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AMC®
Advanced Materials Congress

HYBRID SETUPS

ONSITE - ONLINE LIVE

Program & Proceedings

European Assembly

Advanced Materials

Congress

28 - 31 August 2022
Stockholm, Sweden

PARALLEL EVENTS

- Fellow Summit
- Baltic Series
- Nanomaterials & Nanotechnology
- Energy Materials & Technology

Organizer

IAAM®
Advancement of Materials to Global Excellence

International Association of Advanced Materials
Org. 802503-6784

Gammalkilsvägen 18,
Ulrika 590 53,
SWEDEN

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2022

Advanced Materials World Congress
11 - 14 Oct. 2022 | Stockholm, Sweden
www.advancedmaterialscongress.org/world

American Advanced Materials Congress
29 Oct. - 06 Nov. 2022 | Miami, USA
www.advancedmaterialscongress.org/america

International Conclave on Materials, Energy & Climate
12 - 14 December 2022 | Delhi NCR, India
www.advancedmaterialscongress.org/conclave

2023

Composite Materials Congress
27 - 30 April 2023 | Orlando, USA
www.advancedmaterialscongress.org/composites

Advanced Functional Materials Congress
27 - 30 April 2023 | Orlando, USA
www.advancedmaterialscongress.org/functional

International Conference on Nanomaterials & Nanotechnology
28 - 31 August 2023 | Stockholm, Sweden
www.advancedmaterialscongress.org/icnano

Advanced Energy Materials & Technology Congress
28 - 31 August 2023 | Stockholm, Sweden
www.advancedmaterialscongress.org/energy

Baltic Conference Series
28 - 31 August 2023 | Stockholm, Sweden
www.advancedmaterialscongress.org/baltic-spring

World Conclave on Materials, Energy & Climate
23 - 26 September 2023 | Southampton, UK
www.advancedmaterialscongress.org/conclave23

European Advanced Materials Congress
23 - 26 September 2023 | Southampton, UK
www.advancedmaterialscongress.org/europe

Advanced Materials World Congress
09 - 12 November 2023 | Orlando, USA
www.advancedmaterialscongress.org/world23

www.advancedmaterialscongress.org

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Session 04: Biomaterials & Biodevices
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Session 06: Functional Materials
Session 07: Composite & Ceramic Materials

Day - 2: Monday, 29 August 2022

Online LIVE Sessions

Session 08: Thin Films, Materials Surface & Interfaces
Session 09: Functional Materials
Session 10: Emerging Technologies for Energy Applications
Session 11: Computational Materials & Graphene Innovations
Session 12: Biological and Biocompatible Materials
Session 13: Structural & Engineering Materials
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Session 15: Materials Horizon & Technology

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Opening of Congress

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Session 02: Energy Materials & Technology
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Day - 3: Tuesday, 30 August 2022

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Session 16: Electronic, Magnetic & Optical Materials
Session 17: Nanoglasses Symposium
Session 18: Battery Materials and Nuclear Energy
Session 19: Biosensors, Bioelectronics and Biodevices
Session 20: Metamaterials
Session 21: Nanomaterials & Nanotechnology
Session 22: Carbon Materials & Technology

Onsite Sessions

Time Zone: GMT +3 (Finland), Onsite, Session 06 to 08 at Deck 10, Conference Centre, M/S Gabriella

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Session 07: Emerging Technologies & Graphene
Session 08: Photocatalysis & Electrocatalysis
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Closing of Congress (Online LIVE)

Organizer's Desk

The International Association of Advanced Materials (IAAM) welcomes all of you in the European assembly of Advanced Materials Congress (AMC), 28 - 31 August 2022. This congress is organized with Onsite and Online LIVE Hybrid Setups, where onsite sessions will be hosted at the Conference Center, M/S Gabriela, Viking Line (Stockholm-Helsinki-Stockholm). The online sessions will be conducted from IAAM head office, Ulrika, Sweden.

The AMC assembly is one of comprehensive advanced materials forum to discuss the recent trends and deep intuition for academia and industry. The European meeting will attest proficient of parallel events covering thirty eight scientific sessions with the hybrid setups for the next four days. Here**, IAAM Fellow Summit organized to dedicate the materials knowledge and excellence for the development of next generation technologies,** where innovation supporting the new process and development for climate neutral society. Additionally, unification of **Advanced Energy Materials & Technology Congress, Baltic Conference Series and International Conference on Nanomaterials & Nanotechnology** together as parallel events produce ooportunities to esteemed research organisations and educational institutes for sharing their R&D efforts at global platform and attaining valuable comments and cooperation.

The congress received **416 abstracts from as many as 41 countries and profoundly conducting presentation of 196 talks from 36 countries of all five continents**. **The congress will run with 38 thematic sessions up to 67 hours of four days** covering advanced materials lectures, series of oral & poster presentations, welcome ceremony, and IAAM felicitation ceremony at Onsite and Online LIVE hybrid setups. To add to this commemoration, the congress will also witness the Nanoglass Symposium Discussion holding on the occasion of United Nation year of nanograss among all delegates at Online LIVE Session 17 on day three.

The congress is going to be a wide-ranging unification of materials science, engineering, and technology. It is our earnest and genuine expectation that these four days will help us to attain about extensive values and fulfil all our scientific goals for this European assembly. The varied intangible proceedings on Materials ranging from Electronic, Magnetic, Optical, Nano, Bio, Green, Structural, Engineering, Smart, Functional, Interface, Electrolytic etc., Technologies such as Net-Zero, Nanotechnology, Devices, Electronics, Semiconductor, Polymer, Energy, Healthcare, Environmental, Self Powered, etc. Science includes Catalysis, Composites, Energy, Polymer, Ceramics, Hydrogen, Nuclear, Fuel Cells, Batteries, Supercapacitors etc. Innovation emerges Buildings, Graphene, Nanoglasses, Energy, Healthcare and Devices etc. will be discussed clean tech perspective, which signifies important finding, limitations, and prospects intrinsic in the prevailing strategies for the European Commission Climate Neutrality Deals and United Nation Sustainability Development Goals.

IAAM offers world-class congress assemblies with standard healthcare guidelines at onsite and connects researchers through Online LIVE to make everyone accessible into this exciting global meet, which may lead to decisive materials world.

We look forward to meeting you all and to joining fruitful discussions.

Sincerely,
Dr. Ashutosh Tiwari
Secretary General
E-mail: director@iaam.se and Web: https://iaam.se/ashutosh-tiwari-director

Advanced Materials Congress

Connecting industry and academia to discuss recent developments, exchange experiences, explore collaborations and share new ideas

The European assembly of Advanced Materials Congress is intended to offer an prospect to endorse intensive discussions and collaborations among participants, to enhance and expand the knowledge of advanced research, and to surge innovation and awareness for the technological needs in the areas of materials, engineering, science and technology.

This Assembly will run with Onsite and Online LIVE Hybrid Setups

The AMC assembly represent **amalgamation of four contemporary events** that generates opportunity among delegates to extend their presence with respect to exchange of research, networking, discussion, and publication more accessible than ever before. Major attraction of this AMC assembly beholds to develop action plans for IAAM's 2030 sustainable development objectives in the **IAAM Fellow Summit**, /www.advancedmaterialscongress.org/fellow-summit/ where best research minds of academia and industry discuss the acceration plan towards climate neutrality, net zero, carbon capture, global warming etc. Importantly, topical events mentioned below will provide additional strength.

- **Advanced Energy Materials & Technology Congress**, www.advancedmaterialscongress.org/energy
- **Baltic Conference Series**, www.advancedmaterialscongress.org/baltic-spring
- **International Conference on Nanomaterials & Nanotechnology**, www.advancedmaterialscongress.org/icnano

AMC assembly creates global networking to facilitate multi-disciplinary cooperation for research, innovations, and technology that results in translational developments. The congress will offer coordination of the following contemporary research fields to pave the way for multi-inter-trans-disciplinary translational research and innovations for the market.

www.advancedmaterialscongress.org

SUBJECT AREA

- Nanomaterials & Nanotechnology
- Biomaterials & Biodevices
- Electronic, Magnetic & Optical Materials
- Structural & Engineering Materials
- Thin Films, Materials Surface & Interfaces
- Computational Materials & Modelling
- Functional Materials
- Energy Materials & Technology
- Water Research & Technology
- Biosensor & Bioelectronics
- Carbon Materials & Technology
- Batteries, Supercapacitors & Electrolytic Materials
- Polymer Science & Technology
- Composite & Ceramic Materials
- Environmental & Green Materials
- Sustainable Construction & Building Materials
- Graphene Innovations & Technology
- Semiconductor
- Metamaterials
- Climate Neutrality
- Polysaccharide and Polymer
- Self Powered Technology
- Net Zero Technology
- Wood & Biomass Based Technology
- Fuel Cells and Biofuels
- Hydrogen & Nuclear Energy
- Nanoglasses
- Catalytic Materials

Organizer

IAAM®
International Association of Advanced Materials

Congress Chair

Dr. Ashutosh Tiwari
Director, Institute of Advanced Materials
Secretary General, International Association of Advanced Materials
E-mail: director@iaam.se
Web: **www.iaam.se/ashutosh-tiwari-director**

www.iaamonline.org

IAAM congress brings young researchers and students of cross-disciplinary areas under a single umbrella. The congress provides opportunities for researchers, engineers, students, professionals, and business giants to present their research results, breakthrough innovations, discoveries, path-breaking ideas, experiences, products, and also launch their new products on a global platform.

International Association of Advanced Materials organizes the congresses in a truly unique and innovative setup, "Knowledge Experience at Sea™", which ensures the maximum interaction and most vibrant discussion to place all delegates onboard in a single vessel. IAAM congress(s) evidence strong attendance from industry and academia. Some of the elements of the IAAM congress(s) are excellent speakers, interdisciplinary research presentations, parallel sessions, symposia, and opportunities for global networking. The congress(s) will also include commercial product launches along with the experience of multi-cultural and demographic heritage while cruising.

Highlights

- A series of keynote and invited lectures, comprehensive oral and poster sessions.
- The highest level of interactions and the most vibrant discussions, while cruising.
- Delegates will have full access to the concurrent conference tracks to mix-and-match presentations and maximize networking.
- The congress process will commence with Online LIVE mode on **28th August 2022** from Stockholm, Sweden and will conclude on **31st August 2022**.
- A head-on interaction between the exhibitors and sponsors.
- Presence of business technocrats.
- Congress running with the wave of science, engineering, and technology.
- The format of **"Knowledge Experience at Sea™"** ensures the maximum interaction and the most vibrant discussion by placing all aboard in a single vessel while sailing.
- The congress will provide you an amazing experience with lectures of eminent speakers, high-quality presentations, and global networking.
- Excellent experience of European cruise hospitality, culture, and social activities in two countries (Sweden & Finland) of Europe, along with the beautiful architectural, natural and cultural views.

Scientific Committee

Mark Schulz
University of Cincinnati
USA

Roger Leblanc
University of Miami
USA

Claudia Riccardi
University of Milano Bicocca
Italy

Yoon-Bong Hahn
Jeonbuk National University
Korea

Gregory Light
Providence College
USA

Suddhasatwa Basu
CSIR-IMMT Bhubaneshwar
India

Baolong Shen
Southeast University
China

Bing-Huei Chen
Fu Jen Catholic University
Taiwan

Chol-Jun Yu
Kim Il Sung University
Democratic People's Republic of Korea

Vasudevan Biju
Hokkaido University
Japan

Xichun Luo
University of Strathclyde
UK

Jong-Soo Rhee
Kyung Hee University
Korea

John Wang
National University of Singapore
Singapore

Junhui Hu
Nanjing University of Aeronautics & Astronautics
China

Summary of Online LIVE and Onsite Program

Day-1: Sunday, 28 August 2022 Stockholm, Sweden Central European Summer Time (GMT+2) Time Zone for Online LIVE: GMT+2 (Sweden Time)	
All day **Online LIVE**	08.00 - 20.00
1. Opening of Congress and Session (**Online LIVE**)	07.45 - 08.00
Online LIVE **Sessions (01 - 07)** Time Zone: GMT+2 (Sweden Time)	08.00 - 22.00
Online LIVE sessions will run on Central European Summer Time, GMT+2 (Sweden Time)	

Day-2: Moday, 29 August 2022 Port of Stockholm, Sweden Time Zone for Online and Onsite: GMT+2 (Sweden Time)	
Online LIVE Sessions (08 to 15) Time Zone: GMT+2 (Sweden Time)	08.00 – 22.30
Registration (**Onsite**) at Viking Line Terminal, Stadsgarden, 11630 Stockholm, Sweden	08.30 - 10.00
Check-in and Boarding (**Onsite**) to M/S Gabriella, Viking Line Cruise and Drop Luggage at Conference Auditorium, Deck 10, Conference Centre	10.30 - 11.00
Welcome Message and **Onsite** Instructions	11.00 - 11.15
Opening Ceremony, Session 01 **(Onsite),** Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella	11.15 - 12.00
Lunch (**Onsite**), Deck 8	12.00 - 13.00
Session 02 **(Onsite),** Deck 10	13.00 – 14.30
Coffee Break, Cabin Access and Poster Setup	14.30 – 15.30
Session 03 **(Onsite),** Deck 10	15.30 - 17.00
Coffee Break at Conference Center, Deck-10	17.00 -17.15
Session 04 **(Onsite),** Deck 10	17.15 - 18.30
Poster, Session 05 **(Onsite),** Deck 10	18.30 - 19.00
Dinner **(Onsite)** at Viking Buffet, Deck 8	19.00 - 20.00
20.00 - 22.00 Cultural Program **(Onsite)**, A variety of Scandinavian Cultural Programme is available in the evening at Club Mar, deck 8	

Day-3: Tuesday, 30 August 2022 Port of Helsinki, Finland Time Zone for Onsite: GMT+3 (Finland Time) Time Zone for Online LIVE: GMT+2 (Sweden Time)	
Breakfast at Viking Buffet, Deck 8	07.30 - 08.30
Online LIVE Sessions (16 to 22), Time Zone: GMT+2 (Sweden Time)	07.00 - 19.15
Session 06 (**Onsite**), Deck 10	09.00 - 10.45
Coffee Break at Conference Center, Deck-10	10.45 - 11.00
Session 07 (**Onsite**), Deck 10	11.00 - 13.00
Lunch at Viking Buffet, Deck 8	13.00 - 14.00
Conference Group Photo, Cruise Information Desk at Deck 7	14.00 - 14.15
Sightseeing in Helsinki, Meeting Place, Cruise Information Desk on Deck 7 at 14.15	14.15 - 16.30
Break	16.30 - 17.00
Session 08 (**Onsite**), Deck 10	17.00 - 18.30
Closing Ceremony **(Onsite)**: Announcements of Best Presentations and Closing Remarks, Conference Center, Deck-10	18.30 - 19.00
Dinner **(Onsite)** at Viking Buffet, Deck 8	19.00 - 20.00
20.00 - 22.00 Cultural Program **(Onsite)**, A variety of Scandinavian Cultural Programme is available in the evening at Club Mar, deck 8	

Day-4: Wednesday, 31 August 2022 Port of Stockholm, Sweden Time Zone for Online LIVE: GMT+2 (Sweden Time)	
Breakfast at Viking Buffet, Deck 7	07.30 - 08.30
Online LIVE Sessions (23 to 30), Time Zone: GMT+2 (Sweden Time)	07.00 - 22.00
Check Out* from the Cabin with Luggage and Disembarkation from the Viking Cruise **(Onsite)**	09.30 - 10.00
Social Activity in Stockholm*** Meeting on Cruise Information Desk at Deck 7 at 09.30 **(Onsite)**	10.30 - 12.00
Commencement of Tour at Central Train Station, Stockholm **(Onsite)**	12.00
Closing Ceremoney of **Online LIVE** Sessions, Time Zone: GMT+2 (Sweden Time)	21.30 - 22.00
***Meeting place: Cruise Information Desk at Deck 7. Please carry your passport, 2 or 3 dose vaccine certificate, and cabin key with you. **(Onsite)** #Carry your luggage and be seated on bus. The bus will drop to Stockholm Central Railway Station after sightseeing. **(Onsite)**	
Important information can be keep here. **Advanced Materials Congress** Stockholm Assemblies will be organized with Onsite and Online LIVE Hybrid Setups. Online Live sessions will be scheduled at Central European Summer, CEST, GMT+2. Onsite program will be organized as per the local time- Day 2: Swedish time, Day 3: Finish time, and Day 4: Swedish time.	

Summary of Online LIVE Program

Day-1:Sunday, 28 August 2022 Stockholm, Sweden Central European Summer Time (GMT+2)		**Day-2: Moday, 29 August 2022** Stockholm, Sweden Central European Summer Time (GMT+2)	
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Session 02: Energy Materials	10.00 - 12.00	**Session 09:** Functional Materials	10.00 - 11.30
Session 03: Structural & Engineering Materials	12.00 - 14.00	**Session 10:** Emerging Technologies for Energy Applications	11.30 - 13.15
Session 04: Biomaterials & Biodevices	14.00 - 16.00	**Session 11:** Computational Materials & Graphene Innovations	13.15 - 15.30
Session 05: Polymer Science & Technology	16.00 - 18.00	**Session 12:** Biological & Biocompatible Materials	15.30 - 17.00
Session 06: Functional Materials	18.00 - 20.00	**Session 13:** Structural & Engineering Materials	17.00 - 18.15
Session 07: Composite & Ceramic Materials	20.00 - 22.00	**Session 14:** Nanomaterials & Nanotechnology	18.15 - 20.15
		Session 15: Materials Horizon & Technology	20.15 - 22.30
Day-3: Tuesday, 30 August 2022 Stockholm, Sweden Central European Summer Time (GMT+2)		**Day-4: Wednesday, 31 August 2022** Stockholm, Sweden Central European Summer Time (GMT+2)	
Session 16: Electronic, Magnetic & Optical Materials	07.00 - 10.00	**Session 23:** Environmental & Green Materials	07.00 - 10.00
Session 17: Nanoglasses Symposium	10.00 - 12.00	**Session 24:** Water Technology & Climate Neutrality	10.00 - 12.00
Session 18: Battery Materials and Nuclear Energy	12.00 - 14.00	**Session 25:** Structural & Engineering Materials	12.00 - 14.00
Session 19: Biosensors, Bioelectronics and Biodevices	14.00 - 15.15	**Session 26:** Nanomaterials & Nanotechnology	14.00 - 16.00
Session 20: Metamaterials	15.15 - 16.15	**Session 27:** Engineering Materials & Nanotechnology	16.00 - 17.15
Session 21: Nanomaterials & Nanotechnology	16.15 - 18.00	**Session 28:** Polysaccharide and Nano Fibers	17.15 - 18.30
Session 22: Carbon Materials & Technology	18.00 - 19.15	**Session 29:** Energy Materials & Technology	18.30 - 20.00
		Session 30: Computational Materials & Modelling	20.00 - 21.30
		Closing Ceremony (Online LIVE)	21.30 - 22.00

Session Chairs (Onsite)

Day - 2: Monday, 29 August 2022

Stockholm, Sweden , Time Zone for Onsite: GMT+2

Session 01: Nanomaterials & Nanotechnology

Ashutosh Tiwari
Institute of Advanced Materials, IAAM
Sweden

Kamal Youcef-Toumi
Massachusetts Institute of Technology
USA

Session 02: Energy Materials & Technology

Thomas Krause
Royal Military College of Canada
Canada

Claudia Riccardi
University of Milano-Bicocca
Italy

Session 03: Polymer Science & Technology

Menahem Rotenberg
Technion - Israel Institute of Technology
Israel

Katarzyna Merkel
University of Silesia in Katowice
Poland

Session 04: Climate Neutral Materials Technology

George Ivanov
University of Architecture
Bulgaria

Chia-Ching Chang
National Yang Ming Chiao Tung
University, Taiwan

Session 05: Poster Session

Sivakumar Manickam
Universiti Teknologi Brunei, Brunei

Mohd Abdullah
SIBCo Medical and Pharmaceuticals
SDN BHD, Malaysia

Day - 3: Tuesday, 30 August 2022

Helsinki, Finland, Time Zone for Onsite: GMT+3

Session 06 : Nanomaterials & Nanotechnology

James Stubbins
University of Illinois at Urbana-Champaign
USA

Hermenegildo Garci-a Gomez
Universitat Politecnica de Valencia
Spain

Session 07: Emerging Technologies & Graphene

Christine Dufes
University of Strathclyde, United Kingdom

Mikael Syvajarvi
Institute of Materials Science, IAAM,
Sweden

Session 8: Photocatalysis & Electrocatalysis

Ruggero Barni
Universita degli Studi di Milano-Bicocca,
Italy

Arkadii Arinstein
Technion – Israel Institute of Technology,
Israel

Session Chairs (Online LIVE)

Day - 1: Sunday, 28 August 2022
Stockholm, Sweden, Central European Summer Time (GMT+2)

Session 01: Nanomaterials & Nanotechnology

Kostya Ostrikov
Queensland University of Technology
Australia

Emma Kendrick
University of Birmingham
United Kingdom

Session 02: Energy Materials

Laura Torrente
University of Cambridge, United Kingdom

Chunzhong Li
East China University of Science and Technology, China

Session 03: Structural & Engineering Materials

Frank Walther
TU Dortmund University, Germany

Qingyuan Wang
Chengdu University, China

Session 04: Biomaterials & Biodevices

Sylvain Martel
Polytechnique Montreal, Canada

Philippe Barthelemy
University of Bordeaux, France

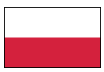
Session 05: Polymer Science and Technology

Paschalis Alexandridis
The State University of New York (SUNY), USA

Luciana Tavares
University of Southern Denmark, Denmark

Session 06: Functional Materials

Gian Montanari
Florida State University, USA



Roman Puzniak
Institute of Physics of the Polish Academy of Sciences, Poland

Session 07: Composite & Ceramic Materials

Jorge Chavarin
Universidad Autónoma del Estado de Morelos-CIICAp, Mexico

Abuzar Kabir
Florida International University, USA

Day - 2: Monday, 29 August 2022
Stockholm, Sweden, Central European Summer Time (GMT +2)

Session 08: Thin Films, Materials Surface & Interfaces

Melanie MacGregor
Finders University, Australia

Beng Kang Tay
Nanyang Technological University, Singapore

Session 09: Functional Materials

Haruo Sugiyama
Osaka University, Japan

Ken Leung
Hong Kong Baptist University, Hong Kong

Session 10: Emerging Technologies for Energy Applications

Shin Aoki
Tokyo University of Science, Japan

Cong Chen
Dalian University of Technology, China

Session 11: Computational Materials & Graphene Innovations

Shiping Wen
University of Technology Sydney, Australia

Weiqiao Deng
Shandong University, China

Session 12: Biological and Biocompatible Materials

Mei Wu
Harvard Medical School, USA

Phei Er Saw
Sun Yat-sen University, China

Session 13: Structural & Engineering Materials

Muhammed Basheer
University of Leeds, United Kingdom

Peter Olubambi
University of Johannesburg, South Africa

Session 14: Nanomaterials & Nanotechnology

Thomas Wong
Illinois Institute of Technology, USA

Wen Meng
Louisiana State University, USA

Session 15: Materials Horizon & Technology

Antonio Riul Jr
University of Campinas, UNICAMP, Brazil

Virender Sharma
Texas A&M University, USA

Day - 3: Tuesday, 30 August 2022

Stockholm, Sweden, Central European Summer Time (GMT +2)

Session 16: Electronic, Magnetic & Optical Materials

Changqing Jin
Chinese Academy of Sciences, China

Xinping Zhang
Institute of Information Photonics Technology, China

Cheng-Fu Yang
National University of Kaohsiung, Taiwan

Session 17: Nanoglasses Symposium

Arnaud Caron
School of Energy, KOREATECH Republic of Korea

Session 18: Battery Materials and Nuclear Energy

Bunshi Fugetsu
The University of Tokyo, Japan

Hwan Kyu Kim
Korea University, Republic of Korea

Session 19: Biosensors, Bioelectronics and Biodevices

Xiaoyan Zhang
Capital Medical University, China

Jingwei Xie
University of Nebraska Medical Center, USA

Session 20: Metamaterials

Michel Meunier
Polytechnique Montreal, Canada

Kavan Hazeli
University of Arizona, USA

Session 21: Nanomaterials & Nanotechnology

Srinivas Sridhar
Northeastern University & Harvard Medical School, USA

Gregory Light
Providence College, USA

Session 22: Carbon Materials & Technology

Mark Schulz
University of Cincinnati, USA

Frank Cheng
University of Calgary, Canada

Day - 4: Wednesday, 31 August 2022

Stockholm, Sweden, Central European Summer Time (GMT +2)

Session 23: Environmental & Green Materials

Iseult Lynch
University of Birmingham, United Kingdom

Xiaojun Chen
Nanjing Tech University, China

Haruo Sugiyama
Osaka University, Japan

Session 24: Water Technology & Climate Neutrality

Shaohua Shen
Xi'an Jiaotong University, China

Gehad Mohamed
Cairo University, Egypt

Session 25: Structural & Engineering Materials

Zemin Wang
Huazhong University of Science and Technology, China

Peng Feng
Tsinghua University, China

Session 26: Nanomaterials & Nanotechnology

Agnieszka Jastrzebska
Warsaw University of Technology, Poland

Yonggang Yao
Huazhong University of Science and Technology, China

Session 27: Engineering Materials & Nanotechnology

Tao Yang
City University of Hong Kong, China

Yongdong Jin
Chinese Academy of Sciences, China

Session 28: Polysaccharide and Nano Fibers

Shuji Ogata
Nagoya Institute of Technology, Japan

Huiyang Gou
Center for High Pressure Science and Technology Advanced Research, China

Session 29: Energy Materials & Technology

Eva Unger
Helmholtz Zentrum Berlin, Germany

Erik Kjeang
Simon Fraser University, Canada

Session 30: Computational Materials & Modelling

Gian-Marco Rignanese
Université catholique de Louvain, UCLouvain, Belgium

Valeriy Buryachenko
Micromechanics and Composites LLC, USA

Congress Speakers

Kostya Ostrikov
Queensland University of Technology
Australia

Thomas Krause
Royal Military College of Canada
Canada

Helene Lombois-Burger
HOLCIM Innovation Center, France

Emma Kendrick
University of Birmingham, United Kingdom

Laura Torrente
University of Cambridge, United Kingdom

Chunzhong Li
East China University of Science and
Technology, China

Frank Walther
TU Dortmund University
Germany

Qingyuan Wang
Chengdu University, China

Sylvain Martel
Polytechnique Montreal, Canada

Philippe Barthelemy
University of Bordeaux, France

Paschalis Alexandridis
The State University of New York
(SUNY), USA

Luciana Tavares
University of Southern Denmark, Denmark

Gian Montanari
Florida State University, USA

Roman Puzniak
Institute of Physics of the Polish
Academy of Sciences, Poland

Abuzar Kabir
Florida International University
USA

David Diaz Diaz,
Universidad de La Laguna, Spain

Beng Kang Tay
Nanyang Technological University,
Singapore

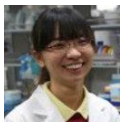
Haruo Sugiyama
Osaka University, Japan

Ken Leung
Hong Kong Baptist University, Hong Kong

Shin Aoki
Tokyo University of Science, Japan

Shiping Wen
University of Technology Sydney, Australia

Mei Wu
Harvard Medical School, USA



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Sun Yat-sen University, China

Muhammed Basheer
University of Leeds, United Kingdom

Michel Meunier
Polytechnique Montreal, Canada

Wen Meng
Louisiana State University, USA

Kamal Youcef-Toumi
Massachusetts Institute of Technology, USA

Virender Sharma
Texas A&M University, USA

Cheng-Fu Yang
National University of Kaohsiung
Taiwan

Arnaud Caron
School of Energy, KOREATECH,
Republic of Korea

Hwan Kyu Kim
Korea University, Republic of Korea

Jochen Salber
Ruhr-University Bochum, Germany

Jingwei Xie
University of Nebraska Medical Center, USA

Dongling Ma
Institut National de la Recherche Scientifique (INRS), Canada

Srinivas Sridhar
Northeastern University & Harvard Medical School, USA

Gregory Light
Providence College, USA

Mark Schulz
University of Cincinnati, USA

Menahem Rotenberg
Technion - Israel Institute of Technology, Israel

Yi-Lung Mo
University of Houston, USA

Michele Aresta
University of Bari, Italy

Iseult Lynch
University of Birmingham
United Kingdom

Martin Schmal
Federal University of Rio de Janeiro, Brazil

Valeriy Buryachenko
Micromechanics and Composites LLC, USA

Zemin Wang
Huazhong University of Science and Technology, China

Peng Feng
Tsinghua University, China

Agnieszka Jastrzebska
Warsaw University of Technology, Poland

Shuji Ogata
Nagoya Institute of Technology, Japan

Eva Unger
Helmholtz Zentrum Berlin, Germany

Erik Kjeang
Simon Fraser University, Canada

Gian-Marco Rignanese
Université catholique de Louvain, UCLouvain, Belgium

Guidelines For Onsite Delegates

Itenary of Cruise

Date	Day	Port Description	Arival Time	Departure Time
29-08-2022	Monday	Stockholm, Sweden		15:00
30-08-2022	Tuesday	Helsinki, Finland	08:00	16:00
31-08-2022	Wednesday	Stockholm, Sweden	09:00	

1. TRAVEL GUIDELINES & INFORMATION

A. Planning your travel

- Please make sure to ready your visa before arriving. To know about visa type and other formalities, please contact embassy/consulate in your country of residence.
- The check-in will be held at Terminalen Stadsgården, 116 30 Stockholm on 29 August 2022 from 09.00 – 10.00 AM.
- If you are arriving in Stockholm, one-day before (29 August 2022), you may prefer to stay in a hotel, near the port.

B. COVID related guidelines

(a) To check-in to the cruise, you need to be **fully vaccinated**.

- Please keep your vaccination certificate with you while travelling.
- Guests are considered fully vaccinated if they received the full set of vaccine shots more than 14 days before the start of the cruise with an approved Covid-19 vaccine including Pfizer, Moderna, AstraZeneca, Johnson & Johnson, Sinopharm, Sputnik V, Covishield, Sinovac.
- A “mix-and-match” combination of the above list of vaccines is accepted.
- Vaccines will be considered valid within 6 months from the second dose or booster.
- The validity of the vaccine needs to cover up to the end of the cruise.
- Guests that recovered from Covid-19 and received only one shot of vaccine are not considered as fully vaccinated.
- Look WHO and authorised website for conditionally approved vaccines in the Europe.
- Guests with a conditionally certified vaccine must carry a certificate with a authorised health organisation upon arrival to Helsinki, Finland.

(c) The original test and vaccination certificate must be presented at the terminal (paper or electronic format)

- The certificate must be in one of the following languages: English, Italian, German, French or Spanish.
- The COVID 19 test certificate must contain: guest's personal data (verifiable with the other travel documents), date of the test, identification / contact details of the centre that performed the analysis, technique used and negative test result.

(d) Please carry the mandatory **Covid-19 insurance policy** during the check-in process. This has been booked by the Organizer on behalf of all delegates and will send to you the copy along with the cruise ticket.

(e) All passengers must follow national and international guidelines issue during visit time by host countries.

(g) Our congress venue is in COVID bubble with all the required COVID guidelines. Please visit https://www.youtube.com/watch?v=fxeEAMSy2bQ to know more.

C. Checklist during embarkation

For a seamless embarkation process, please make sure to bring:

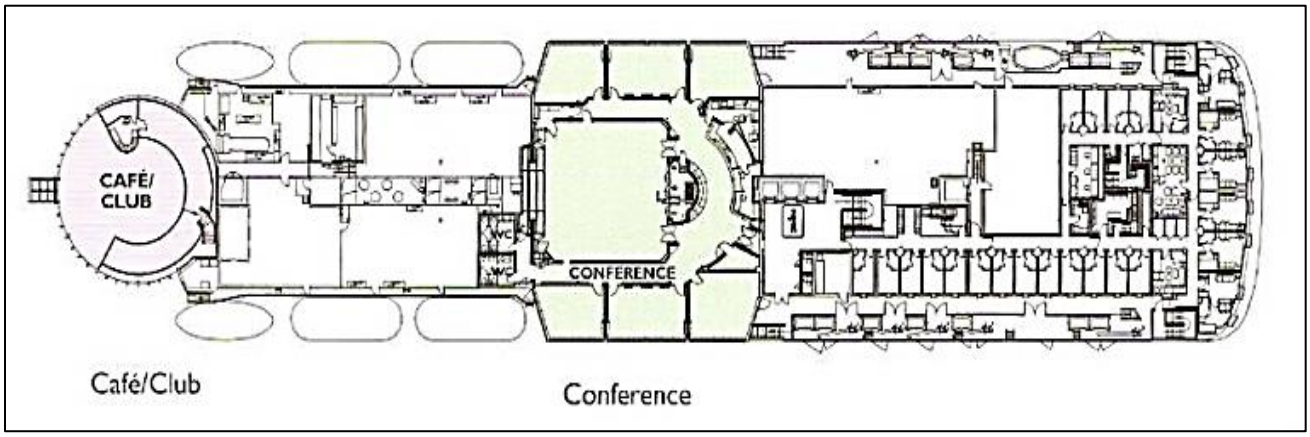
(a) The original COVID 19 test and vaccination certificate (paper or electronic format)

(b) Valid identity documents (Passport, visa etc.)

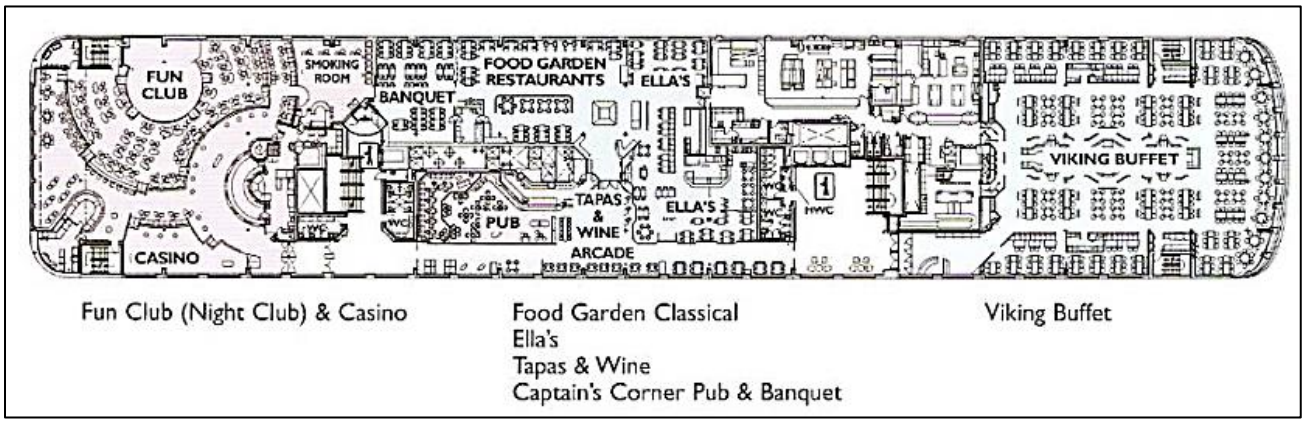
The cruise may deny boarding in case of:

- Symptoms i.e., fever (>37,5 C C / 99.5 F), cough, shortness of breath, chills, muscle/body aches, fatigue, headache, sore throat and loss of taste/smell in the 14 days prior to embarkation.
- Temporary travel restrictions based on local circumstances. For example, certain countries may deny visas or prohibit entry based on travel history or nationality.

2. CONGRESS VENUE



Deck 10, Conference Center



Deck 8, Viking Buffet

To know about the venue of the congress, please visit:

www.advancedmaterialscongress.org/baltic-spring/pages/location

Guidelines and Important Information

A. Hybrid congress setups

The congress will be organized with an Onsite-Online-On demand hybrid set up. Internet facility available at congress venue. Delegates may get free WiFi connection at venue.

B. General guidelines for lectures and presentations

There will be several types of contributions:

- **Keynote Talk:** Presentation Time - 30 minutes; 25 minutes for the presentation followed by 05 minutes' question-answer session.
- **Advanced Materials Lecture**: 20 minutes; 17 minutes for the presentation followed by 03 minutes' question-answer session. This includes the IAAM Fellow, Award and Medal lectures.
- **Invited Talk:** Presentation Time - 20 minutes; 17 minutes for the presentation followed by 03 minutes' question-answer session.
- **Oral Presentation:** Presentation Time - 15 minutes; 13 minutes for the presentation followed by 02 minutes' question-answer session.
- **Poster Presentation:** There will be separate onsite session for the poster presenters, where they will discuss their work to the audience and poster jury.

C. Special guidelines for onsite delegates

Please follow the below guidelines for attending the onsite congress.

- The onsite conference will run as per the **Central European Summer time (CEST) (GMT+2)**.
- **The delegates must wear their Name Batch (which you will get during the congress registration**) and **Face Mask** all the time during the conference.
- Please follow the **COVID guidelines** and instructions.
- Timing of all meals (**Breakfast, Lunch and Dinner**) will be communicated onboard and may vary from day to day pending on time in ports. Normal times for breakfast is 07.30 - 08:30, lunch 13:00 - 14:00 and dinner 19:00 or 20:00.
- **Coffee and water on tap** (to have in glass does not bottle) are served in the buffet during the opening hours. Soft drinks and coffee can be purchased in all bars onboard.
- **In onsite sessions at Day – 3** (Tuesday, 30 August 2022) congress will run with Finland time zone (GMT +3).
- For **disembarkation** after the congress, time and procedure will be communicated to you onboard.

Guidelines & Information for Online LIVE

1. **ONLINE LIVE GUIDELINES**

   A. All the lectures of the congress will be recorded for publication in the open access audio video literature, Video Proceedings of Advanced Materials after the proof correction. For the broader audience, IAAM circulates the open access video article to leading researchers and members of association with its monthly newsletter.

   B. **Please follow below guidelines:**
   - All the speakers should join the meeting 30 minutes in advance.
   - Advanced Materials Lecture: 20 minutes; 17 minutes for the presentation followed by 03 minutes' Q&A session.
   - After the lecture, there will be a discussion session with the chair & panel members.
   - As the lecture will be published for open science under "Live knowledge at Web", you are advised to not use any confidential information in the presentation.
   - Please find your talk time in the program with and prepare your lecture accordingly.
   - Keep your device charged and ensure your internet connection is stable.
   - Please download the Zoom meeting application before the meeting.
   - Click on the zoom meeting link or copy and paste the URL to a browser.
   - Once you join, you will be directed to download/open the Zoom Meeting App.
   - There will be a green colour "Share screen" option-symbol in the Zoom platform at bottom to share your PowerPoint presentation.
   - To ask question(s) during/after the lecture, click on Q&A icon and type your query.
   - Any recognition is non-transferable and not returnable at any condition.
   - The speaker is authorised to use this recognition under the list of achievements.
   - The organization reserves the right to use photos/videos for the promotion of advanced materials on international platforms. Hardwire your internet connection:
     - This will help you avoid any issues with an unstable WiFi connection, which can affect your audio quality and the overall attendee experience.

   C. **Test the audio before your webinar begins:** This will ensure your speakers and mic are working properly before the live event begins.
   - Here's how to test your device audio.
   - Minimize background noise: Try to host your webinar in a quiet place. If you must be in a loud environment, using a headset with a mic often reduces background noise compared with your computer's built-in microphone. In fact, a headset is a general best practice for higher-quality audio than other built-in options.

   D. **Dress for webinar:** You'll be on video, so be sure to wear business attire. We recommend solid colours as opposed to garments with patterns.

2. **ONLINE LIVE INFORMATION**

   A. For more details, please visit: https://www.advancedmaterialscongress.org/web/guidelines-information/

   B. Time to join the online event, **Central European Summer time** (CEST, GMT +2)
   - 1st Day, 28 August : 07.45 CEST
   - 2nd Day, 29 August : 07.45 CEST
   - 3rd Day, 30 August : 06.45 CEST
   - 4th Day, 31 August : 06.45 CEST

Please click the below link to join the Online LIVE congress.

Congress joining link:

https://us06web.zoom.us/j/85717084452?pwd=Mm1tQzNBSlk0ZVBtWngxS2lENzZnQT09

Webinar ID: 857 1708 4452 | Passcode: 025978

**The organizer reserves the right to make any changes, alter or modify the program at any time without prior notice.

HYBRID SETUPS

ONSTIE - ONLINE LIVE

Day – 1 : Sunday, 28 August 2022
Day – 2 : Monday, 29 August 2022
Day – 3 : Tuesday, 30 August 2022
Day – 4 : Wednesday, 31 August 2022

Scientific Program

ONSITE SESSIONS

Session numbers: 1-8

Day - 1: Sunday, 28 August 2022

Stockholm, Sweden, Central European Summer Time (GMT+2)

07.45-21.45 **Online LIVE Sessions** *(1 to 07) refer P-26-29*

Day - 2: Monday, 29 August 2022

Port of Stockholm, Sweden, Time Zone: GMT +2 (Sweden Time)

08.00-22.30 **Online LIVE Sessions** *(8 to 15) refer P-30-33*

08.30-10.00 **Registration** at Viking Line Terminal, Stadsgarden, 11630 Stockholm, Sweden

10.30-11.00 **Check-in and Boarding** to M/S Gabriella, Viking Line Cruise and Drop Luggage at Conference Auditorium, Deck 10, Conference Centre

Onsite Venue - Conference Audiorium
Deck 10, Conference Centre, M/S Gabriella

29 August 2022

11.00-11.15 **Welcome Message from Organizer: Ashutosh Tiwari,** Secretary General, International Association of Advanced Materials; and Director, Institute of Advanced Materials, IAAM, Sweden

11.15-12.00 **Onsite - Session 01: Nanomaterials & Nanotechnology**

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): Ashutosh Tiwari, Institute of Advanced Materials, IAAM, Sweden and **Kamal Youcef-Toumi,** Massachusetts Institute of Technology, USA

11.15-11.45 **Keynote Lecture: Thomas Krause, *Nondestructive Evaluation's Role in Improving Sustainability of Components and Structures,*** Royal Military College of Canada, Canada

11.45-12.05 **Advanced Materials Lecture: Christine Dufes, *Tumour Regression after Intravenous Administration of Novel Tumour-Targeted Nanomedicines,*** University of Strathclyde, United Kingdom

12.00-13.00 **Lunch, Viking Buffet, Deck 8**

29 August 2022

13.00-15.30

Onsite - Session 02: Energy Materials & Technology

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): Thomas Krause, Royal Military College of Canada, Canada and **Claudia Riccardi,** University of Milano-Bicocca, Italy

13.00-13.30 **Keynote Lecture: James Stubbins, *Advances in the Understanding of Mechanical Behavior of Materials for Advanced Energy Systems,*** University of Illinois at Urbana-Champaign, USA

13.30-13.50 **Invited Lecture: Ruggero Barni, *Hydrogen Reforming in A Gliding Arc Tornado Device,*** Universita degli Studi di Milano-Bicocca, Italy

13.50-14.10 **Advanced Materials Lecture: Sivakumar Manickam, *Greener and Energy-Efficient Cavitation Assisted Process Intensification for the Generation of Nanomaterials,*** Universiti Teknologi Brunei, Brunei

14.10-14.25 **Oral: Marc Steinberger, *All Inkjet-printed Organic Solar Cells on Curved Surfaces of 3D Objects,*** Friedrich-Alexander-Universitat Erlangen-Nurnberg-FAU, Germany

14.30-15.30 **Coffee Break (Conference Center, Deck-10), Cabin Access and Poster Setup**

29 August 2022

15.30-17.00

Onsite - Session 03: Polymer Science & Nanotechnology

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): Menahem Rotenberg, Technion - Israel Institute of Technology**,** Israel and **Katarzyna Merkel,** University of Silesia in Katowice, Poland

15.30-15.50 **Invited Lecture: Katarzyna Merkel, *Dynamics Behaviour of the Fast Switching Materials Composed of Liquid Crystal Dimers with Nanoscale Spatial Modulation*,** University of Silesia in Katowice, Poland

15.50-16.10 **Advanced Materials Lecture: Arkadii Arinstein, *Imitation Modelling of Complex Nano-Systems,*** Technion - Israel Institute of Technology, Israel

16.10-16.25 **Oral: Jing Yu, *Soft Hydrogel Platform for Controlled Phase Transition in Epithelial Monolayer,*** Nanyang Technological University, Singapore

16.25 -16.40 **Oral: Hassnain Abbas Khan, *Promotional Effect of PtPd Alloying on Wet CO and Hydrocarbon Oxidation,*** King Abdullah University of Science and Technology, Saudi Arabia

16.40 -16.55 **Oral: Tamara van Roo, *On the Generation of Highly Oriented Test-Specimens and the Influence of Preparation,*** Fraunhofer Institute for Structural Durability and System Reliability LBF, Germany

16.55 -17.10 **Oral: Chensheng Xu, *Morphological Investigation of the Multi-dimensional Additives in Electrically Conducting Polymers*,** University of Stuttgart, Germany

17.05-17.15 **Break**

29 August 2022

17.15-18.30 **Onsite - Session 04: Climate Neutral Materials Technology**

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): George Ivanov, University of Architecture, Bulgaria and **Chia-Ching Chang,** National Yang Ming Chiao Tung University, Taiwan

17.15-17.45 **Keynote Lecture: Mohd Abdullah, *An action-oriented framework to address Global SDGs: The Proposed IAAM-HEESBA Consortium on Integrated Biorefinery for Sustainable Energy and Bioproducts,*** SIBCo Medical and Pharmaceuticals SDN BHD, Malaysia

17.45-18.05 **Invited Lecture: Mikael Syvajarvi, *Innovation and Research to Business From Nanotechnologies in Innovation Ecosystem Contexts,*** Institute of Materials Science, IAAM, Sweden

18.05-18.25 **Invited Lecture: Dalia Saad, *Microplastics Abundance, Characteristics, and Sources in Surface Water Samples from the Vaal River,*** South Africa, University of the Witwatersrand, South Africa

29 August 2022

18.30-19.00 **Onsite - Session 05: Poster Session Materials Engineering & Technology**

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Poster Jury: Sivakumar Manickam, Universiti Teknologi Brunei, Brunei and **Mohd Abdullah,** SIBCo Medical and Pharmaceuticals SDN BHD, Malaysia

18.30-18.35 **Sangun Kim, *A Study on Improvement of Crack Resistance of Epoxy for CRT through Micelle Block Co-Polymer,*** LS ELECTRIC, Republic of Korea

18.35-18.40 **Aljawhara Almuqrin, *Novel Nanomaterials Fir Ionizing Radiation Shielding Applications,*** Princess Nourah Bint Abdulrahman University, Saudi Arabia

18.40-18.45 **Menahem Rotenberg, *Non-Genetic "Optogenetics": Soft and Flexible Silicon Membrane for Organ Level Optical Modulation,*** Technion - Israel Institute of Technology, Israel

18.45-18.50 **Yu Lu, *Pulsed Sub-millisecond Growth of Bifunctional HEAs Decorated with Numerous Hollow Active Sites Enabling Extraordinary Oxygen and Hydrogen Evolutions,*** Nanyang Technological University, Singapore

18.50-18.55 **Cecilia Piferi, *Plasma Modification of Teflon Films for Surface Nano-Structuring,*** University of Milano-Bicocca, Italy

18.55-19.00 **Lan Yang, Ni nanoparticles/V4C3Tx Heterostructures for Electrocatalytic Nitrogen Fixation,** Nanyang Technological University, Singapore

19.00-20.00 **Dinner at Viking Buffet, Deck 8**

20.00-22.00 **Cultural Program**, Deck 8

Day - 3: Tuesday, 30 August 2022

Port of Helsinki, Finland, Time Zone: GMT +3 (Finland)

07.30-08.30 **Breakfast, at Viking Buffet, Deck 8**

08.00-20.15 **Online LIVE Sessions** *(16 to 22) refer P-33-37*

30 August 2022

09.00-10.45 **Onsite - Session 06: Nanomaterials & Nanotechnology**

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): James Stubbins, University of Illinois at Urbana-Champaign, USA and **Hermenegildo Garci-a Gomez,** Universitat Politecnica de Valencia, Spain

09.00-09.30 **Keynote Lecture: Ashutosh Tiwari, *Frontiers in Materials Science and Technology in Health, Energy & Climate,*** Institute of Materials Science, IAAM, Sweden

09.30-09.50 **Advanced Materials Lecture: Kamal Youcef-Toumi, *Nanoscale Video Imaging for Dynamic Process Visualization,*** Massachusetts Institute of Technology, USA

09.50-10.10 **Advanced Materials Lecture: Yujeong Bae, *Quantum Control of Atomic Spins on Surfaces,*** Institute for Basic Science, Republic of Korea

10.10-10.25 **Oral: Ioannis Papagiannis, *Effects of Iron Oxide Nanoparticles on Class A Foam Stability,*** Coventry University, United Kingdom

10.25-10.40 **Oral: Visileanu Emilia, *The Structure Influence of Air Born Particles on their Toxicity,*** Institutul National de Cercetare-Dezvoltare pentru Textile si Pielarie-INCDTP, Romania

10.45-11.00 **Coffee Break at Conference Center, Deck-10**

30 August 2022

11.00-12.30 **Onsite - Session 07: Emerging Technologies & Graphene**

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): Christine Dufes, University of Strathclyde, United Kingdom and **Mikael Syvajarvi,** Institute of Materials Science, IAAM, Sweden

11.00-11.20 **Advanced Materials Lecture: Chia-Ching Chang, *Surface Active Flexible Palladium Nano-Thin Film Fabrication and Functional Biomaterials Development for SARS CoV-2 Detection,*** National Yang Ming Chiao Tung University, Taiwan

11.20-11.40 **Advanced Materials Lecture: Menahem Rotenberg, Cell-Silicon hybrids for bioelectrical interrogation with sub-cellular resolution in 3D tissues,** Technion - Israel Institute of Technology, Israel

11.40-12.00 **Invited Lecture: George Ivanov, *A High Surface-to-volume Ratio Monolayer Nano-thin Phospholipid Film for Chemical Sensor Applications,*** University of Architecture, Bulgaria

12.00-12.20 **Invited Lecture: Zacharias Fthenakis, *Gas Separation Utilizing Graphene Membranes: A Theoretical Study, Institute of Theoretical and Physical Chemistry,*** National Hellenic Research Foundation, Greece

12.20-12.40 **Advanced Materials Lecture: Motilal Mathesh, *Soft Nanoarchitectonics for Functional Materials,*** Deakin University, Australia

12.40-12.55 **Oral: Mabkhoot Alsaiari, *Biomass-derived Active Carbon (AC) Modified TiO2 Photocatalyst for Efficient Photocatalytic Reduction of Chromium (VI) under Visible Light,*** Najran University, Saudi Arabia

12.55-13.10 **Oral: Marian Grosu, *Collection and Characterization of Synthetic Airborne Particles,*** The National Research & Development Institute for Textiles and Leather, Romania

13.00-14.00 **Lunch at Viking Buffet, Deck 8**

14.00-14.15 Conference Group Photo, Cruise Information Desk at Deck 7

14.15-16.30 Sightseeing in Helsinki, Meeting Place, Cruise Information Desk on Deck 7 at 14.15

16.30-17.00 **Break**

30 August 2022

17.00-18.30 **Onsite - Session 08: Photocatalysis and Electrocatalysis**

Venue: Conference Audiorium, Deck 10, Conference Centre, M/S Gabriella

Session Chair(s): Ruggero Barni, Universita degli Studi di Milano-Bicocca, Italy and **Arkadii Arinstein,** Technion - Israel Institute of Technology, Israel

17.00-17.20 **Advanced Materials Lecture: Hermenegildo Garci-a Gomez, *Metal-organic Frameworks as Versatile Solar Photocatalysts for the Production of Renewable Fuels,*** Universitat Politecnica de Valencia, Spain

17.20-17.40 **Advanced Materials Lecture: Claudia Riccardi, *Plasma Etching Techniques for Super-hydrophilic Nanostructured Fractal Surfaces,*** University of Milano-Bicocca, Italy

17.40-18.00 **Advanced Materials Lecture: Hiang Kwee Lee, *Dynamic Nanocatalyst-Liquid Interface to Boost Catalysis Beyond Diffusion Limit,*** Nanyang Technological University, Singapore

18.00-18.20 **Invited Lecture: Ana Primo, *Band Engineering of Semiconducting Graphitic Carbons: Enhancing of Photocatalytic Overall Water Splitting,*** Consejo Superior de Investigaciones Científicas-CSIC, Spain

18.20-18.35 **Oral: Ihor Surinov, *Studying of the Impact of Proper Crew Trainings and Safety Procedure during LNG Bunkering,*** National university "Odessa Maritime Academy", Ukraine

18.30-19.00 **Closing Ceremony: Announcements of Best Presentations and Closing Remarks, Conference Center, Deck-10**

19.00-20.00 **Dinner at Viking Buffet, Deck 8**

20.00-22.00 **Cultural Program, Deck 8**

31 August 2022

Day - 4: Wednesday, 31 August 2022

Port of Stockholm, Sweden, Time Zone: GMT +2 (Sweden Time)

07.30-08.30 **Breakfast at Viking Buffet, Deck 7**

08.00-22.00 **Online LIVE Sessions** ***(23 to 30) refer P-37-40***

09.30-10.00 Check Out* from the Cabin with Luggage and Disembarkation from the Viking Cruise

10.30-12.00 Social Activity in Stockholm, Meeting on Cruise Information Desk at Deck 7 at 09.30

12.00 Commencement of Tour at Central Train Station, Stockholm

Online LIVE

Sessions (1-30)

28 - 31 August 2022

Congress Time Zone :
Central European Summer Time (GMT+2)

Please click the below link to join the Online LIVE congress.

Congress joining link:

https://us06web.zoom.us/j/85717084452?pwd=Mm1tQzNBSlk0ZVBtWngxS2lENzZnQT09

Webinar ID: 857 1708 4452 | Passcode: 025978

Scientific Program

Online LIVE Sessions

Session numbers: 1 – 30

Day - 1: Sunday, 28 August 2022

Congress Time Zone : Central European Summer Time (GMT+2)

28 August 2022

07.45-08.00 **Opening of Congress (Online LIVE)**

08.00-10.00 **Online LIVE Session 01: Nanomaterials & Nanotechnology**

Session Chair(s): Kostya Ostrikov, Queensland University of Technology, Australia and **Emma Kendrick**, University of Birmingham, United Kingdom

07.50-08.20 **Keynote Lecture: Kostya (Ken) Ostrikov, *Plasma Nanoscience for Advanced Materials and Applications,*** Queensland University of Technology, Australia

08.20-08.40 **Advanced Materials Lecture: Emma Kendrick, *Materials for Sustainable Batteries,*** University of Birmingham, United Kingdom

08.40-09.00 **Advanced Materials Lecture: David Diaz Diaz, *Gel Networks as Nanoconfined Reaction Media,*** Universidad de La Laguna, Spain

09.00-09.20 **Advanced Materials Lecture: Shaibal Mukherjee, *Large-area 2D TMD-based Memristive Crossbar Array for Biomedical Image Computation,*** Indian Institute of Technology Indore, India

09.20-09.40 **Advanced Materials Lecture: Ka Hing Wong, *Selenium Nanoparticles Functionalized by Mushroom Polysaccharide-Protein Complex: A Novel Nano-Mineral for Managing Postmenopausal Osteoporosis,*** The Hong Kong Polytechnic University, Hong Kong

09.40-10.00 **Advanced Materials Lecture: Ritesh Shukla, *Role of Nanomaterials in Forensic Science: Current and Future Perspective,*** Ahmedabad University, India

28 August 2022

10.00-12.00

Online LIVE Session 02: Energy Materials

Session Chair(s): Laura Torrente, University of Cambridge, United Kingdom and **Chunzhong Li**, East China University of Science and Technology, China

10.00-10.20 **Advanced Materials Lecture: Laura Torrente, *Energy Materials for Storage of Renewable Energy in Ammonia,*** University of Cambridge, United Kingdom

10.20-10.40 **Advanced Materials Lecture: Chunzhong Li, *Novel Hierarchical Nanomaterials Fabricated by Micro-regional Confinement Reaction for Energy Conversion and Storage,*** East China University of Science and Technology, China

10.40-11.00 **Advanced Materials Lecture: Shisheng Lin, *Novel Semiconductor Devices Utilizing the Physical Process of Hot Carriers,*** Zhejiang University, China

11.00-11.20 **Advanced Materials Lecture: Chaolung Chiang, *Development of Green Energy Materials: Role of Synchrotron X-ray Spectroscopy,*** National Synchrotron Radiation Research Center, Taiwan

11.20-11.40 **Advanced Materials Lecture: Zhiyuan Zhu, *Three-dimensional Silicon PIN Detector and Triboelectronic Nanogenerator,*** Southwest University, China

11.40-12.00 **Advanced Materials Lecture: Pengcheng Jiao, *Mechanical Functional Metamaterials: Analysis and Applications,*** Zhejiang University, China

28 August 2022

12.00-14.00

Online LIVE Session 03: Structural & Engineering Materials

Session Chair(s): Frank Walther, TU Dortmund University, Germany and **Qingyuan Wang**, Chengdu University, China

12.00-12.20 **Advanced Materials Lecture: Frank Walther, *Fatigue Damage Tolerance Assessment of Materials and Structures by Enhanced Testing and Modelling Approaches,*** TU Dortmund University and Chair of Materials Test Engineering (WPT), Germany

12.20-12.40 **Advanced Materials Lecture: Qingyuan Wang, *In-situ Photomicroscope and Dissipative Investigation of Short Crack Propagation under Ultrasonic Fatigue Test,*** Chengdu University, China

12.40-13.00 **Advanced Materials Lecture: Xiaodong Huang, *Innovative Designs of Structural Materials and Metamaterials through Topology Optimization,*** Swinburne University of Technology, Australia

13.00-13.20 **Advanced Materials Lecture: Tingdong Xu, What Status of Metals is Expressed by the Tensile Testing Result at a Temperature and Strain Rate?** Central Iron and Steel Research Institute, Beijing, China

13.20-13.40 **Advanced Materials Lecture: Honggang Dong, *Solid-state Welding Process and Mechanism of Dissimilar Metallic Materials,*** School of Materials Science and Engineering, Dalian University of Technology, China

13.40-14.00 **Advanced Materials Lecture: Chao Xu, *Revealing the Role of Bimodal Grain Structure in the Strength-ductility Synergy of Wrought Mg-RE Alloy,*** Harbin Institute of Technology, China

28 August 2022

14.00-16.00

Online LIVE Session 04: Biomaterials & Biodevices

Session Chair(s): Sylvain Martel, Polytechnique Montreal, Canada and **Philippe Barthelemy**, University of Bordeaux, France

14.00-14.20 **Advanced Materials Lecture: Sylvain Martel, *Importance of Materials for the Synthesis of Bacterial Transporters for Cancer Therapy,*** Polytechnique Montreal, Canada

14.20-14.40 **Advanced Materials Lecture: Philippe Barthelemy, *Nucleic Acid Based Biomaterials from Supramolecular Systems to Therapeutic Applications,*** University of Bordeaux, France

14.40-15.00 **Advanced Materials Lecture: Jochen Salber, *Human Tissue Models for Advanced Bioevaluation of Antimicrobial Biomaterials-based Technologies,*** Ruhr-University Bochum, Germany

15.00-15.20 **Advanced Materials Lecture: Jui-Yang Lai, *Bioactive Material Design for Glaucoma Pharmacotherapy,*** Graduate Institute of Biomedical Engineering, Chang Gung University, Taiwan

15.20-15.40 **Advanced Materials Lecture: Mohammad-Ali Shahbazi, *Bridging Photoactive Nanomaterials to Multifunctional Injectable Hydrogels for Combination Therapies,*** Department of Biomedical Engineering, University Medical Center Groningen, University of Groningen, The Netherlands, Netherlands

15.40-16.00 **Advanced Materials Lecture: Anastasia Koroleva, *Emerging Bio- and Nanotechnologies towards 3D Brain Models,*** Leibniz University of Hannover, Germany

28 August 2022

16.00-18.00

Online LIVE Session 05: Polymer Science & Technology

Session Chair(s): Paschalis Alexandridis, The State University of New York (SUNY), USA and **Luciana Tavares**, University of Southern Denmark, Denmark

16.00-16.20 **Advanced Materials Lecture: Paschalis Alexandridis, *Plastics Recycling: Challenges and Opportunities,*** University at Buffalo, The State University of New York (SUNY), USA

16.20-16.40 **Advanced Materials Lecture: Yihu Song, *Viscoelastic Behaviours of Rubber Vulcanizates,*** Zhejiang University, China

16.40-17.00 **Invited Lecture: Luciana Tavares, *New Materials for Next Generation High Performance Capacitors,*** University of Southern Denmark, Denmark

17.00-17.20 **Advanced Materials Lecture: Ahmed Mohamed, *Challenges and Approaches in Advanced Engineering Industries,*** Aswan University, Egypt

17.20-17.40 **Advanced Materials Lecture: Virendra Gupta, *High Performance Polymers: Synthesis & Product Applications,*** Reliance Industries Limited, India

17.40-18.00 Session Discussion

28 August 2022

18.00-20.00

Online LIVE Session 06: Functional Materials

Session Chair(s): Gian Montanari, Florida State University, USA and **Roman Puzniak**, Institute of Physics of the Polish Academy of Sciences, Poland

18.00-18.20 **Advanced Materials Lecture: Gian Montanari, *An Innovative Approach to the Design of Reliable Insulation Systems,*** Florida State University, USA

18.20-18.40 **Advanced Materials Lecture: Roman Puzniak, *Correlation between Superconducting State Properties and Crystallinity Degradation Tailored by Chemical Substitutions, Applied Pressure, and Hydrogenation in Fe-Te-Se Single Crystals,*** Institute of Physics of the Polish Academy of Sciences, Poland

18.40-19.00 **Advanced Materials Lecture: Akanksha Menon, *Thermally Responsive Materials for Clean Energy and Water,*** Georgia Institute of Technology, USA

19.00-19.20 **Advanced Materials Lecture: Sara Rojas, *A Cooper Glufosinate Based Metal-Organic Framework as Novel Multifunctional Agrochemical,*** University of Granada, Spain

19.20-19.40 **Advanced Materials Lecture: Kai Yu, *Enhanced Energy Dissipation of Liquid Crystal Elastomers and their 3D Printed Material Structures,*** University of Colorado Denver, USA

19.40-20.00 Session Discussion

28 August 2022

20.00-22.00

Online LIVE Session 07: Composite & Ceramic Materials

Session Chair(s): Jorge Chavarin, Universidad Autónoma del Estado de Morelos-CIICAp, Mexico and **Abuzar Kabir**, Florida International University, USA

20.00-20.20 **Advanced Materials Lecture: Jorge Chavarin, *Nylon / Porphyrin / Graphene Oxide Electro-Spun Composite Coating on Stainless Steel for Electrochemical Applications,*** Universidad Autónoma del Estado de Morelos-CIICAp, Mexico

20.20-20.40 **Advanced Materials Lecture: Abuzar Kabir, *High-Performance Sol-gel Composite Functional Materials with Encapsulated Carbonaceous Particles for Efficient Removal of Environmental Pollutants,*** Florida International University, USA

20.40-21.00 **Advanced Materials Lecture: Ghazi Al-Khateeb, *Characterization and Modeling of Asphalt Binders and Mixtures,*** University of Sharjah, UAE

21.00-21.20 **Advanced Materials Lecture: Martin Dornheim, *Reactive Hydride Composites a New Class of Materials for Hydrogen Storage,*** Helmholtz-Zentrum Hereon, Germany

21.20-21.40 **Advanced Materials Lecture: Yao Zhou, *Polypropylene-based Insulation Material for Recyclable HVDC Cables,*** The Pennsylvania State University, USA

21.20-21.40 **Advanced Materials Lecture: Yi-Lung Mo, *Metamaterial-Based Vibration Isolation and Acoustic Mitigation of Future Civil Infrastructures,*** University of Houston, USA

21.40-22.00 **Advanced Materials Lecture: Yao Zhou, *Polypropylene-based Insulation Material for Recyclable HVDC Cables,*** The Pennsylvania State University, USA

Day - 2: Monday, 29 August 2022
Stockholm, Sweden, Central European Summer Time (GMT +2)

29 August 2022

08.00-10.00 **Online LIVE Session 08: Thin Films, Materials Surface & Interfaces**

Session Chair(s): Melanie MacGregor, Finders University, Australia and **Beng Kang Tay**, Nanyang Technological University, Singapore

08.00-08.20 **Advanced Materials Lecture: Melanie MacGregor, *Nanofluid Adsorption to Nanoengineered Thin Films for Energy and Biotechnology Applications,*** Finders University, Australia

08.20-08.40 **Advanced Materials Lecture: Beng Kang Tay, *Filtered Cathodic Vacuum Arc: Evolution beyond Coating Materials,*** Nanyang Technological University, Singapore

08.40-09.00 **Advanced Materials Lecture: Jayati Sarkar, *Dewetting Assisted Origami Formation of Graphene Nano-Particles over Biocompatible Polymer,*** Indian Institute of Technology, Delhi, India

09.00-09.20 **Advanced Materials Lecture: Xiaoxuan Liu, *Aggregation-induced emission (AIE) of Hyperbranched Polyester Polyols,*** Guangdong Univerisiry of Technology, China

09.20-09.40 **Advanced Materials Lecture: Oana Cojocaru-Miradin, *Fingerprints for Superior Properties of Internal Interfaces in CIGS Thin-Film Solar Cell,*** RWTH Aachen University, Germany

09.40-10.00 Session Discussion

29 August 2022

10.00-12.00 **Online LIVE Session 09: Functional Materials**

Session Chair(s): Haruo Sugiyama, Osaka University, Japan and **Ken Leung,** Hong Kong Baptist University, Hong Kong

10.00-10.20 **Advanced Materials Lecture: Haruo Sugiyama, *WT1 Cancer Vaccine for the Treatment and Prevention,*** Osaka University, Japan

10.20-10.40 **Advanced Materials Lecture: Ken Leung, *Challenges on the Design of Next-generation Drug Nano-carriers for Precise Delivery,*** Hong Kong Baptist University, Hong Kong

10.40-11.00 **Advanced Materials Lecture: Kah-Yoong Chan, *Electrochromic Properties of WO3 Using Different Transparent Conducting Oxide Electrodes,*** Multimedia University, Malaysia

11.00-11.20 **Advanced Materials Lecture: Md. Arifur Rahim, *Low Temperature Liquid Platinum Catalyst,*** University of New South Wales, Australia

11.20-11.30 Session Discussion

29 August 2022

11.30-13.15

Online LIVE Session 10: Emerging Technologies for Energy Applications

Session Chair(s): Shin Aoki, Tokyo University of Science, Japan and **Cong Chen**, Dalian University of Technology, China

11.30-12.00 **Keynote Lecture: Shin Aoki, *Development of New Cyclometalated Iridium(III) Complexes for Induction of Programmed Cell Death, Detection of Dead Cells, and Mechanistic Study,*** Tokyo University of Science, Japan

12.00-12.20 **Advanced Materials Lecture: Yebing Tian, *Intelligent Monitoring and Big-data Driven Decision-making System for Energy Efficiency Grinding,*** Shandong University of Technology, China

12.20-12.40 **Advanced Materials Lecture: Cong Chen, *Molecular Insights into Gas Hydrate Formation in the Presence of Graphene Oxide Solid Surfaces,*** Dalian University of Technology, China

12.40-13.00 **Advanced Materials Lecture: Bin Hu, *Unconventional Energy-Saving Windows via Thermal Management,*** Huazhong University of Science and Technology, China

13.00-13.20 **Invited Lecture: Yasuyoshi Kurokawa, *Application of Bayesian Optimization for High-efficiency Silicon Quantum Dot Solar Cells,*** Nagoya University, Japan

29 August 2022

13.15-16.00

Online LIVE Session 11: Computational Materials & Graphene Innovations

Session Chair(s): Shiping Wen, University of Technology Sydney, Australia and **Weiqiao Deng**, Shandong University, China

13.20-13.40 **Advanced Materials Lecture: Weiqiao Deng, *Digital-intellectual Design for Desired Materials,*** Shandong University, China

13.40-14.00 **Advanced Materials Lecture: Shiping Wen, *Memristor-based Neuromorphic Computing,*** University of Technology Sydney, Australia

14.00-14.20 **Advanced Materials Lecture: Tigran Sedrakyan, *Quantum Chaos, Superconductivity, and Information Scrambling in Disordered Magic-Angle Twisted Bilayer Graphene,*** University of Massachusetts, Amherst, USA

14.20-14.40 **Advanced Materials Lecture: Fei Xue, *Two-dimensional Ferroelectric Materials for Novel Computing Paradigms,*** HIC, Zhejiang Univeristy, China

14.40-15.00 **Advanced Materials Lecture: Yu Lei, *From Energy Conversion to Biosensors: Defect Engineering in 2D Materials for Multi-Functionalities,*** Tsinghua University Shenzhen International Graduate School, China

15.00-15.15 **Oral: Budoor Al Umairi, *On-step of Preparation Graphene Nanomaterials with Various Sizes and Functionalisation through Ultrasonication-assisted Liquid-phase Exfoliation,*** University of Manchester, United Kingdom

15.15-15.30 Session Discussion

29 August 2022

15.30-17.00 **Online LIVE Session 12: Biological & Biocompatible Materials**

Session Chair(s): Mei Wu, Harvard Medical School, USA and **Phei Er Saw,** Sun Yat-sen University, China

15.30-15.50 **Advanced Materials Lecture: Phei Er Saw, *Bioactive Lipid-nanoparticle with Inherent Self-therapeutic and Anti-angiogenic Properties for Malignant Cancer Therapy,*** Sun Yat-sen University, China

15.50-16.10 **Advanced Materials Lecture: Mei Wu, *Engineering Biomimetic Nanoparticles to Bypass the Airway Mucosal Barrier and Safely Deliver Small Molecules into Lung Epithelial Cells,*** Harvard Medical School, USA

16.10-16.30 **Advanced Materials Lecture: Srinivas Sridhar, *Nanomedicines for Precision Drug Delivery and Imaging,*** Northeastern University and Harvard Medical School, USA

16.30-16.50 **Advanced Materials Lecture: Mudasir Shagoo, *Starch based Nanomaterials and Delivery Systems for Encapsulation of Bioactive Compounds,*** National Institute of Technology, India

16.50-17.00 Session Discussion

29 August 2022

17.00-18.15 **Online LIVE Session 13: Structural & Engineering Materials**

Session Chair(s): Muhammed Basheer, University of Leeds, United Kingdom and **Peter Olubambi**, University of Johannesburg, South Africa

17.00-17.20 **Advanced Materials Lecture: Muhammed Basheer, *Characterisation of Microstructure Development of Alkali-activated Slag Cement during Early Hydration through Electrical Responses,*** University of Leeds, United Kingdom

17.20-17.40 **Advanced Materials Lecture: Peter Olubambi, *Powder based Technique for CNT Toughening of Nickel Aluminide,*** University of Johannesburg, South Africa

17.40-18.00 **Advanced Materials Lecture: Mohammad AlHamaydeh, *Flexural Behavior of Green Concrete Circular Beams with Double-Layers of GFRP Reinforcement,*** American University of Sharjah, UAE

18.00-18.20 **Advanced Materials Lecture: Helene Lombois-Burger, *Advanced Concrete Materials for 3D Printing, to Boost Construction Efficiency,*** HOLCIM Innovation Center, France

29 August 2022

18.15-20.30 **Online LIVE Session 14: Nanomaterials & Nanotechnology**

Session Chair(s): Thomas Wong, Illinois Institute of Technology, USA and **Wen Meng**, Louisiana State University, USA

18.20-18.40 **Advanced Materials Lecture: Dongling Ma, *Designing Nanohybrids for Energy, Environmental and Biomedical Applications,*** Institut National de la Recherche Scientifique (INRS), Canada

18.40-19.00 **Advanced Materials Lecture: Thomas Wong, *Semiconductor Nanoparticles and their Derivatives for Terahertz Applications,*** Illinois Institute of Technology, USA

19.00-19.20 **Advanced Materials Lecture: Wen Meng, *Probing Mechanical Size Effects and Anomalies in Small Scale Plastic Deformation,*** Louisiana State University, USA

19.20-19.40 **Advanced Materials Lecture: Khaled Parvez, *Water based Inkjet Printable Inks made by Two Dimensional Materials,*** University of Manchester, United Kingdom

19.40-20.00 **Advanced Materials Lecture: Mohamed Rafiq Siddiqui, *Plant Extract Based Green Synthesis of Nanomaterials and Their Catalytic Applications: A Valuable Toolbox in Nanocatalysis,*** King Saud University, Saudi Arabia

20.00-20.20 **Advanced Materials Lecture: Devidas Patil, *Nano-Engineering of Bulk and Nanomaterials for Smart Sensing of Gas, Light and Food Freshness,*** Bulk and Nanomaterials Research Lab, R. L. College, Parola, India

29 August 2022

20.15-22.00

Online LIVE Session 15: Materials Horizon & Technology

Session Chair(s): Antonio Riul Jr, University of Campinas, UNICAMP, Brazil and **Virender Sharma**, Texas A&M University, USA

20.20-20.40 **Advanced Materials Lecture: Virender Sharma, *High-Valent Iron Intermediates in Enhanced Oxidation of Pollutants by Ferrate,*** Texas A&M University, USA

20.40-21.00 **Advanced Materials Lecture: Antonio Riul Jr, *Integrating Technologies and Functionalities,*** University of Campinas, UNICAMP, Brazil

21.00-21.20 **Advanced Materials Lecture: Prakashbhai Bhoi, *The Role of Biochar and Waste Plastics in Reducing the Climate Change,*** Georgia Southern University, USA

21.20-21.40 **Advanced Materials Lecture: Zhouyue Lei, *Bio-inspired Soft Ionic Materials,*** Postdoc Fellow, USA

21.40-22.00 **Advanced Materials Lecture: Renfei Feng, *Advanced materials Characterization using Synchrotron: Towards In-situ and Operando,*** Canadian Light Source, Canada

30 August 2022

Day - 3: Tuesday, 30 August 2022

Stockholm, Sweden, Central European Summer Time (GMT +2)

07.00-10.00

Online LIVE Session 16: Electronic, Magnetic & Optical Materials

Session Chair(s): Changqing Jin, Chinese Academy of Sciences, China, **Xinping Zhang,** Institute of Information Photonics Technology, China and **Cheng-Fu Yang,** National University of Kaohsiung, Taiwan

07.00-07.20 **Advanced Materials Lecture: Xinping Zhang, *Ultrafast Plasmonic Optical Modulation,*** Institute of Information Photonics Technology, Beijing, China

07.20-07.40 **Advanced Materials Lecture: Changqing Jin, *Effects of Pressure on Emergent Quantum Materials, New Emergent Materials at Extreme Conditions by Design,*** Chinese Academy of Sciences, China

07.40-08.00 **Advanced Materials Lecture: Yan Zhou, *Magnetic Skyrmion Hall Effects,*** The Chinese University of Hong Kong, China

08.00-08.20 **Advanced Materials Lecture: Cheng-Fu Yang, *A Novel Method to Synthesis ZnO Nanoflower Arrays with High Band Edge Luminescence Properties,*** National University of Kaohsiung, Taiwan

08.20-08.40 **Advanced Materials Lecture: Kai Leng, *Tunable Optoelectronic Properties and Device Applications in Molecularly Thin Two-Dimensional Hybrid Perovskites,*** The Hong Kong Polytechnic University, China

08.40-09.00 **Advanced Materials Lecture: Hakaru Mizoguchi, *High Power LPP-EUV Source for Semiconductor HVM; Lithography and other Application,*** GIGAPHOTON, Japan

09.00-09.20 **Advanced Materials Lecture: Mingqiang Li, *The Nafion /PTFE Membrane for Alkaline Quinone Flow Battery,*** Dalian University of Technology, China

09.20-09.40 **Advanced Materials Lecture: Chun-Feng Lai, *Ultra-stable Quantum Dot White LEDs for Wide Color Gamut Backlit Display,*** Feng Chia University, Taiwan

09.40-09.55 **Oral: Hanna Bukovska, *Synthesis of Graphene Based Materials for Energy Storage: Optimization of Exfoliation Method,*** Center for Energy, Environmental and Technological Research (CIEMAT), Spain

30 August 2022

10.00-12.00

Online LIVE Session 17: Nanoglasses Symposium

Symposium Chair: Arnaud Caron, School of Energy, KOREATECH, Republic of Korea

10.00-10.20 **Keynote Lecture: Arnaud Caron, *Wear and Corrosion Resistance of Metallic Nano Glass Thin Films, School of Energy,*** KOREATECH, Republic of Korea

10.20-10.40 **Advanced Materials Lecture: Jinyang Xu, *Surface Texturing of Dental 3Y-TZP Ceramics,*** Shanghai Jiao Tong University, China

10.40-10.55 **Oral: Sangjun Kang, *Homogeneous Plastic Deformation of Pd-Si Nanoglass under Tribological Deformation,*** Karlsruhe Institute of Technology, Germany

10.55-11.10 **Oral: Anshuman Mishra, *Nanoglass Biocompatibility and Application,*** Institute of Advanced Materials, IAAM, Sweden

11.10-12.00 **Competence and Capacity Building for Innovation Leadership:** Discussion and Road Map for Translational Research and Grant Application

30 August 2022

12.00-14.00

Online LIVE Session 18: Battery Materials & Nuclear Energy

Session Chair(s): Bunshi Fugetsu, The University of Tokyo, Japan and **Hwan Kyu Kim,** Korea University, Republic of Korea

12.00-12.20 **Advanced Materials Lecture: Bunshi Fugetsu,** ***Manganese-oxide/carbon-Nanotube Hybridized Nanostructures as Cathodes of High-performance Pseudo-supercapacitors,*** The University of Tokyo, Japan

12.20-12.40 **Advanced Materials Lecture: Hwan Kyu Kim,** ***PAN-based Block Copolymers with Well-defined Structures for Next Generation Energy Conversion and Storage Devices,*** Korea University, Republic of Korea

12.40-13.00 **Invited Lecture: Chol-Jun Yu,** ***Two-dimensional Hybrid of SnS2 with Graphene and Graphene Oxide for Improving Sodium Storage, Faculty of Materials Science,*** Kim Il Sung University, Democratic People's Republic of Korea

13.00-13.20 **Advanced Materials Lecture: Longjun Dong,** ***Early Identifying for Abnormal Regions in Rock Material using Traveltime Tomography,*** Central South University, China

13.20-13.40 **Invited Lecture: Vladimir Vysotskii,** ***Generation of Undamped High-Frequency Temperature Waves and its Application for Controlled Nuclear Fusion in Distant TiD Targets,*** Taras Shevchenko National University of Kyiv, Ukraine

13.40-14.00 **Advanced Materials Lecture: Hsing-Yu Tuan,** ***Synthesis and Optimization of Potassium-Ion Battery Materials,*** National Tsing Hua University, Taiwan

30 August 2022

14.00-15.30

Online LIVE Session 19: Biosensors, Bioelectronics & Biodevices

Session Chair(s): Xiaoyan Zhang, Capital Medical University, China and **Jingwei Xie,** University of Nebraska Medical Center, USA

14.00-14.20 **Advanced Materials Lecture: Xiaoyan Zhang,** ***Dielectric-Modulated Biosensing with Ultrahigh-Frequency Operated Graphene Field-Effect Transistors,*** Capital Medical University, China

14.20-14.40 **Advanced Materials Lecture: Jingwei Xie,** ***New Forms of Electrospun Nanofiber Materials for Biomedical Applications,*** University of Nebraska Medical Center, USA

14.40-15.00 **Advanced Materials Lecture: Yang Li,** ***Perception-to-cognition Tactile Sensing based on Artificial Intelligence-Motivated Human Full-Skin Bionic Electronic Skin,*** University of Jinan, China

15.00-15.20 **Advanced Materials Lecture: Cheng Tang Pan,** ***Fabrication of Continuous Piezoelectric Silks as Sensors by Near Field Electro-Spinning Process,*** National Sun Yat-sen University, Taiwan

30 August 2022

15.15-16.15 **Online LIVE Session 20: Metamaterials**

Session Chair(s): Michel Meunier, *Polytechnique Montreal,* Canada and **Kavan Hazeli**, University of Arizona, USA

15.20-15.40 **Advanced Materials Lecture: Michel Meunier, *Synthesis of Plasmonics Nanoparticles and their Applications in Nanomedicine, Polytechnique Montreal,*** Canada

15.40-16.00 **Advanced Materials Lecture: Mohammad Rashed Iqbal Faruque, *Absorption Reduction of Radiation Exposure from Wireless Device by Utilising Compact Metamaterial Design,*** Universiti Kebangsaan Malaysia, Malaysia

16.00-16.20 **Advanced Materials Lecture: Kavan Hazeli, *Synchronous Involvement of Topology and Microstructure to Design Additively Manufactured Lattice Structure,*** University of Arizona, USA

30 August 2022

16.15-18.00 **Online LIVE Session 21: Nanomaterials & Nanotechnology**

Session Chair(s): Srinivas Sridhar, Northeastern University & Harvard Medical School, USA and **Gregory Light**, Providence College, USA

16.20-16.40 **Advanced Materials Lecture: Martin Schmal, *Synthesis of Fe-Doped CeO2 and Reduced Graphene Oxide as Supports for Nano Cu, Pd and Au - Application in the NO Selective Catalytic Reduction by CO,*** Federal University of Rio de Janeiro, Brazil

16.40-17.00 **Advanced Materials Lecture: Gregory Light, *Einstein Mass-Shell Equation, Antimatter, and Electron Nutation - A Bridge from Quantum Fields to Material Sciences,*** Providence College, USA

17.00-17.20 **Advanced Materials Lecture: Jiyu Fang, *Artificial Light-Harvesting Vesicles and Tubes for Biosensing Applications,*** University of Central Florida, USA

17.20-17.35 **Oral: Yasmeen Khoja, *Novel n-MoS2 QDs / p-GaN photodetector deep UV responsivity,*** Princess Nourah bint Abdulrahman University, Saudi Arabia

17.35-17.50 **Oral: Parvathy Bhaskar, *Synthesis and Characterization of Rare Earth Doped Zinc Oxide Nano Structures,*** JSS Science & Technology University, India

17.50-18.00 Session Discussion

30 August 2022

18.00-19.15 **Online LIVE Session 22: Carbon Materials & Technology**

Session Chair(s): Mark Schulz, University of Cincinnati, USA and **Frank Cheng,** University of Calgary, Canada

18.00-18.30 **Keynote Lecture: Frank Cheng, *Graphene-based Electrochemical Biosensor for High-Performance Bacterial Detection in Aqueous Environments,*** University of Calgary, Canada

18.30-19.00 **Invited Lecture: Mark Schulz, *Carbon Nanotube Active Textiles Development,*** University of Cincinnati, USA

19.00-19.15 **Oral: Megha Chitranshi, *Carbon Nanotube Sheet for Low-Voltage Flexible Heating Applications,*** University of Cincinnati, USA

Day - 4: Wednesday, 31 August 2022
Stockholm, Sweden, Central European Summer Time (GMT +2)

31 August 2022

07.00-10.00 **Online LIVE Session 23: Environmental & Green Materials**

Session Chair(s): Iseult Lynch, University of Birmingham, United Kingdom, **Xiaojun Chen**, Nanjing Tech University, China and **Haruo Sugiyama,** Osaka University, Japan

07.00-07.20 **Advanced Materials Lecture: Xiaojun Chen, *Development of Multiple Antimicrobial Therapeutic Pathways with Nanomaterials,*** Nanjing Tech University, China

07.20-07.40 **Advanced Materials Lecture: Jin Anjun, *Model and Simulation of the Power Utility Matrix for Integrated Distributed Energy Resources,*** Ningbo University, China

07.40-08.00 **Advanced Materials Lecture: Junzhong Wang, *Graphene Materials for Electrocatalytic Reduction of Oxygen or Carbon Dioxide,*** Anhui University, China

08.00-08.20 **Advanced Materials Lecture: Iseult Lynch, *Exploring the Bio-Nano Interface Drivers and Impacts of Biomolecule-Materials Interactions,*** University of Birmingham, United Kingdom

08.20-08.40 **Advanced Materials Lecture: Haruo Sugiyama, *WT1 Cancer Vaccine for the Treatment and Prevention,*** Osaka University, Japan

08.40-09.00 **Advanced Materials Lecture: Osama Darwesh, *Application of Eco-friendly Zn/Chitosan Nano-composite for Eradication of the Dairy industry Biofilms,*** National Research Centre, Egypt

09.00-09.20 **Advanced Materials Lecture: Prabhakar Sharma, *Challenges in the Removal of Hexavalent Chromium via Biochar-based Adsorbents,*** Nalanda University, India

09.20-09.35 **Oral: Ait Hamoudi Souhila, *Removal of Organic Pollutants From an Aqueous Medium by A Hybrid Process (Adsorption - Photodegradation),*** Centre de Recherche Scientifique et Technique en Analyse Physico-chimique (CRAPC), Algeria

09.35-09.50 **Oral: Rahat Javaid, *Catalyst for efficient synthesis of CO2-free green ammonia,*** National Institute of Advanced Industrial Science and Technology (AIST), Japan

31 August 2022

10.00-12.00 **Online LIVE Session 24: Water Technology & Climate Neutrality**

Session Chair(s): Shaohua Shen, Xi'an Jiaotong University, China and **Gehad Mohamed,** Cairo University, Egypt

10.00-10.20 **Invited Lecture: Fang-Chung Chen, *Asymmetrical Single Crystals Containing Tilted Ruddlesden–Popper Phases for Efficient Perovskite Solar Cells,*** National Yang Ming Chiao Tung University, Hsinchu, Taiwan

10.20-10.40 **Advanced Materials Lecture: Shailendra Shukla, *Water Purification using Q Dot Glass Evaporator,*** Indian Institute of Technology (IIT), Banaras Hindu University, India

10.40-11.00 **Advanced Materials Lecture: Shaohua Shen, *Polymeric Carbon Nitride for Photocatalytic Overall Water Splitting,*** Xi'an Jiaotong University, China

11.00-11.20 **Advanced Materials Lecture: Yingchao Dong, *Ceramic-based Nanoporous Membrane Materials for Sustainable Water Treatment,*** Dalian University of Technology, China

11.20-11.40 **Advanced Materials Lecture: Gehad Mohamed, *Antifouling PES/Cu@Fe3O4 Mixed Matrix Membranes: Quantitative Structure Activity Relationship (QSAR) Modeling and Wastewater Treatment Potentiality,*** Cairo University, Egypt

11.40-12.00 **Advanced Materials Lecture: Keng Yuen Foo, *Facile Preparation of Green Multifunctional Advanced Materials for the Practical Remediation of Environmental Contaminants: Prolific Roles on the Water Purification, Antibacterial and Antifungal Applications,*** REDAC, Universiti Sains Malaysia (USM), Malaysia

31 August 2022

12.00-14.00

Online LIVE Session 25: Structural & Engineering Materials

Session Chair(s): Zemin Wang, Huazhong University of Science and Technology, China and **Peng Feng**, Tsinghua University, China

12.00-12.20 **Advanced Materials Lecture: Zemin Wang, *Microstructural Evolution during Laser Additive Manufacturing and Tailoring of Mechanical Properties for Applications,*** Huazhong University of Science and Technology, China

12.20-12.40 **Advanced Materials Lecture: Jinghuai Zhang, *Development of High Performance Mg Alloys Via Microstructure Control,*** Harbin Engineering University, China

12.40-13.00 **Advanced Materials Lecture: Peng Feng, *Use of FRP Composite Materials for Realizing Lower-Carbon and More-Resilient Civil Infrastructures,*** Tsinghua University, China

13.00-13.20 **Advanced Materials Lecture: Zengbao Jiao, *Ultrahigh-strength and Ductile Alloys with Coherent Nano-Lamellar Architectures,*** The Hong Kong Polytechnic University, Hong Kong

13.20-13.40 **Advanced Materials Lecture: Shuai Li, *Superelastic Shape Memory Alloy-Based Self-Centering Bridge Structures for Seismic Hazard Mitigation,*** Southeast University, China

13.40-14.00 Session Discussion

31 August 2022

14.00-16.00

Online LIVE Session 26: Nanomaterials & Nanotechnology

Session Chair(s): Agnieszka Jastrzebska, Warsaw University of Technology, Poland and **Yonggang Yao**, Huazhong University of Science and Technology, China

14.00-14.20 **Advanced Materials Lecture: Agnieszka Jastrzebska, *2D MBenes: A Novel Member in the Flatland,*** Warsaw University of Technology, Poland

14.20-14.40 **Advanced Materials Lecture: Yonggang Yao, *High Entropy Alloy Catalysts,*** Huazhong University of Science and Technology, China

14.40-15.00 **Advanced Materials Lecture: Ming Xu, *ZnO based Nanomaterials Synthesized by a Modified Polymer-Network Gel Method: Exploring Visible Light-Driven Photocatalytic Degradation and Gas Sensing,*** Southwest Minzu University, China

15.00-15.20 **Invited Lecture: Jing Zhang, *Immunostimulant Hydrogel for the Inhibition of Malignant Glioma Relapse Post-Resection,*** Shandong University, China

15.20-15.40 **Invited Lecture: Panagiotis Grammatikopoulos, *Nanoparticle Design by Gas Phase Synthesis,*** Okinawa Institute of Science and Technology Graduate University, Japan

15.40-15.55 **Oral: Yuting Yang, *Real-time SEM Image Denoising Based on Kalman Filtering,*** ShanghaiTech University, China

31 August 2022

16.00-17.15

Online LIVE Session 27: Engineering Materials & Nanotechnology

Session Chair(s): Tao Yang, City University of Hong Kong, China and **Yongdong Jin**, Chinese Academy of Sciences, China

16.00-16.20 **Advanced Materials Lecture: Tao Yang, *Chemically Complex Intermetallic Alloys: A New Frontier for Materials Innovation,*** City University of Hong Kong, China

16.20-16.40 **Invited Lecture: Yongdong Jin, *2D plasmonic AuNP-Nanomembrane: Unusual Electron Transport and Versatile Nanoelectronics & Biological Applications,*** Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China

16.40-17.00 **Advanced Materials Lecture: Jayanta Kumar Patra, *Biosynthesis of Sericin Mediated Gold Nanoparticles and its Antioxidant, Wound Healing and Antibacterial Potential,*** Dongguk University, Republic of Korea

17.00-17.20 **Advanced Materials Lecture: Kai Liu, *Bamboo-inspired Energy Absorber and its Application in Rail Vehicles,*** Southwest Jiaotong University, China

31 August 2022

17.15-18.30

Online LIVE Session 28: Polysaccharide & Nano Fibers

Session Chair(s): Shuji Ogata, Nagoya Institute of Technology, Japan and **Huiyang Gou**, Center for High Pressure Science and Technology Advanced Research, China

17.20-17.40 **Invited Lecture: Shuji Ogata, *How Protonation and Deprotonation Affect Weakening of Epoxy Resin and Silane Coupling: First-Principles Simulation Based on Free Energy Calculation,*** Nagoya Intitute of Technology, Japan

17.40-18.00 **Advanced Materials Lecture: Huiyang Gou, *Materials Synthesis under Pressure,*** Center for High Pressure Science and Technology Advanced Research, China

18.00-18.15 **Oral: Christianah Dare, *Enhancing Role of Fermentation on the Antioxidant and Anti-inflammatory Activities of Seed Coat Polysaccharides of Sugar Apple (Annona squamosa L.),*** Osun State University, Nigeria

18.15-18.30 **Oral: Tauseef Ahmad, Fucoidan: *A Potent Seaweed-derived Polysaccharide with Immunomodulatory and Anti-Inflammatory Properties,*** University of Tasmania, Australia

31 August 2022

18.30-20.00 **Online LIVE Session 29: Energy Materials & Technology**

Session Chair(s): Eva Unger, Helmholtz Zentrum Berlin, Germany and **Erik Kjeang**, Simon Fraser University, Canada

18.30-18.50 **Advanced Materials Lecture: Eva Unger, *Accelerating PV Materials Discovery & Deployment,*** Helmholtz Zentrum Berlin, Germany

18.50-19.10 **Advanced Materials Lecture: Erik Kjeang, *Using 4D X-ray Imaging to Develop Durable Materials for Fuel Cells,*** Simon Fraser University, Canada

19.10-19.30 **Advanced Materials Lecture: Zainuriah Hassan, *GaN Technology for Energy Efficient Lighting and Photovoltaic Applications,*** Universiti Sains Malaysia, Malaysia

19.30-19.50 **Advanced Materials Lecture: *Angela Malara, Adaptable Electrospun Fibres as Sustainable Energy Materials,*** Mediterranea University of Reggio Calabria, Italy

19.50-20.05 **Oral: Madeeha Tabassum, *Tuning the Optical Properties of MAPbBr3 Perovskite Nanocrystals Via Alkali Metal Ions Doping,*** Queen Mary university of London, United Kingdom

20.05-20.10 Session Discussion

31 August 2022

20.00-21.30 **Online LIVE Session 30: Computational Materials & Modelling**

Session Chair(s): Gian-Marco Rignanese, Université catholique de Louvain, UCLouvain, Belgium and **Valeriy Buryachenko,** Micromechanics and Composites LLC, USA

20.10-20.30 **Advanced Materials Lecture: Gian-Marco Rignanese, *Combining the Power of High-Throughput ab initio Calculations and Machine Learning towards Materials Informatics,*** Université catholique de Louvain, UCLouvain, Belgium

20.30-20.50 **Advanced Materials Lecture: Souraya Goumri-Said, *Efficient Search for Materials Design: Best Practices for Materials Scientists with Density Functional Theory, Multiscale Modelling and Machine Learning Approaches,*** Alfaisal University, Saudi Arabia

20.50-21.10 **Advanced Materials Lecture: Van Tuan Dinh, *Six-body and Eight-body Exciton States in Monolayer WSe2,*** University of Rochester, USA

21.10-21.30 **Advanced Materials Lecture: Valeriy Buryachenko, *Multiscale and Multiphysics Modelling of Advanced Heterogeneous Materials,*** Micromechanics and Composites LLC, USA

21.30-22.00 **Closing Ceremony (Online LIVE)**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