



**Altech Chemicals**  
Limited

## ASX ANNOUNCEMENT AND MEDIA RELEASE

15 December 2022

# ALTECH – INTERVIEW WITH HEAD OF FRAUNHOFER IKTS - PROFESSOR DR. ALEXANDER MICHAELIS

Altech Chemicals Limited (Altech/the Company) (ASX: ATC and FRA: A3Y) is pleased to release an interview recently undertaken with the Head of Fraunhofer IKTS (Fraunhofer), Professor Dr. Alexander Michaelis. Fraunhofer is Altech's joint venture partner in the CERENERGY® Battery Project in Saxony, Germany. In the interview, Professor Michaelis discusses the ten-year history of Fraunhofer's development of CERENERGY® battery technology, as well as Fraunhofer's vision to create a safer, cheaper battery for the grid storage market. Professor Michaelis also discusses how Fraunhofer searched for a joint venture partner to commercialise its technology, and also discusses Fraunhofer's joint venture relationship with the Altech Group.



The video can be found on YouTube at <https://youtu.be/B5VkAXS5Vzs>

On 14 September 2022, Altech announced a JV Agreement with world-leading German battery institute Fraunhofer to commercialise Fraunhofer's revolutionary CERENERGY® Sodium Alumina Solid State (SAS) Battery. Altech, together with associated entity Altech Advanced Material AG, is the majority owner at 75% of the JV company, which is commercialising a 100 MWh project to be constructed on Altech's land in Schwarze Pumpe, Germany. CERENERGY® batteries are the game-changing grid storage alternative to lithium-ion batteries. CERENERGY® batteries are fire and explosion-proof; have a life span of more than 15 years and operate in extreme cold and desert climates. The battery technology uses table salt and is lithium-free; cobalt-free; graphite-free; and copper-free, eliminating exposure to critical metal price rises and supply chain concerns. The Altech-Fraunhofer joint venture is developing a 100 MWh CERENERGY® battery plant on Altech's site in Saxony, Germany, specifically focussed on the grid (stationary) energy storage market.

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## Altech Chemicals Interactive Investor Hub

Engage with Altech directly by asking questions, watching video summaries and seeing what other shareholders have to say about this, as well as past announcements, at our Investor Hub <https://investorhub.altechchemicals.com>

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## **About Altech Chemicals Ltd (ASX:ATC) (FRA:A3Y)**

### **CERENERGY® Batteries Project**

Altech Chemicals Ltd is a specialty battery technology company that has a joint venture agreement with world leading German battery institute Fraunhofer IKTS ("Fraunhofer") to commercialise the revolutionary CERENERGY® Sodium Alumina Solid State (SAS) Battery. CERENERGY® batteries are the game-changing alternative to lithium-ion batteries. CERENERGY® batteries are fire and explosion-proof; have a life span of more than 15 years and operate in extreme cold and desert climates. The battery technology uses table salt and is lithium-free; cobalt-free; graphite-free; and copper-free, eliminating exposure to critical metal price rises and supply chain concerns.

The joint venture is commercialising its CERENERGY® battery, with plans to construct a 100MWh production facility on Altech's land in Saxony, Germany. The facility intends to produce CERENERGY® battery modules to provide grid storage solutions to the market.



### **Silumina Anodes™ Battery Materials Project**

Altech has licenced its proprietary high purity alumina coating technology to 75% owned subsidiary Altech Industries Germany GmbH (AIG), which has commenced a definitive feasibility study for the development of a 10,000tpa silicon/graphite alumina coating plant in the state of Saxony, Germany to supply its Silumina Anodes™ product to the burgeoning European electric vehicle market.

This Company recently announced its game changing technology of incorporating high-capacity silicon into lithium-ion batteries. Through in house R&D, the Company has cracked the "silicon code" and successfully achieved a 30% higher energy battery with improved cyclability or battery life. Higher density batteries result in smaller, lighter batteries and substantially less greenhouse gases, and is the future for the EV market. The Company's proprietary silicon graphite product is registered as Silumina Anodes™.

The Company is in the race to get its patented technology to market, and recently announced the results of a preliminary feasibility study (PFS) for the construction of a 10,000tpa Silumina Anode™ material plant at AIG's 14-hectare industrial site within the Schwarze Pumpe Industrial Park in Saxony, Germany. The European graphite and silicon feedstock supply partners for this plant will be SGL Carbon and Ferroglobe. The project has also received green accreditation from the independent Norwegian Centre of International Climate and Environmental Research (CICERO). To support the development, AIG has commenced construction of a pilot plant adjacent to the proposed project site to allow the qualification process for its Silumina Anodes™ product. AIG has executed NDAs with two German automakers as well as a European based battery company.



### **HPA Production Project**

Altech is also further aiming to become a supplier of 99.99% (4N) high purity alumina (Al<sub>2</sub>O<sub>3</sub>) through the construction and operation of a 4,500tpa high purity alumina (HPA) processing plant at Johor, Malaysia, and has finalised Stage 1 and Stage 2 construction of its HPA plant in Johor, Malaysia. Feedstock for the plant will be sourced from the Company's 100%-owned near surface kaolin deposit at Meckering, Western Australia and shipped to Malaysia. The HPA project is significantly de-risked with a bankable feasibility study completed, senior lender project finance from German government owned KfW IPEX-Bank approved, and a German EPC contractor appointed – with initial construction works at the site completed. In addition to the senior debt, conservative (bank case) cash flow modelling of the HPA plant shows a pre-tax net present value of USD 505.6million at a discount rate of 7.5%. The project generates annual average net free cash of ~USD76million at full production. Altech is in the final stages of project finance with a potential raising of US\$100m of secondary debt via the listed green bond market. In addition, US\$100m of project equity is being sought through potential project joint venture partners.