

First Call Announcement



Dec. 1st – Dec. 3rd, 2021

Molten salts are versatile aprotic solvents with specific properties arising from their partial/total ionic character. They are stable over a wide range of temperatures and even resistant to radiations.

Molten Salts 2021 is a unique conference dedicated to **molten salts and their applications**, to be held yearly in the framework of online conferences organised by the International Virtual Academy (INVIRTA®). INVIRTA, aims to provide access to knowledge through online conferences, workshops and education programs.

Molten Salts 2021 provides a platform for discussing new materials and manufacturing process developments, understanding the complex chemistry of high-temperature molten salt electrolytes, deriving fundamental insights into physicochemical properties and high-temperature methods, and presenting highlights on new research trends and technologies.

The conference will run over a span of time of approximately **3 days consecutively**. With its high standards, it provides an exceptional added value for students, academics and industrial researchers. In total, around **50 presentations** are expected as well as **e-posters**.

Call for Contributions

Authors are kindly encouraged to contribute to and to help shaping the conference through high-quality research contributions. Original and unpublished results of conceptual, constructive, empirical, experimental and theoretical work in all areas of molten salt science and technology are welcome for presentation at the conference ([please download the abstract form](#)). **Students are highly encouraged to participate as oral speakers or to present e-posters**, special slots are reserved to students for oral presentation. On recommendation of the scientific committee, the best contributions will be submitted to Open Source or classical journals. In addition, a conference proceeding (peer-reviewed) with ISSN number will be issued after the conference. Each session of approximately 200 minutes will be organised as follows: **one plenary of 40' and seven contributed presentations of 20', three of which will be reserved for undergraduate and Ph.D. students.**

Program

Sessions will be held from **Dec 1st to Dec 3rd, 2021**. The program will be organised by the scientific committee:

Prof. Dr. Patrick J. Masset, Chair

Prof. Dr. Marie-Louise Saboungi, Sorbonne University Paris (France), Vice-Chair

Dr. Thomas Bauer, DLR (Germany)

Ass. Prof. Angelos G. Kalampounias, University of Ioannina and ICE-HT/FORTH (Greece)

Prof. Dr. Jong-Yun Kim, KAERI (South Korea)

Prof. Dr. Torsten Markus, Applied Sciences University of Mannheim (Germany)

Ass. Prof. Dr. Anna L. Smith, TU Delft (The Netherlands)

Prof. Dr. Francisco Perez-Trujillo, Complutense University of Madrid (Spain)

Key Topics of the Conference

- **Experimental determinations:** structural investigations (EXAFS, neutron, NMR, Raman...), electrochemistry, thermal properties, electronic and ionic conductivity, wettability, solubility, corrosion under static and dynamic conditions
Plenary lecture: Dr Catherine Bessada, CNRS, Orléans / France
- **Theory and modelling:** thermodynamic modelling assessments, thermophysical properties (surface tension, viscosity, structure, thermal conductivity ...), solvation properties, solvent transfer energy, p-O₂- diagrams, F-centres
Plenary lecture: Dr. Angus A. Gray-Weale, BoM, Melbourne / Australia
- **Batteries / Fuels cells:** molten carbonate fuel cells, thermal batteries, molten salt batteries, liquid metal batteries
Plenary lecture: Prof. Donald R. Sadoway, Massachusetts Institute of Technology, Boston / USA
- **Nuclear energy:** actinide/lanthanide properties, molten salt reactor (MSR) technologies, materials corrosion, pyro-processes
Plenary lecture: Dr. Ondrej Benes, Institute for Transuranium Elements, Karlsruhe / Germany
- **Concentrated solar plants (CSP), thermal energy storage (TES) and heat transfer fluids (HTF):** new mixtures, phase diagrams, thermal properties, stability, metallic corrosion, protective coatings, salt purification
Plenary lecture: Dr. Judith Vidal, National Renewable Energy Laboratory (NREL), Denver / USA
- **Electrochemical engineering:** electrodeposition, electrolysis (Al, Na...), electrorefining, electrowinning, powder materials, nitriding, electrochemical additive manufacturing (EAM), recycling
Plenary lecture: Dr. Ana Martinez, SINTEF, Trondheim / Norway

Registration

The registration takes place online by filling out the form (<https://www.invirta.com/mst2021/>). For those who wish to share the results of their work as a presentation or an e-poster, please send an abstract using the attached template. Once the program is established, you will receive a notification for oral or e-poster presentation. Only the abstracts of registered persons will be considered.

The registration and access to the virtual room during the conference will be effective only if the fee payment has been confirmed.

Fees***

Industry: 350 € (300 €**)

Research centres, universities, governmental organisations: 250 € (200 €**)

Students: 150 € *** (100 €**)

* all prices are given without VAT (for European countries, please provide the VAT number of your organisation to be within the VAT reverse framework)

** please provide a copy of your student registration

Benefits for the Participants

- Complementarity of fundamental and applied research works
- Contact with participating experts in molten salts
- Exchange and discussion of new ideas and concepts
- Opportunity to initiate cooperation with other participants
- Downloading of all presentations and posters
- For Ph.D. students, the opportunity to discuss with peers and networking for the future
- Undergraduate and Ph.D. students: "relaxed" but serious atmosphere for young scientists
- Certificates of participation for attendees and speakers
- Best poster Award
- Best presentation Award