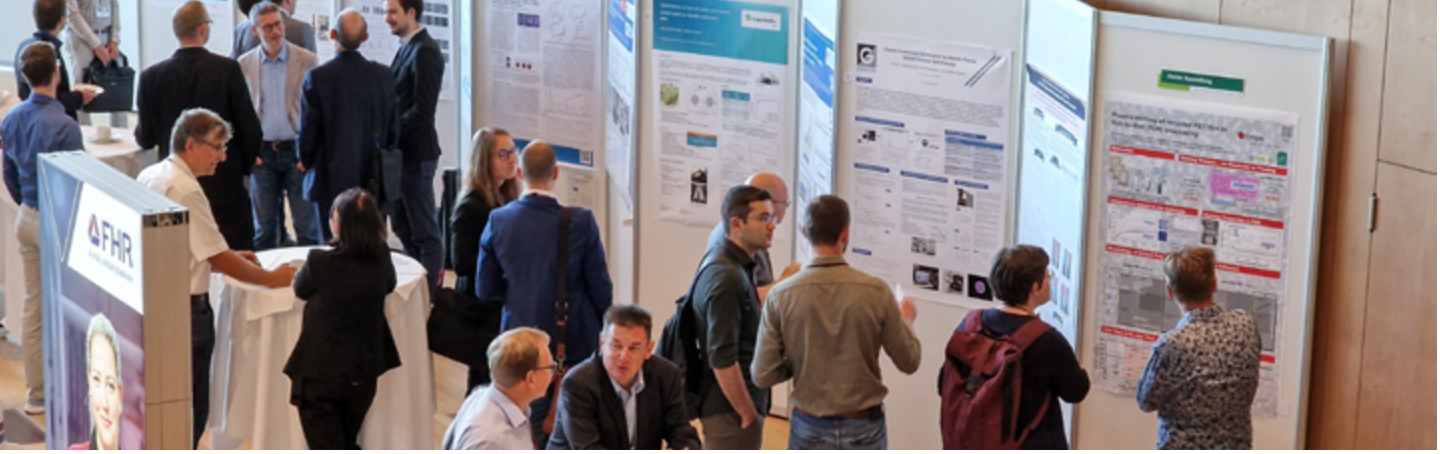
Session 3 | Surface modification & structuring
Moderation: Paul Mayrhofer, Technische Universität Wien

16:30	**Bio2onik - What flexible nano- and microstructures can contribute to energy transition** Dieter Nees, Joanneum Research Forschungs-gesellschaft mbH, Weiz, Österreich
16:50	**Graphene on steels as the ultimate thin corrosion barriers** Bernhard Bayer, Technische Universität Wien, Österreich
17:10	**Foil architecture - The construction method of the future?** Martin Kassecker, Hueck Folien GmbH, Baumgartenberg, Österreich
17:30	**End of the day**

19:00 – 22:00 **EVENING EVENT**
Minoriten Wels

In the heart of the historic town center is the Minorite Church, built as early as the beginning of the 14th century, and the associated monastery. The church with the impressive medieval choir and the simple, baroque remodeled nave was converted into an event center. During this event you can deepen new acquaintances and have conversations about future projects and cooperations in a pleasant atmosphere.

Foto: © Minoriten Stadt Wels



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PROGRAM

Tuesday, November 14, 2023

Session 4.1 | Hydrogen technologies
Moderation: Daniel Heim, FH Oberösterreich Wels

08:30	**Keynote – The storage of hydrogen – Challenge and opportunity for surface technology?** Christian Mitterer, Montanuniversität Leoben, Österreich
09:00	**The properties of thin films in solid oxide fuel cells and electrolysis cells** Jürgen Fleig, Technische Universität Wien, Österreich
09:20	**H2 in mobility: challenges for thin films** Marco Carlet, IHI Ionbond Netherlands B.V., Venlo, Niederlande
09:40	**PVD -coatings and coating equipment for bipolar cells for fuel cells and electrolyzers** Herbert Gabriel, PVT Plasma und Vakuum Technik GmbH, Bensheim, Deutschland
10:00	**Coffee Break**

Session 4.2 | Hydrogen technologies
Moderation: Christian Mitterer, Montanuniversität Leoben

10:30	**Functional coatings for the production of green hydrogen** Stephan Abermann, AIT Austrian Institute of Technology GmbH, Wien, Österreich
10:50	**Contributions of atmospheric plasma technology to the energy transition** Tobias Alois Männer, INOCON Technologie GmbH
11:10	**Surface modifications for enhanced electrochemical performance of battery electrodes** Christina Toigo, FH Oberösterreich, Wels, Österreich
11:40	**Transfer to Rübig**
12:00	**Lunch & conversation at Rübig**

13:00	**COMPANY TOUR @ Rübig GmbH & Co. KG** Rübig GmbH & Co. KG Hardening Technology Department Contract Heat Treatment/Coating Metal with character. Join us on a tour of RÜBIG hardening technology and learn about the methods available to give metal unique properties. Components are hardened, specially tailored to customer requirements. A special highlight is the RÜBIG laboratory, which is one of the best in Europe. More information about RÜBIG: www.rubig.com

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14:10	**Return to FH Oberösterreich Wels**

Session 5 | Photovoltaics
Moderation: Wolfgang Waldhauser, Joanneum Research

14:30	**More than a cell: Future potential of new PV technologies** Roman Tratting, Joanneum Research, Weiz, Österreich
14:50	**Customized thin-film photovoltaics from the roll** Andreas Zimmermann, Sunplugged GmbH, Wildermieming, Österreich
15:10	**Crystalsol's powder-based photovoltaics: new tasks for thin films** Dieter Meissner, crystalsol GmbH, Wien, Österreich
15:30	**Perovskite solar cells, the new hope of photovoltaics?** Markus Clark Scharber, Johannes Kepler Universität Linz, Österreich

Session 6 | Battery technologies
Moderation: Katrin Ferse, EFDS

14:30	**Between the laboratory and the gigafactory – the challenges of scalability of battery production and new materials** Marcus Jahn, AIT Austrian Institute of Technology GmbH, Wien, Österreich
14:50	**Electrodeposition and stripping of insulating active material layers as key for high-energy batteries** Stefan Freunberger, Institute of Science and Technology Austria, Klosterneuburg, Österreich
15:10	**Solid-state batteries in the automotive industry – From vision to integration** Lukas Ladenstein, AVL List GmbH, Graz, Österreich
16:00	**PSE panel discussion**
16:30	**End of the workshop**

Dr. Gerhard Dell

State Energy Commissioner at the Austrian Federal State Oberösterreich and General Manager of OÖ Energiesparverband, Austria

Hurdles, challenges and opportunities of the European energy transition

Energy production and use account for 75% of greenhouse gas emissions in Europe. Over the last three decades, their emissions have been reduced by around 30 percent. But this is not enough to achieve the climate targets. The central fields of action for this are energy efficiency, renewable energies, grids and storage. Information, incentives, framework conditions and technology innovations are the instruments for the energy turnaround. This also offers the opportunity for economic modernization.

DI Gertrud Aichberger

Program Management
FFG Österreichische Forschungsförderungsgesellschaft mbH

Shaping a sustainable energy future with research and innovation | Overview about the research funding of FFG

Be part of it and shape the energy supply of tomorrow! In the presentation you will get an overview of the possibilities of funding research projects for the development of sustainable energy technologies and which funding programs are available to you.

Dipl.-Wirtsch.-Ing.(FH) Jürgen Wageneder

Business Development & Sales ECOVAR Linde Gas GmbH
Linde Gas GmbH

Hydrogen – The Key for a successful energy transition?

A short overview to the topic hydrogen and the company Linde Gas GmbH will be presented.

Prof. Paul Mayrhofer

Univ.Prof. Dipl.Ing. Dr.mont. Paul H. Mayrhofer | Professor of Materials Science, Dean of Studies | Technische Universität Wien, Austria

PVD nitrides te be used for increased life time of tools and components as well as supercapacitors

For mechanically dominated load profiles, nitrides are preferred, while oxides offer better protection against high-temperature corrosion. Combined mechanical and thermal loads therefore call for nitrides with excellent temperature and oxidation resistance. How to develop such nitrides with excellent strength and toughness combined with exceptional thermal stability is the focus of this talk. We will also discuss the excellent supercapacitor properties of transition metal nitrides.

Univ.-Prof. Dr.-Ing. Carsten Gachot

Head of the Tribology Research Division | Institute of Engineering Design and Product Development E307-05, TU Wien

Looking for the perfect friction match in the 2D world – How the in-operando formation of TMD´s and the use of MXenes revolutionize lubricating concepts

The presentation will address new concepts of solid lubrication in aerospace applications and will focus on recent developments in 2D materials, with particular emphasis on MXenes and transition metal carbo chalcogenides (TMCC's) as bridging materials between MXenes and transition metal dichalcogenides such as MoS2.

DI Volker Strobl MSc

division manager
Rübig GmbH & Co. KG

Tribological properties of hard coatings

In the wind power industry, rolling bearings are currently used in gearboxes. For reasons of weight and maintenance reduction, however, the trend is toward plain bearings. Here, Cu-Sn or Al-Sn, for example, are used as coating materials.

In this presentation an alternative approach will be presented, a hard material coating by means of PACVD. The tribological properties of this coating - Rübig DLCXtended® - will be presented.

FH-Prof. DI Dr. Daniel Heim

Head of the Materials Science and Production Engineering
University of Applied Sciences Upper Austria

Novel electrically conductive DLC coatings for electrical and electrochemical applications

Carbon and graphite layers play a key role in electrochemical systems such as batteries or fuel cells. Diamond-like carbon (DLC) coatings reduce friction and wear and are chemically inert. The electrical conductivity of DLC coatings can be changed and adjusted by several orders of magnitude by suitable choice of deposition parameters, which suggests a high potential for development and use in electrochemical applications.

Dr.-Ing. Florian Rovere

Head of Product Line Service Components
Oerlikon Surface Solutions AG

Reducing environmental friction with high performance coatings

Specialized physical vapor deposition (PVD) coatings are widely recognized for the critical role they perform in enhancing operational performance and extending the life of parts across countless manufacturing and industrial sectors. Less understood is the value that these coatings provide in reducing the environmental impact of the industrial processes where they are used. This important value-add should not to be overlooked.

Dipl.-Ing. Dr. mont. Ewald Badisch

Scientific Director
AC2T research GmbH

In-situ wear detection of DLC coatings under near-application conditions

The focus of the presentation is on the application of in-situ wear detection of DLC coatings. The wear measurement method developed at AC_2T (RIC – Radioactive Isotope Concentration) allows continuous wear detection and is applied under different tribological loading conditions. The results show a high influence of abrasive particles on the DLC wear rate, which leads to a reduction of service life up to failure.

Dr. Mag. Reinhard Kaindl

Senior Scientist, Deputy Head of Research | Johanneum Research,
MATERIALS – Institut für Sensorik, Photonik und Fertigungstechnologien

Wear-resistant, low-friction at-mospheric pressure Plasma spray coatings for sustainable (bio-based,recyclable) materials

Carbon-based atmospheric pressure plasma low-friction and wear surfaces on bio-based and recyclable engineering polymers in the powertrain increase energy efficiency and extend the service life of plain bearings and transmissions. Carbon is available in sufficient quantities in the medium to long term, coatings can be produced with relatively low energy input, and coated parts are recyclable in the sense of a circular economy.

Dipl. Chem. Dr. Dieter Nees

Principal Scientist
JOANNEUM RESEARCH Forschungsgesellschaft mbH, Weiz, Austria

Bio2onik – What flexible micro- and nano structures can contribute to energy transition

We can learn from nature on many occasions how micro- and nanostructures affect macroscopic surface properties. Well-known examples are sharkskin for flow friction reduction or moth eyes for anti-reflective coatings. At JOANNEUM RESEARCH - MATERIALS, we develop roll-to-roll UV embossing processes for large-scale fabrication of bionic micro- and nanostructured polymer surfaces on flexible films.

Dr. Bernhard C. Bayer

Junior Research Group Leader
Institute of Materials Chemistry, Technische Universität Wien

Graphene on steels as the ultimate thin corrosion barriers

Two-dimensional (2D) materials have a wide application profile incl. sustainable energy. We develop scalable synthesis and integration protocols for 2D materials and their hybrids down to the controlled single-atom level. With a variety of academic & industrial partners these 2D materials/hybrids are tested as, e.g., catalysts in electro- and photocatalytic sustainable hydrogen production, heat spreaders for low-power electronics and ultimately thin corrosion barriers on metallurgical materials.

Martin Kassecker

Hueck Folien GmbH, Baumgartenberg
Technical Product Manager Design

Foil architecture – The construction method of the future?

ETFE film architecture has gained a lot of popularity in recent years and is often used for stadiums, exhibition centers, greenhouses and other architectural projects. This material makes it possible to create aesthetically pleasing and functional structures.

Prof. Dr. Christian Mitterer

Professor for Functional Materials and Material Systems
Montanuniversität Leoben

Keynote – The storage of hydrogen – Challenge and opportunity for surface technology?

The storage of hydrogen represents one of the greatest challenges of the necessary transformation to a CO_2-free energy supply. Porous carbons offer the possibility of reversible adsorption and desorption of hydrogen on their surface. This presentation will address the possibilities of developing highly porous carbons via plasma-assisted surface modification and nanoparticle deposition for application as hydrogen storage media.

Prof. Jürgen Fleig

Universitätsprofessor
Technische Universität Wien, Institute for Chemical Technologies and Analytics

The properties of thin films in solid oxide fuel cells and electrolysis cells

Oxide electrodes are of central importance in solid oxide fuel cells and electrolysis cells (SOFCs/SOECs), where they often act simultaneously as current collectors, ion conductors and catalysts. In this talk, we will show how thin film systems can be used to investigate and optimize these material properties. At the same time, the possibilities of impedance spectroscopic measurements for the characterization of oxide films will be illustrated.

Marco Carlet

Process Engineering
IHI Ionbond B.V.

H2 in mobility: challenges for thin films

The application areas of thin coatings in the use of hydrogen as fuel for CO2 emission-free drive concepts are presented. In hydrogen-powered internal combustion engines, the coatings reduce friction as well as wear in a dry hydrogen atmosphere and are intended to prevent hydrogen embrittlement. When applied to bipolar plates for fuel cells, the electrical conductivity of the surface and the corrosion resistance are adjusted.

Dr.-Ing. Herbert Gabriel

General Manager
PVT Plasma und Vakuum Technik GmbH

PVD-coatings and coating equipment for bipolar cells for fuel cells and electrolyzers

In-line coating systems are ideally suited for high volume production applications over a wide range of substrate sizes and geometries. PVT has designed and developed a series of inline coating sysems that are ideally suited for Physical Vapor Deposition (PVD) coating of bipolar plates for fuel stacks and electrolyzers, razor blades, solar concentrating mirrors, etc. with most different coatings.

Dr. Stephan Abermann

Head of Competence Unit Energy Conversion and Hydrogen
AIT Austrian Institute of Technology, Center for Energy

Functional coatings for the production of green hydrogen

The presentation will give an overview of the current developments at AIT in the field of functional coatings for the production of sustainable hydrogen. Water electrolysis and direct photo-electrochemical conversion (PEC) routes are of great importance here. Significant R&D efforts are needed here to reduce the cost of commercial and especially recent electrolysis technologies (PEM/AEM/SOEC/ PEC) or to develop them to commercial demonstration.

COMPANY TOUR

@ Rübig GmbH & Co. KG | 12:00 – 14:00

Afterwards, more technology developments for energy transition, batteries and photovoltaics.

Dipl. Ing. Tobias Alois Männer

INOCON Technologie GmbH,
Attnang-Puchheim, Österreich

Contributions of atmospheric plasma technology to the energy transition

Atmospheric plasmas can be used for surface cleaning, activation and coating. With the innovative technology of INOCON Technologies GmbH this step can be realized environmentally friendly and selectivly at the areas wanted. No wet chemistry is necessary. Resources and money can be saved and the lifetime cycle of components can be prolonged. Examples of corrosion protection coatings for battery technology will be presented.

Christina Toigo

Christina Toigo, FH Oberösterreich, Wels, Österreich
Professorship for Hydrogen Technology and Energy Storage

Surface modifications for enhanced electrochemical performance of battery electrodes

Dendritic copper current collectors were used for the preparation of LTO anodes for Lithium-ion batteries and their performance was evaluated via mechanical analysis, FIB-SEM and electrochemical measurements. The distinct copper dendrites lead to a physically increased surface area of the current collector and also proved an increase in electrochemically active surface area.

DI Dr. Roman Trattnig

Deputy Head Light and Optical Technologies
Joanneum Research – MATERIALS

More than a cell: Future potential of new PV technologies

The future of solar technology is being shaped by promising developments in various areas, including III-V semiconductors, CZTS, CIGS and perovskite solar cells. These technologies hold the potential to significantly improve the energy efficiency and cost effectiveness of solar cells. With continued research and development, these technologies could revolutionize solar energy and contribute to a sustainable and renewable energy future.

Andreas Zimmermann

Sunplugged GmbH
General Manager

Customized thin-film photovoltaics from the roll

Sunplugged develops a customizable photovoltaic film. The core element is a thin-film solar cell, which is produced in a roll-to-roll process. The layers of the solar cell are deposited on a high temperature stable carrier foil. With a digitally controllable interconnection process, the foil-like solar cells can be formed into a wide variety of shapes and output voltages. The lecture will present the current state of development.

em. Univ.-Prof.
Dr. Dr.hc Dieter Meissner

CSO
crystalsol GmbH

Crystalsol's powder-based photovoltaics: new tasks for thin films

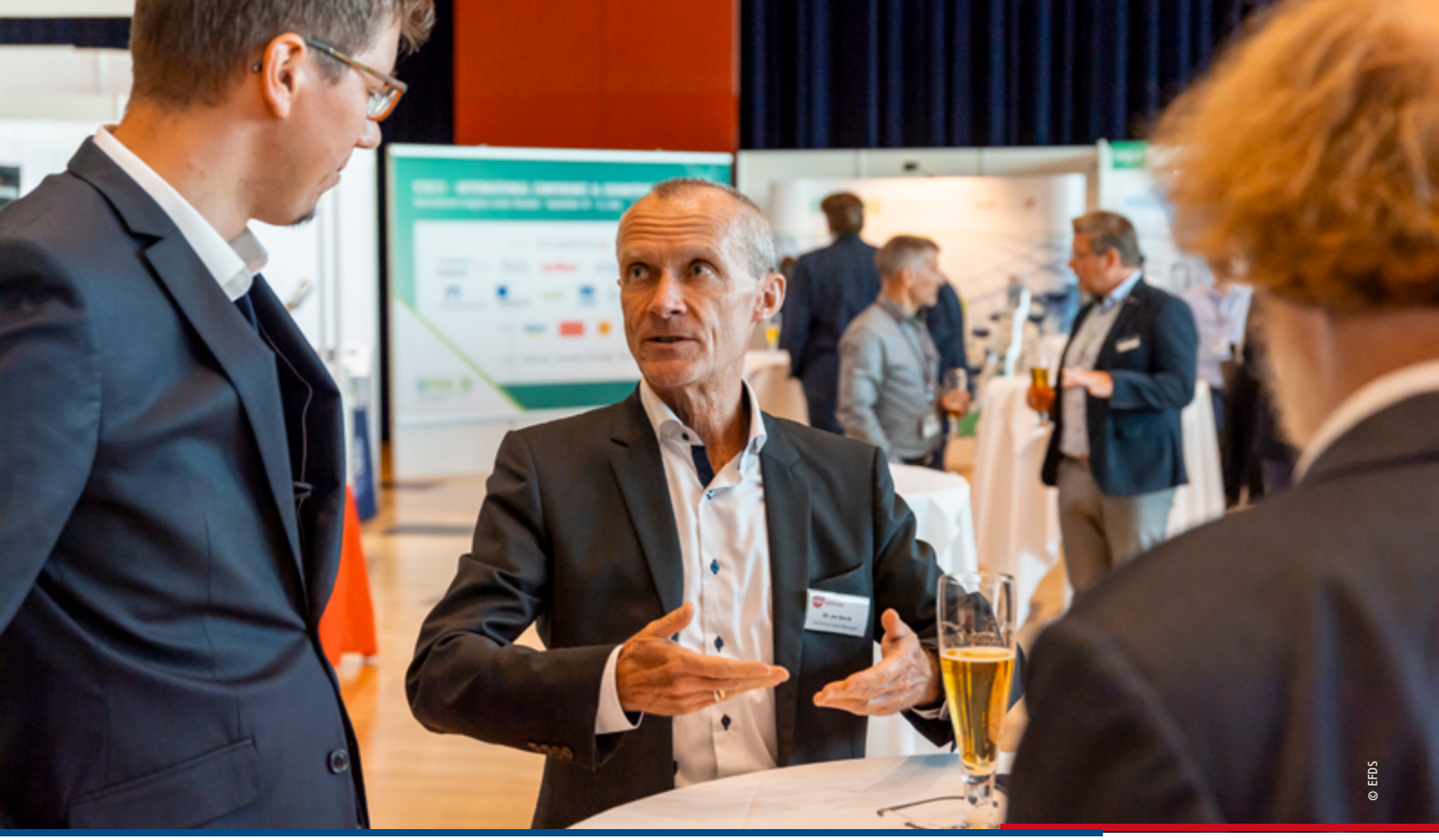
crystalsol's single crystal powder-based printed photovoltaic module technology contains five thin films that together convert the excitation energy created by light absorption in the CZTS semiconductor single crystal into electrical voltage. Not only must these be very thin and of high quality, they must also be suitable for roll-to-roll printing of the modules and they must allow high flexibility of the finished module. This will be explained in detail in the presentation.

Dr. Markus Scharber

Johannes Kepler Universität

Perovskite solar cells, the new hope of photovoltaics?

In recent years, the efficiency of perovskite-based solar cells has been increased to over 25 %. In addition, these devices are very easy to manufacture and can be combined with silicon solar cells to form efficient tandem solar cells. In my presentation, I will give an overview of the current state of research and discuss the advantages and disadvantages of perovskite solar cells.



Dr. Marcus Jahn

Head of Competence Unit Battery Technologies

Between the laboratory and the gigafactory – the challenges of Scalability of Battery Production and New Materials

Research and industry must be closely linked for the energy transition. However, it often takes several years of process research, scaling optimization and the development of new methods in the manufacture of materials and products to bring the latest innovations in battery technology from the laboratory to market maturity. So, what is the state of the art? When we will see the latest materials in the vehicles of the future? What will be needed for the energy storage system of the future?

Prof. Stefan Freunberger

Institute of Science and Technology Austria,
Klosterneuburg, Österreich

Electrodeposition and stripping of insulating active Material layers as key for high-energy batteries

In order to enable electrochemical energy storage on the huge scale required, it is necessary to consistently rely on abundantly available main group elements. Among the most interesting of these are batteries based on oxygen and sulphur, but whose electrochemically active forms (metal oxides, sulphides and sulphur) are extremely insulating. Here I describe our research into how high-performance batteries are possible with these insulating materials.

Dr. techn. Lukas Ladenstein

Development Engineer Battery
AVL List GmbH

Solid-state batteries in the automotive industry – From vision to integration

All-solid-state batteries (ASSBs) are a promising technology for electric vehicles. Therefore, the automotive industry is closely following the development and progress of ASSBs. However, in order to enable integration, some aspects, such as significant breathing behavior of the metal anodes or a wider temperature window during operation, need to be subject to close scrutiny. These will be discussed in more detail in the presentation.

POSTER PRESENTATIONS

Laser-based analysis of thin film systems – elastic characterization and defect detection.

Felix Noll, RECENDT Research Center for Non Destructive Testing GmbH, Linz Österreich

Thin film based membrane electrode assemblies for green ammonia synthesis.

Jan Wallis, Leibniz-Institut für Plasmaforschung und Technology e.V. (INP), Greifswald, Deutschland

Describing hydrogen diffusion in metallic and ceramic thin film materials

Phillip Rückeshäuser, Christian Doppler Laboratory for Surface Engineering of high-performance Components, Wien, Österreich

Fatigue testing of protective ceramic coating materials

Arno Gitschthaler, Christian Doppler Laboratory for Surface Engineering of high-performance Components, Wien, Österreich

Understanding DLC failure influenced by progressed wear

Manuel Zellhofer, Martin Jech, Ewald Badisch, Paul Heinz Mayrhofer, AC2T research GmbH, TU Wien, Österreich

Electrical and mechanical properties of highly conductive nitrogen doped DLC films deposited via high-temperature DC PACVD

Manuel Schachinger* a, Francisco A. Delfin a,b, Alexander Stiglbauer a, Zürn Christian a, Christian Forsich a, Daniel Heim a, Bernd Rübig c, Thomas Müller ctt, , Christian Dipolt, a University of Applied Sciences Upper Austria., Wels, Austria; b Universidad Tecnológica Nacional, Facultad Regional Concepción del Uruguay, Concepción del Uruguay, Argentina, c Rubig GmbH & Co KG., Wels, Austria

LIST OF ATTENDEES

as at
November 6, 2023

Name	Firstname	Company	Country
Abermann	Stephan	AIT Austrian Institute of Technology GmbH	AT
Aichberger	Gertrud	Österreichische Forschungsförderungs GmbH	AT
Badisch	Ewald	AC2T research GmbH	AT
Baumgartner	Melanie	ASMET	AT
Bayer-Skoff	Bernhard	TU Wien	AT
Blutmager	Andreas	Engel Austria GmbH	AT
Burgstaller	Wolfgang	voestalpine Stahl GmbH	AT
Carlet	Marco	IHI Ionbond Netherlands B.V.	NL
Csanadi	Zoltan	HOERBIGER Antriebstechnik Holding GmbH	DE
Dell	Gerhard	Oberösterreichischer Energieverband	AT
Dipolt	Christian	RÜBIG	AT
Dworak	Yvonne	ASMET	AT
Ferse	Katrin	EFDS	DE
Fickl	Bernhard	TU Wien	AT
Fietzke	Fred	Fraunhofer-Institut für Organische Elektronik, Elektronenstrahl- und Plasmatechnik FEP	DE
Fleig	Jürgen	TU Wien	AT
Fransen	Geert-Jan	IHI HAUZER TECHNO COATING BV	NL
Freunberger	Stefan	Institute of Science and Technology Austria	AT
Gabriel	Herbert	PVT Plasma und Vakuum Technik GmbH	DE
Gachot	Carsten	TU Wien	AT
Gebeshuber	Andreas	Rübig GmbH & Co KG	AT
Gitschthaler	Arno	TU Wien – CDL SEC	AT
Gläser	Ingrid	EFDS	DE
Gotsbacher	Rainer	ecoplus. Niederösterreichs Wirtschaftsagentur GmbH	AT
Grabmaier	Michelle	ASMET	AT
Gschiel	Harald	SCIOFLEX GMBH	AT
Hackl	Gerhard	ASMET	AT
Heim	Daniel	FH Oberösterreich	AT
Heitzinger	Dominik	High Tech Coatings	AT
Hunzinger	Nikolas	TRUMPF Hüttinger GmbH + Co. KG	DE
Jackstadt	Jutta	Linde Gas GmbH	AT
Jahn	Marcus	AIT Austrian Institute of Technology GmbH	AT
Kaindl	Reinhard	JOANNEUM RESEARCH	AT

Name	Firstname	Company	Country
Kassecker	Martin	Hueck Folien GmbH	AT
Kolozsvári	Szilárd	Plansee Composite Materials GmbH	DE
Ladenstein	Lukas	AVL List GmbH	AT
Lugmair	Christoph	RÜBIG	AT
Männer	Tobias A.	INOCON Technologie GmbH	AT
Mayrhofer	Paul	TU Wien	AT
Meissner	Dieter	crystalsol GmbH	AT
Mitterer	Christian	Montanuniversität Leoben	AT
Müller	Thomas	RÜBIG	AT
Nees	Dieter	JOANNEUM RESEARCH	AT
Noll	Felix	RECENDT GmbH	AT
Poberer	Martin	voestalpine Stahl GmbH; Mechanisch Technisches Zentrum	AT
Riedl-Tragenreif	Helmut	TU Wien	AT
Rovere	Florian	Oerlikon Balzers	AT
Rückeshäuser	Phillip	CDL-SEC, TU Wien	AT
Schachinger	Manuel	FH OÖ Forschungs und Entwicklungs GmbH	AT
Scharber	Markus Clark	Johannnes Kepler Universität Linz, JKU	AT
Schmidler	Tamara	Rübig Anlagentechnik	AT
Schrittesser	Bernd	SCIOFLEX GmbH	AT
Singewald	Tanja Denise	CEST Kompetenzzentrum für elektrochemische Oberflächentechnologie GmbH	AT
Stellnberger	Karl-Heinz	voestalpine Stahl GmbH	AT
Stöckl	Wieland	Fraunhofer IOF	DE
Strobl	Volker	Rübig GmbH & Co KG	AT
Toigo	Christina	FH Oberösterreich	AT
Trattnig	Roman	JOANNEUM RESEARCH	AT
Ummels	Joris	IHI Ionbond Netherlands B.V.	NL
Wageneder	Jürgen	Linde Gas GmbH	AT
Waldhauser	Wolfgang	JOANNEUM RESEARCH	AT
Wallgram	Wilfried	Plansee Composite Materials GmbH	DE
Wallis	Jan	Leibniz Institut für Plasmaforschung und technologie e.V.	DE
Zauner	Lukas	RHP Technology GmbH	AT
Zellhofer	Manuel	AC2T reserach GmbH	AT
Zimmermann	Andreas	Sunplugged GmbH	AT

19TH INTERNATIONAL CONFERENCE ON PLASMA SURFACE ENGINEERING

2024 CONFERENCES PSE

SEPTEMBER 2 – 5, 2024

TRADE FAIR ERFURT, GERMANY

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