

ALISTORE EUROPEAN RESEARCH INSTITUTE JOIN PARLIAMENTARIANS IN BRUSSELS

The first 2016, biannual meeting of the ALISTORE European Research Institute of leading European battery technology scientists took place in the CSIC European Office in Brussels across the 14th and 15th June 2016.

The two day event started with the theme “Future aspects of Materials Sciences & Electrochemistry research in the European Green Energy Economy: The role of the ALISTORE European Research Institute” Discussion topics included : the current basic economics of energy storage technologies and those which can be coupled to renewable energy systems, the current bottlenecks in the improved performance greener battery supply chain and how we can create even better European - as opposed to national - efforts of R&D on energy storage solutions leading to faster product development and entry into the marketplace?

Member of the Environment Committee in the European Parliament Julie Girling chaired the debate by the scientific leaders in the first part of the meeting. The panel of scientific experts who led the debate included **Dr Anne de Guibert** (SAFT, France, Industrial Club Member), **Prof. Clare Grey** (University of Cambridge, UK, Academic Member), **Prof. Patrik Johansson** (Chalmers University of Technology, Sweden, Academic Member), **Dr .Yann Laot** (TOTAL, France, Industrial Club Member), **Dr. M. Rosa Palacin** (ICMAB-CSIC, Spain, Academic Member)

Commenting on the event, Julie Girling said;

“Events like this are essential to bring together academic, industry and policy makers and I was delighted to facilitate hosting this ALISTORE ERI event in Brussels.”

Professor Jean-Marie Tarascon, founder of the original European funded Network of Excellence project said:

“The now well-established ALISTORE European Research Institute is cutting across European research boundaries and assisting European manufacturers to move towards making higher performing and greener batteries of the future.”

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Notes to editors – Attached here

The ALISTORE ERI was created in the form of a five-year European Commission-funded Framework 6 Network of Excellence project which started in 2004 with a pan-European research consortium of world-class battery technology researchers led by Professor Jean Marie Tarascon (France).

In early 2009, the ALISTORE ERI became a federative research structure coordinated by CNRS, France, funded through academic member contributions and the membership fees of 12 European companies¹ that joined its associated Industrial Club.

From July 2010, the ALISTORE ERI network has been led by Prof. Patrice Simon (UPS, Toulouse, France) and Dr. M. Rosa Palacin (ICMAB, Barcelona Spain).

Today, the ALISTORE ERI currently federates 19 European research institutions² performing interactive cross-functional high-level research in the field of electrochemical energy storage, focusing on novel battery technologies and battery materials.

Self-generated ERI funds allow collaborative research and development oriented towards technology transfer to the industrial club members who will advance the technology development helping to introduce new energy storage products in the marketplace, all with the aim of enhancing the European economy and making Europe seen to be a leading driving force in new greener battery technology creation and manufacture for global markets.

The long-term research programme, undertaken by the leading academic research teams in the ALISTORE-ERI, is underpinned by Post-Doctoral researchers and PhD students who are financially supported by funds sourced from the Industrial Club members. 40 such positions have been funded since the beginning of the Industrial Club, representing 90% of the annual ALISTORE ERI budget. Essentially all the funds raised from the Industrial Club members in the ERI are used to maintain the leading-edge research momentum in battery technology.

Achievements

The ERI approach, which merges both basic and applied research requirements, has borne an impressive research record in the 12 years or so of the existence of the ALISTORE platform. This includes the writing of 18 White Papers, on specific research topics and which are delivered twice a year to the Industrial partners, around 12 fact-finding trip reports per

¹ EDF, Robert Bosch, Solvay, Saft, Umicore, Commissariat à l'Énergie Atomique, Renault, Total, BASF, Dyson, Saint-Gobain, Repsol

² Centre National de la Recherche Scientifique (Coordinator, France), The University Court of the University of Saint Andrews (UK), University of Montpellier (France), University of Aix-Marseille (France), University of Delft (The Netherlands), University of Cordoba (Spain), University of Kent (UK), National Institute of Chemistry of Slovenia (Slovenia), Warsaw University of Technology (Poland), Spanish National Centre of Scientific Research (Spain), University of Uppsala (Sweden), University of Picardie Jules Verne, Amiens (France), University Paul Sabatier, Toulouse (France), University of Pau and of Pays de l'Adour (France), University of Nantes (France), University of Bath (UK), Chalmers University of Technology (Sweden), Graz University of Technology (Austria), University of Cambridge (UK).

year, a comprehensive scientific update report, a list of a number of published papers and 19 patent application families.

The ALISTORE ERI is also involved in the academic training of talented Masters' and PhD students – the scientific research leaders of the future. The Master's degree in "Materials for Energy Storage and Conversion" (MESOC) was created in 2004 by ALISTORE partner academic institutions³ (see http://www.u-picardie.fr/mundus_MESOC/), providing two-year training in materials science and electrochemistry and, in 2005, it has been granted the prestigious Erasmus Mundus Label from the European Commission

About 200 students have been trained on this programme since it began.

Green technology aspects of the ALISTORE ERI.

From the outset, the strategic aims and the prime focus of the ALISTORE-ERI activity has been on researching into various aspects of new "green" battery technologies such as advanced Lithium-ion, Sodium-ion battery and other alternative electrochemical storage technologies which have improved performance over the current state-of-the-art in terms of energy density and which are also more environmentally-friendly than batteries using Lead or Nickel/ Cadmium technologies, from a recycling and environmental point of view.

More recently, the ERI research base has also been working on Lithium-Sulphur and Lithium-air batteries, which give further improved energy densities and are based on cheaper and more abundant raw materials used for the positive electrodes (the Sulphur and air/oxygen).

The main long-term goal is to obtain the strategic advantage of avoiding the use of any Lithium in future battery technology, whatsoever, as it is an element which is becoming much more scarce as a raw material and, as such, its procurement by battery manufacturers may be entangled in the future with risk of supply. Lithium is much more expensive than Sodium which is both abundant on our planet and geographically distributed.

There is a continual drive by the ERI members to win a large-scale funding bid to advance certain aspects of Lithium-air technology which is forecast to be the next step-change in battery technology in the marketplace.

Presently, the ERI members are undertaking collaborative battery research technology projects where the European car manufacturers or automotive/ electrical companies also participate with the emphasis on developing new materials and technologies which will bring about significant improvements in performance for electric vehicles, giving them more driving distance or range per charge – an "Achilles heel" issue for such vehicles today.

Such green battery technology will be also used to enhance and support renewable energy technology penetration in the marketplace to further assist in decreasing fossil fuel usage and the corresponding CO₂ emissions.

³ Aix-Marseille University (France), University of Cordoba (Spain), University of Picardie Jules Verne (Amiens, France), University of Toulouse (France), Warsaw Technical University (Poland)

[Suggested further Quote from, Professor Patrice Simon

“Today, MEP Julie Girling has chaired an important part of a meeting of our research scientists in the ALISTORE European Research Institute and she has seen that significant progress is being made by this large group of dedicated research scientists who are working together and advancing European “green” electro-chemical storage science.”

Suggested Further Quote from MEP Julie Girling

“It has been very rewarding to be involved, today, in a meeting of a European industry-supported research and commercialisation platform which was initiated by European funding as an FPVI network of excellence 12 years ago and which is now self-supporting and continues to develop novel electrochemical storage technologies which will provide longer term economic benefits for Europe when they make their way into the next generation of better performing battery-driven electric vehicles, portable products and renewal energy systems whilst, at the same time, environmentally, they will greatly assist in further reducing our carbon emission footprint in Europe in future years.” }

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