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Padova, 14 giugno 2017

MATERIALI A CONDUZIONE IONICA, IL FUTURO DELLA TECNOLOGIA

Dai nasi elettronici ai muscoli artificiali

I migliori scienziati a Padova per lo studio di nuovi materiali e nuove applicazioni

Si riuniscono a Padova i maggiori scienziati mondiali che si occupano di materiali a conduzione ionica che giocano un ruolo fondamentale nella moderna scienza e nello sviluppo della tecnologia più avanzata e sofisticata: batterie, celle fotovoltaiche, sensori, trasduttori elettromeccanici e apparecchi elettronici.

La sfida è quella di far dialogare su questi materiali i più importanti studiosi a livello internazionale per realizzare dispositivi dotati di prestazioni più elevate rispetto a quelle di oggi e realizzare nuovi materiali a conduzione ionica.

Scienziati da tutto il mondo e oltre 1400 partecipanti si incontreranno a Padova dal 18 al 23 giugno 2017 per la **21st International Conference on Solid State Ionics –SSI-21**, che sancisce il ruolo di leadership padovano in uno dei settori di sviluppo più importanti della ricerca e della tecnologia.

La **Conference** sarà dettagliatamente illustrata nel corso di una

CONFERENZA STAMPA

Venerdì 16 giugno 2017 – ore 11

Sala della Nave di Palazzo del Bo – Padova

Interverranno:

Massimo **Guglielmi**, Direttore Dip. Ingegneria Industriale

Michele **Maggini**, Direttore Dip. Scienze Chimiche

Vito **di Noto**, Dipartimento di Ingegneria Industriale Università di Padova, membro comitato organizzatore *Conference*

Andrea **Olivi**, Presidente Fiera di Padova

Flavio **Rodeghiero**, Presidente di Padova Convention and Visitors Bureau

Scientific Topics

SSI-21 is meant to provide an opportunity to discuss all of the areas of Solid State Ionics. For the sake of classification the Symposia, which cover both the fundamental and the applied aspects of Solid State Ionics, are grouped into a few Macro-Areas depending on the practical application of the results.

Nevertheless, all those contributions to SSI-21 that do not find home in any of the Symposia are also welcome and appreciated. If there is any difficulty in hosting your contribution in one of the suggested Symposia/Macro-Areas, please contact directly the Conference Chairmen at ssi21@di.unipd.it to receive advice on the best accommodation for your contribution.

Macro-Area 1: Ionics in Energy and Environment

These symposia will be focused on the research on solid-state ionic materials (e.g., SEs - solid electrolytes; MIECs - mixed-ionic electronic conductors and electrodes) for energy conversion and storage systems and performance of the corresponding devices, such as fuel cells and electrolyzers (operating both at low and at high temperatures), redox flow batteries, primary and secondary batteries, supercapacitors and ultracapacitors, photovoltaic devices, apparatuses for thermochemical energy storage and water/CO₂ splitting. Research aimed at methods of characterization of materials, devices and processes as well as at the development of sensors will also be included in this macro-area.

Macro-Area 2: Ionics in Communication and Robotics

These symposia will cover all the different aspects of ionics science and technology aimed at the development of advanced materials and systems for application in the ICT (information and communication technology) field, including memristors, switches, conductors, and microelectronic components. This macro-area also covers the applications of ionics science and technology in robotics (*e.g.*, for the development of actuators and other related devices).

Macro-Area 3: Ionics in Biological systems and Life sciences

These symposia will explore the impact of ionics in biological systems, covering areas such as ion transport through membranes, the detection and transduction of stimuli, and the interfacing between biological and artificial systems. This includes also the mimicking of biological operations by electrical circuits including MIECs.

Macro-Area 4: General Aspects, Fundamentals and Theory in ion-conducting materials

SSI-21 will also welcome and emphasize fundamental contributions on several research areas:

- “**Cross-effect**” **phenomena**. Some examples include instances where an external stimulus (*e.g.*, a mechanical stress, exposure to light or other radiation) influences the ion-transport mechanism;
- **Mesoscale phenomena**. A typical case consists in a system where the presence of different domains at the mesoscopic scale strongly affects the macroscopic properties.
- **High-field effects**. Typical examples include nonlinear optic materials.
- **Implementation of advanced characterization techniques**.
- **Computational modeling and simulations**.
- **Various topics**. Topics relevant to solid state ionics and not included above.

Plenary Speakers



Monday, 19 June

Udo Kragl

*University of Rostock,
Germany*

[Bio](#)

Title of the Presentation: "*Ionic Liquids in Biotechnology and Beyond*".



Wednesday, 21 June

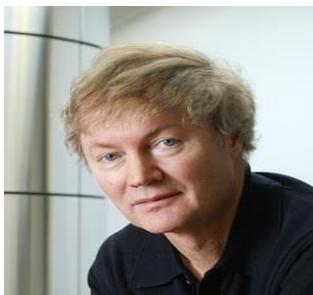
Mogens Mogensen

Technical University of Denmark, Denmark

[Bio](#)

Title of the Presentation: "*Reversible Solid Oxide Cells – Fundamentals, Status, Challenges and Perspectives*".

Friday, 23 June



Michael Grätzel

École polytechnique fédérale de Lausanne, Switzerland

[Bio](#)

Title of the Presentation: "*The Amazing Rise of Perovskite Solar Cells*".



Tuesday, 20 June

Masakazu Aono

International Center for Materials Nanoarchitectonics (MANA), Japan

[Bio](#)

Title of the Presentation: "*New Horizons Opened by Novel Solid State Nanoionic Devices and Systems*".



Thursday, 22 June

Stanley Whittingham

State University of New York at Binghamton, USA

[Bio](#)

Title of the Presentation: "*Solid State Ionics – The Key to the Discovery, Introduction and Domination of Lithium Batteries for Portable Energy Storage.*".

Invited Speakers

- [**Macro-Area 1: Ionics in Energy and Environment**](#)
- [**Macro-Area 2: Ionics in Communication and Robotics**](#)
- [**Macro-Area 3: Ionics in Biological systems and Life sciences**](#)
- [**Macro-Area 4: General Aspects, Fundamentals and Theory in ion-conducting materials**](#)