



Altech Chemicals  
Limited

## ASX ANNOUNCEMENT AND MEDIA RELEASE

18 October 2019

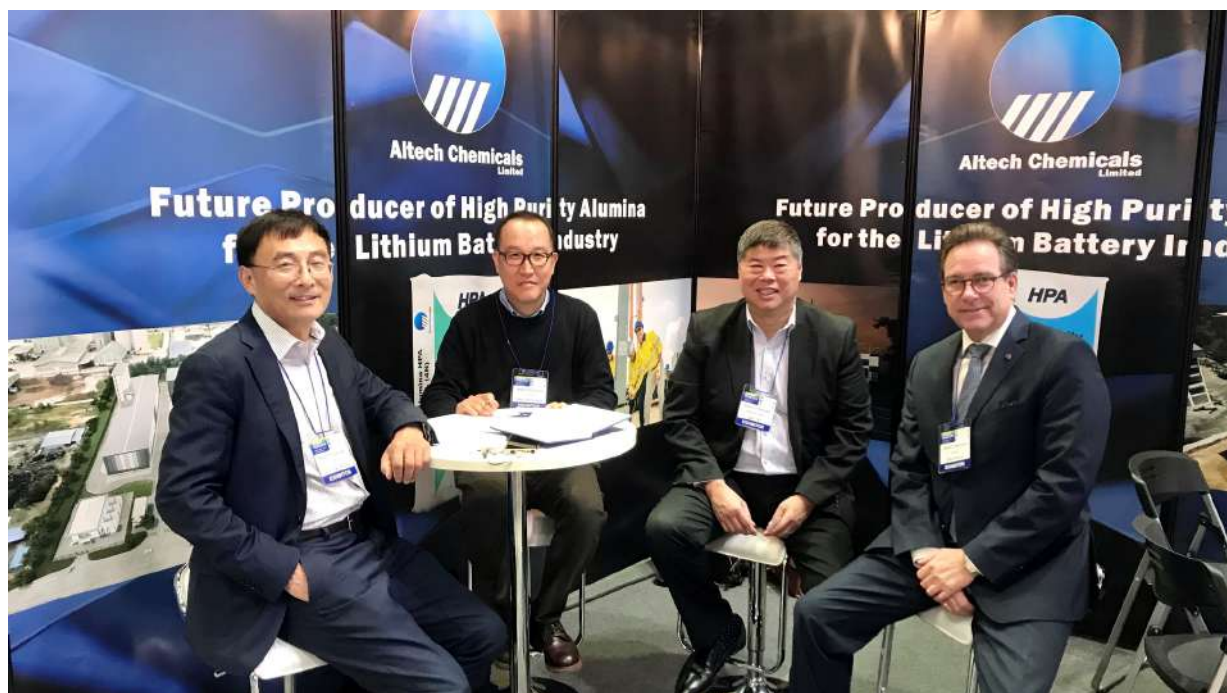
# ALTECH ATTENDANCE AT INTERBATTERY 2019 SEOUL, KOREA

### Highlights

- Altech brand building at Korea's premier battery exhibition
- HPA critical for ceramic-coated separator sheets

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) (FRA: A3Y) is pleased to advise of its attendance at InterBattery 2019, Korea's leading battery exhibition showcasing various new products and technologies related to the battery industry. Altech's exhibition booth was manned by managing director Iggy Tan, alternate director Uwe Ahrens, general manager operations Dr Jingyuan Liu and process engineer Ms Summer Qi. Turnout at the booth was strong; the Company's attendance at the exhibition is an important part of building the "Altech" brand as an emerging supplier of high quality 4N high purity alumina (HPA).

HPA is crucial for the lithium-ion battery industry as is it used as a coating on the separator sheets that divide the cathode and anode electrodes within a battery. The separator sheet membrane acts as a critical safety barrier inside the battery, the separator's role is to ensure that the battery anode and cathode electrodes do not come into contact and "short-circuit", which if this were to occur a thermal runaway would result.



Video of Altech at InterBattery 2019 is available at: <https://www.youtube.com/watch?v=1IlzAWSVyhM>

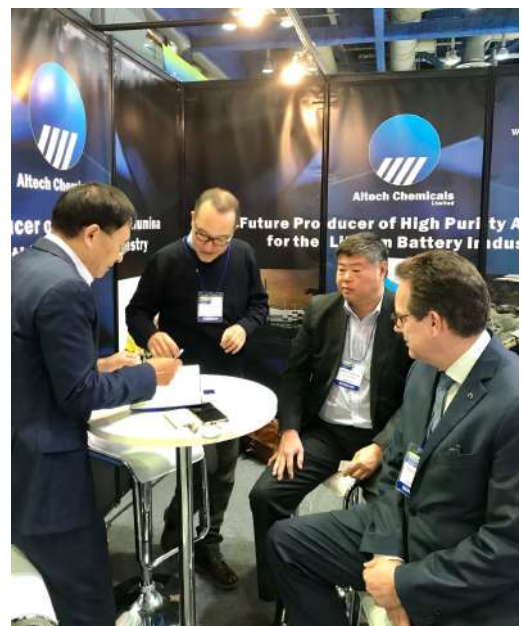
HPA coated battery separators (or “ceramic-coated” separators) are able to tolerate the ever increasing lithium-ion battery operating temperatures. Higher battery operating temperatures are the product of advances in cathode technology, which has resulted in an increase in the amount of energy being stored, discharged and recharged within the lithium-ion battery’s confined space. A ceramic-coated separator has a significantly higher shrinkage temperature compared to a conventional non-coated polymer separator, plus ceramic-coated separators exhibit reduced flammability should a thermal runaway commence, these attributes result in a much safer battery. Using a ceramic-coated separator within a lithium-ion battery also increases the battery’s discharge rate; lowers self-discharge; and increases the battery’s life cycle (number of re-charges). Not all lithium-ion batteries use ceramic-coated separators, which are predominantly used in high energy density batteries, the type that are required for electric vehicles and renewable energy storage.

HPA particle size is crucial for its application in ceramic-coated separators, for this application HPA is required to be ultra-fine, with a particle size of less than 2 microns. Altech’s 4,500tpa HPA plant that currently under construction in Malaysia is designed to achieve this ultra-fine specification. Given the global move towards lithium-ion battery powered electric vehicles and renewable energy storage, HPA’s role in this sector is forecast to be increasingly significant.



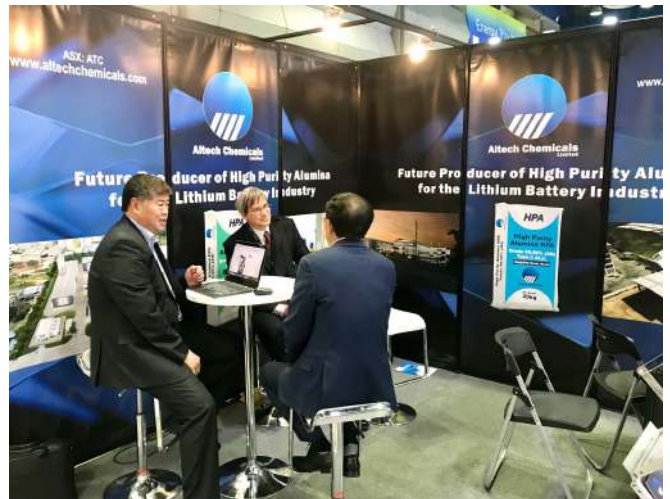


For personal use only





For personal use only



For more information, please contact:

**Corporate**

**Iggy Tan**

Managing Director  
Altech Chemicals Limited  
Tel: +61 8 6168 1555  
Email: [info@altechchemicals.com](mailto:info@altechchemicals.com)

**Shane Volk**

Company Secretary  
Altech Chemicals Limited  
Tel: +61 8 6168 1555  
Email: [info@altechchemicals.com](mailto:info@altechchemicals.com)

**Investor Relations (Europe)**

**Kai Hoffmann**

Soar Financial Partners  
Tel: +49 69 175 548320  
Email: [hoffmann@soarfinancial.com](mailto:hoffmann@soarfinancial.com)  
*Wir sprechen Deutsch.*

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

Altech Chemicals Limited (Altech/the Company) is aiming to become one of the world's leading suppliers 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. Feedstock for the plant will be sourced from the Company's 100%-owned kaolin deposit at Meckering, Western Australia and shipped to Malaysia.

HPA is a high-value, high margin and highly demanded product as it is the critical ingredient required for the production of synthetic sapphire. Synthetic sapphire is used in the manufacture of substrates for LED lights, semiconductor wafers used in the electronics industry, and scratch-resistant sapphire glass used for wristwatch faces, optical windows and smartphone components. Increasingly HPA is used by lithium-ion battery manufacturers as the coating on the battery's separator, which improves performance, longevity and safety of the battery. With global HPA demand approximately 19,000t (2018), it is estimated that this demand will grow at a compound annual growth rate (CAGR) of 30% (2018-2028); by 2028 HPA market demand is forecast to be approximately 272,000t, driven by the increasing adoption of LEDs worldwide as well as the demand for HPA by lithium-ion battery manufacturers to serve the surging electric vehicle market.



German engineering firm SMS group GmbH (SMS) is the appointed EPC contractor for construction of Altech's Malaysian HPA plant. SMS has provided a USD280 million fixed price turnkey contract and has proposed clear and concise guarantees to Altech for plant throughput and completion. Altech has executed an off-take sales arrangement with Mitsubishi Corporation's Australian subsidiary, Mitsubishi Australia Ltd (Mitsubishi) covering the first 10-years of HPA production from the plant.

Conservative (bank case) cash flow modelling of the project shows a pre-tax net present value of USD505.6million at a discount rate of 7.5%. The Project generates annual average net free cash of ~USD76million at full production (allowing for sustaining capital and before debt servicing and tax), with an attractive margin on HPA sales of ~63%.

The Company has been successful in securing senior project debt finance of USD190 million from German government owned KfW IPEX-Bank as senior lender. Altech has also mandated Macquarie Bank (Macquarie) as the preferred mezzanine lender for the project. The indicative and non-binding mezzanine debt term sheet (progressing through due diligence) is for a facility amount of up to USD90 million. To maintain project momentum during the period leading up to financial close, Altech has raised ~A\$39 million in the last 24 months to fund the commencement of Stage 1 and 2 of the plant's construction; Stage 1 construction commenced in February 2019 with Stage 2 now underway.

Altech recently announced the sale of an option to Frankfurt stock exchange listed Youbisheng Green Paper AG (since renamed Altech Advanced Materials AG (AAM)), whereby AAM can acquire up to a 49% interest in Altech's HPA project for USD100 million. AAM has commenced the process of securing the funds to enable it to exercise its option, which once complete, it is expected would be a catalyst for project financial close.

**Forward-looking Statements**

This announcement contains forward-looking statements which are identified by words such as 'anticipates', 'forecasts', 'may', 'will', 'could', 'believes', 'estimates', 'targets', 'expects', 'plan' or 'intends' and other similar words that involve risks and uncertainties. Indications of, and guidelines or outlook on, future earnings, distributions or financial position or performance and targets, estimates and assumptions in respect of production, prices, operating costs, results, capital expenditures, reserves and resources are also forward-looking statements. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions and estimates regarding future events and actions that, while considered reasonable as at the date of this announcement and are expected to take place, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the directors and management. We cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and readers are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements are subject to various risk factors that could cause actual events or results to differ materially from the events or results estimated, expressed or anticipated in these statements.

For personal use only

