MEDIA RELEASE

Piotrek and CSIRO to make next gen lithium batteries for global market

A new partnership between Australia's national science agency, CSIRO, and Japanese specialist chemical manufacturer, Piotrek, will see Australian-developed battery technologies commercialised globally within the next five years.

The collaboration will enable the next generation of lithium battery technologies for portable electronic devices, drones and automotive vehicles, as well as address a critical safety need with lithium batteries by helping prevent battery fires.

The two organisations have partnered to develop the next generation of Solid Polymer Electrolytes (SPEs) for lithium batteries using CSIRO's proprietary RAFT (Reversible Addition-Fragmentation chain Transfer) polymer technology and Piotrek's Ion Conducting Polymers (ICP).

General Manager at Piotrek, Mr Ihei Sada, said combining the CSIRO SPE with Piotrek ICP will give his company a big market advantage.

"This partnership will help Piotrek make our batteries safer and more efficient, and with our industry reach, we will get our advanced batteries to the market faster," Mr Sada said.

"Together we will develop the world's safest, longer life solid state high energy battery."

Solid state batteries are a class of lithium batteries that typically use a lithium metal anode, the highest specific energy of all battery anodes, enabling next generation batteries with twice as much energy than today's lithium battery technologies. Additionally, there is no volatile or flammable liquids inside a solid state battery that can catch fire at low temperatures if the cell is damaged.

CSIRO Battery Research Leader, Dr Adam Best, said that with several companies already active in this field, there are proposals to have solid state battery enabled devices in the market by 2025, if not sooner.

"Our RAFT technology allows us to tune our SPEs' properties to expand their versatility for different types of batteries and fuel cells, and will also significantly reduce the cost of device assembly and manufacture" Dr Best said.

CSIRO's Dr John Chiefari is a co-inventor and co-developer of the RAFT polymer technology, and worked with Professors Maria Forsyth and Patrick Howlett from Deakin University's BatTri Hub to develop the SPEs. Dr Chiefari said the exciting collaboration with Piotrek will bring together battery technologies from both organisations to fast- track the development of an SPE for use in high energy (4.5-5V) Lithium batteries for electric vehicles and drones.

"By developing and exploiting disruptive technology platforms, we're supporting the creation of new businesses and industries for Australia and the world," Dr Chiefari said.

"This development will underpin the growth of high energy batteries for the electric vehicle market," he said.

Director of CSIRO's Manufacturing arm, Dr Keith McLean, said the technologies developed through the Piotrek partnership will support productivity gains, boost sustainability and help capture emerging opportunities in local and global battery markets.

“CSIRO is committed to solving the greatest challenges through innovative science and technology, and developing the world’s safest and most efficient next-gen lithium ion batteries is just one of the ways we’re doing this,” Dr. McLean said

CSIRO is also working with Piotrek to automate electrolyte processes using robots, and to license a new electrolyte recipe.

Ends.

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Image caption: CSIRO’s lithium battery experience spans 35 years, with expertise in characterisation, fabrication and testing of lithium-ion and lithium metal batteries.

Credit: CSIR

CSIRO-20170620-440.jpg

CSIRO-20170620-417.jpg

Image caption: CSIRO’s FASTER robot excels at accelerating discovery in commercially and industrially relevant electrochemical process.

Credit: CSIRO

Piotrek Co., Ltd., Kyoto, Japan
Piotrek has just concluded Joint Development agreement with CSIRO for developing Polymer Electrolyte -Solid state Electrolyte LIB consisting of anode Li metal and high energy cathode by utilizing RAFT ex CSIRO and ICPm ex Piotrek as unique polymer electrolytes after collaborating technically for past two years. Piotrek ICPm system technology performs excellently under the thermal stability at temperature up to 110 ℃ without any damage on the performance as well as excellent property at lower temperature. In addition, this system material is completely non-inflammable at over 1000 ℃ with gas burner in the direct contact combustion test.

Refer to http://www.piotrek-il.co.jp