



**EurASc**  
SYMPOSIUM  
& CEREMONY

ACADEMIA DAS CIÊNCIAS DE LISBOA, PORTUGAL

**29-30 OCT**  
**2024**

science for  
sustainability



# PROGRAMME SCHEDULE

## SCIENTIFIC AREAS

Life and Food Sciences

Materials Sciences and Engineering

A - Materials and Engineering Towards Sustainable Energy

B - Intelligent Materials for Sustainable Technologies and Products

Chemistry and Biochemistry

Earth and Environmental Sciences

Physics

Mathematics

Industry Session

Startups Session

Awards Session

**October 29<sup>th</sup>, Tuesday**

Room: Grand Hall - ACL

**08:30 – 09:00 Registration**

### Opening Session

**09:00 – 09:30**

Armando Pombeiro | Chairman  
José Luís Cardoso | ACL President  
Rodrigo Martins | EurASc President

**09:30 – 09:50**

#### L1- Helena Nader

Universidade Federal de São Paulo (Unifesp), Brazil  
*Title: Navigating the complexities: challenges facing health and social welfare in the modern world*

**09:50 – 10:10**

#### L2- Daniel Scherman

Faculty of Pharmacy, University of Paris, France  
*Title: Biological sciences for sustainability*

**10:10 – 10:30**

#### L3- Alexander Mathys

Institute of Food, Nutrition, and Health; ETH Zürich, Switzerland  
*Title: Environmental, Social, and Economic Sustainability Assessment of Food Systems: from understanding to actions*



#### Time slots

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



10:30 – 11:00

Coffee Break

Room: Grand Hall - ACL

Room: Session Room - ACL

11:00 – 11:20

**L4- Nicholas Long**

Imperial College, London, UK  
*Title: Organometallic-enhanced nanoelectronics and solar cells*

**L13- Chao-Jun Li**

McGill University, Montreal, Canada  
*Title: Exploration of reactivities towards future Chemical Sustainability*

11:20 – 11:40

**L5- Bing-Joe Hwang**

National Taiwan University of Science and Technology (Taiwan Tech)  
*Title: Value-added Electrolysis for Sustainable Hydrogen Production*

**L14- Peter Roesky**

Karlsruhe Institute of Technology, Germany  
*Title: The Rare Earths*

11:40 – 12:00

**L6- Zhihua Wang**

Zhejiang University, State Key Laboratory of Clean Energy Utilization, China  
*Title: Combustion of H<sub>2</sub>/NH<sub>3</sub> Zero Carbon Fuels for the Sustainable Energy Solution*

**L15- Annie Powell**

Karlsruhe Institute of Technology, Germany  
*Title: The Dark Side of Matter from a Magnetic and Electronic Perspective: Molecules Playing Spin State Hide and Seek*

12:00 – 12:20

**L7- Jihong Wang**

School of Engineering, University of Warwick, Coventry UK  
*Title: The Need of Long Duration Energy Storage for Decarbonising UK Power Grid and Analysis of the Potential of Compressed Air Energy Storage*

**L16- Plinio Innocenzi**

Laboratory of Materials Science and Nanotechnology, University of Sassari, Italy  
*Title: The strange story of room temperature phosphorescence of boric acid*

12:20 – 12:40

**L8- Ehrenfried Zschech**

Brandenburg University of Technology Cottbus-Senftenberg, Germany  
*Title: Mechanically robust microchips for reliable and sustainable high-tech products – What can we learn from nature?*

**L17- João Rocha**

CICECO, Universidade de Aveiro, Portugal  
*Title: Nanoporous Materials for a Sustainable World: Case Studies and Applications*

12:40 – 13:00

**L9- Xinliang Feng**

Max Planck Institute of Microstructure Physics, Technische Universität Dresden, Germany  
*Title: Building a Sustainable Future with Organic 2D Crystals*

**L18- Alexey Bilyachenko**

INEOS, Moscow, Russia  
*Title: Metallasilsesquioxane cages: synthesis, structure, applications*



**Time slots**

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



13:00 – 14:30

## Lunch & Visit to the Museum

Room: Grand Hall - ACL

Room: Session Room - ACL

14:30 – 14:50

### L10- Marcella Bonchio

Dipartimento di Scienze Chimiche,  
University of Padova, Italy  
*Title: Bioinspired Supramolecular  
Architectures for Artificial Photosynthesis  
and Solar Fuels Production*

### L19- Ana Nunes

LAQV-REQUIMTE, NOVA University of  
Lisbon, Portugal  
*Title: The Role of CO<sub>2</sub> in a Circular and  
Sustainable Carbon Economy*

14:50 – 15:10

### L11- Elvira Fortunato

NOVA School of Sciences and Technology,  
Lisbon, Portugal  
*Title: Laser-Induced Graphene: A Novel  
and Sustainable Way to Synthesize  
Graphene*

### L20- Peter Sadler

University of Warwick, Coventry, UK  
*Title: Roles of the Chemical Elements in  
Sustaining Life*

15:10 – 15:30

### L12- José María De Teresa

Instituto de Nanociencia y Materiales de  
Aragón (INMA), CSIC-Univ. de Zaragoza,  
Spain  
*Title: Efficient nanofabrication based on  
spin-coated organometallic films and  
focused ion irradiation*

### L21- José J. G. Moura

LAQV, NOVA School of Science and  
Technology, Portugal  
*Title: Bioinorganic Green Tools*

15:30 – 15:50

### L23- John Roy Porter

University of Copenhagen, Department of  
Plant and Environmental Sciences, Denmark  
*Title: Heresies of the 21<sup>st</sup> Century*

### L22- Natividad Carpintero- Santamaria

IFN GV, Universidad Politécnica de Madrid,  
Spain  
*Title: Nuclear Sciences and Applied  
Radiation for Human Development in  
the 21<sup>st</sup> Century*



#### Time slots

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



15:50 – 16:20

**Coffee Break**

16:20 – 16:40

**L24- Filipe Duarte Santos**

CHANGE—Global Change and Sustainability Institute, University of Lisbon, Portugal  
*Title: Softening the Human Sustainability Boundaries to reach Sustainable Development*

16:40 – 17:00

**L25- Virender K. Sharma**

School of Public Health, Texas A&M University, USA  
*Title: Science of High-Valent Iron in Sustainable Environment and Human Health*

17:00 – 17:20

**L26- Paul Lecoq**

European Organization for Nuclear Research (CERN), Geneva, Switzerland  
*Title: How Physics can contribute to good health and well-being for everyone*

17:20 – 17:40

**L27- Manuel G. Velarde**

Instituto Pluridisciplinar, Universidad Complutense, Madrid, Spain  
*Title: Mechanics meets electronics at the nanolevel ruling out heat. Case study: a field effect transistor based on soliton assisted charge transport*

17:40 – 18:00

**L28- Wil Schilders**

Department of Mathematics and Computer Science, Eindhoven University of Technology, The Netherlands  
*Title: The role of mathematics for the sustainable goals of UNESCO*

18:00 – 18:20

**L29- Rui Vilela Mendes**

CMAFcIO-UL and Academy of Sciences, Lisbon, Portugal  
*Title: Sustainability and governability*

20:00

**Symposium Dinner** (for registrants only)



**Time slots**

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



## October 30<sup>th</sup>, Wednesday

Room: Grand Hall - ACL

### 08:30 – 09:00 Registration


**09:00 – 09:20** **L30- Yu Wang**  
Farasis Energy (Hayward, USA; Frickenhausen, Europe; Ganzhou and Zhenjiang, China)  
*Title: Li-ion Battery Development for Electric Vehicle Application.*

**09:20 – 09:35** **L31- Eric Fernandes**  
RECICLOTRON, Nova Friburgo, Brazil  
*Title: Consumer engagement is key for everyday sustainability practices*

**09:35 – 09:50** **L32- Henrique Pombeiro**  
Watt-IS, Portugal  
*Title: From data to added-value services: The role of data science in the energy sector*

**09:50 – 10:05** **L33- Diego de Miguel**  
Certest, Spain  
*Title: Integral LNP delivery platform for RNA therapeutics based on novel ionizable lipids with enhanced Bioactivity*

**10:05 – 10:20** **L34- João Mano, Catarina Custódio**  
METATISSUE, Portugal  
*Title: A tale of translating human-derived biomaterials from the bench to the market*

**10:20 – 10:35** **L35- Pui-In Mak**   
Digifluidic, State-Key Laboratory of Analog and Mixed-Signal VLSI  
University of Macau, Macau, China  
*Title: Automated nucleic acid analysis systems for decentralized healthcare*

### 10:35 – 11:00 Coffee Break

**11:00 – 11:15** **L36- Gonçalo Doria**  
STABVIDA, Portugal  
*Title: The Future of At-Home Diagnostics in Medical Care: Introducing Doctor Vida® pocket*

### 11:15 – 11:30 Round Table Discussion



#### Time slots

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



<p><b>11:30 – 11:50</b></p>	<p><b>AL1- Michel Goldman</b>  <i>Blaise Pascal Medal in Medicine and Life Sciences 2024</i>            Institute for Interdisciplinary Innovation in Healthcare, Université libre de Bruxelles, Brussels, Belgium  <i>Title: How the Covid 19 pandemic shaped the future of medicine and healthcare</i></p>
<p><b>11:50 – 12:10</b></p>	<p><b>AL2- Alfio Quarteroni</b>  <i>Blaise Pascal Medal in Mathematics 2024</i>            Politecnico di Milano, Italy; EPFL, Lausanne, Switzerland  <i>Title: Scientific Machine Learning for the Simulation of the Heart Function</i></p>
<p><b>12:10 – 12:30</b></p>	<p><b>AL3- Joachim Sauer</b>  <i>Blaise Pascal Medal in Chemistry 2024</i>            Institute für Chemie, Humboldt-Universität zu Berlin, Germany  <i>Title: Understanding and Improving Materials for Water Harvesting and Carbon Dioxide Capture - MOFs</i></p>
<p><b>12:30 – 12:50</b></p>	<p><b>AL4- Pete Smith</b>  <i>Blaise Pascal Medal in Earth and Environmental Sciences 2024</i>            Institute of Biological &amp; Environmental Sciences, University of Aberdeen, UK  <i>Title: Managing Land to Address the World's Multiple Challenges</i></p>
<p><b>12:50 – 14:20 Lunch &amp; Visit to the Museum</b></p>	
<p><b>14:20 – 14:40</b></p>	<p><b>AL5- Luis O. Silva</b>  <i>Blaise Pascal Medal in Physics 2024</i>            Instituto de Plasmas e Fusão Nuclear, IST, Universidade de Lisboa, Lisbon, Portugal  <i>Title: Ultra intense lasers and particle beams: from fundamental science to novel tools for discovery</i></p>
<p><b>14:40 – 15:00</b></p>	<p><b>AL6- Yury Gogotsi</b>  <i>Blaise Pascal Medal in Materials Science 2024</i>            Nanomaterials Institute, and Department of Materials Science and Engineering, Drexel University, Philadelphia, USA  <i>Title: MXenes and Their Applications in Water and Energy Technologies</i></p>
<p><b>15:00 – 15:20</b></p>	<p><b>AL7- Pol Spanos</b>  <i>Blaise Pascal Medal in Engineering 2024</i>            Mechanical &amp; Civil Engineering, Rice University, Houston, USA  <i>Title: Versatile Techniques for Nonlinear Stochastic Dynamic Analyses</i></p>



**Time slots**

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



**15:20 – 15:50**

### Welcome & Diplomas to New Members

Photos | New Members; Awardees; All Participants

**15:50 – 16:10**

### Honor for Distinguished Leadership Past Perpetual Secretary & Past Presidents

**16:10 – 16:30**

### Closing Session & 2025 Symposium

**16:30 – 17:00**

Coffee Break

**17:00 – 18:30**

### EurASc General Assembly



#### Time slots

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion



## Poster Session

October 29<sup>th</sup> & 30<sup>th</sup>

Cloister - ACL

### P1- Diogo Miguel Pinto

CEGOT, Faculty of Arts and Humanities of University of Porto, Portugal

*Title: Building a Sustainable Future: some strategies and challenges leading to innovative development in rural areas*

---

### P2- Esma Ismailova

IMT/Mines St. Etienne, Department of Bioelectronics, Gardanne, France

*Title: Organic Bioelectronics for sustainable biomonitoring*

---

### P3- Ana Rovisco

CENIMAT/ i3N, Department of Materials Science, and CEMOP/UNINOVA, NOVA University of Lisbon, Portugal

*Title: Sustainable and multifunctional ZTO nanostructures for energy and environmental applications*

---

### P4- Ana Rovisco

CENIMAT/ i3N, Department of Materials Science, and CEMOP/UNINOVA, NOVA University of Lisbon, Portugal

*Title: Photodegradation of Rhodamine B under UV and Sunlight using ZTO Nanostructures*

---

### P5- Brij Mohan

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: MOFs Engineered for the Capture and Conversion of Carbon Dioxide*

---

### P6- Anirban Karmakar

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: Sustainable Halogen-Decorated Metal-Organic Frameworks for Efficient Carbon Capture, Separation and Utilization*

---

### P7- Anup Paul

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: Enhancing Oxygen Evolution Reaction Catalysis with Amide Functionalized Coordination Polymers*

---

### P8- Abdallah Mahmoud

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: Binary Transition Metal Phosphides Embedded in multi-Codoped Carbon Matrices as Electrode Materials for Batteries and Electrocatalysis*

---



#### Time slots

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion





### **P9- Martin Prechtl**

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: UNSDGs and Academia: Is there a holistic approach towards sustainable future societies through small molecules and hydrogen utilisation?*

---

### **P10- Sónia Carabineiro**

LAQV-REQUIMTE, School of Science and Technology, NOVA University of Lisbon, Portugal

*Title: Novel organotin-PTA complexes supported on carbon materials as recyclable catalysts for solvent-free cyanosilylation of aldehydes*

---

### **P11- Manas Sutradhar**

CQE, IST, Universidade de Lisboa, and Universidade Lusófona, Lisbon, Portugal

*Title: Vanadium in Catalysis and Sustainability*

---

### **P12- Nuno Reis Conceição**

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: Catalytic C-H activation of small molecules by copper and zinc complexes towards sustainable organic synthesis*

---

### **P13- Hugo Lapa**

CQE, IST, Universidade de Lisboa, Lisbon, Portugal

*Title: Application of ball-mill technology in the synthesis of C-scorpionate complexes and catalytic oxidation reactions*

---



#### **Time slots**

Normal Lectures and Awardees Lectures: 20 min

Startup Lectures: 15 min + roundtable discussion