

# ASX Announcement

30th October 2020

## AnteoTech Establish Key Platforms for Growth in Very Productive Quarter of Activity

### Highlights

#### Life Sciences

- COVID-19 Antigen Rapid Test commercialisation processes on track
- COVID-19 Antigen Rapid Test Independently validated
- AnteoBind raw material business increases in volume
- ISO 13485 certification achieved

#### Energy

- Collaborators 1 and 3 confirm processability, enhanced specific capacity and 1<sup>st</sup> cycle efficiency of generation 1 silicon composite.
- Cross Linker Additive (CLA) collaboration results demonstrate very good attributes.
- CLA collaboration work expanding and showing very good results.

AnteoTech Limited (ASX: ADO) ("AnteoTech" or "the Company") is pleased to provide this update on activities for the quarter ended 30 September 2020.

### Business Update

#### 1. Life Sciences

##### Life Science Business Strategy

The Life science business strategy is: to focus on the application and adoption of AnteoTech IP (AnteoBind™) in the Point of Care diagnostic global markets through:

- Supply of AnteoBind and AnteoBind enhanced products to PoC developers and manufacturers.
- Supply of services to support PoC developers particularly in complex and high sensitivity applications.
- Develop, manufacture and supply assays to the PoC market with a particular focus on complex, high sensitivity PoC applications.

#### **COVID-19 Antigen Rapid Test commercialisation processes on track to complete in Qtr. 1 2021**

During the quarter we progressed the processes required to produce documentation for regulatory approval including:

- TGA confirmation of lab based clinical trial process for approval.
- Preliminary discussions with Victorian COVID-19 swab sample provider to design and execute the clinical trial.

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- Preliminary research and discussion with global test manufacturers.
- Signed development contract with Axxin to complete configuration and final settings of the reader for clinical trial and TGA approval processes.
- Completed discussion with a number of organisations to conduct trials including potential distributors in the U.S., Europe and Israel and industry organisations including medical providers to the mining industry and the airline industry.

### **AnteoTech COVID-19 Antigen Rapid Test high sensitivity attributes independently validated**

Post reporting date we reported that AnteoTech's (ADO) COVID-19 Antigen Rapid Test has been independently analysed by Spanish lateral flow developer and manufacturer, Operon. The study has validated AnteoTech's COVID-19 Antigen Rapid Test against lab-based PCR tests, which are widely accepted as a very reliable measure of testing for COVID-19 infection. The test reliably detected all positive samples, including 9 of the 25 positive samples which had very low viral loads. This level of high sensitivity is vital to detecting early-stage pre-symptomatic infections, and late-stage post symptomatic infections, both of which have low viral loads.

### **AnteoBind raw material business increases in volume**

- Continued increase in volume of AnteoBind ordered by Ellume
- Another large order placed by Serum Institute of India
- Regular customers increasing volume and frequency of orders

Luminex polysaccharide research work successful

During the quarter our raw material team focused on a specific conjugation process identified as an issue in the vaccine industry. This issue was initially articulated to us by the Serum Institute of India and subsequently repeated to us by several other organisations. We decided to attempt attachment of a polysaccharide to a Luminex bead in our lab using AnteoBind. This process proved to be successful and is detailed in the paper available on the link below.

<https://www.anteotech.com/wp-content/uploads/2020/10/A0077-Polysaccharide-Conjugation-using-AnteoBind-FINAL-12Oct2020.pdf>

During the coming months we will be using this work as a basis for an outbound marketing campaign and as a platform for developing services to the vaccine industry.

### **ISO 13485 certification achieved**

In achieving ISO-13485 certification, AnteoTech's progression along the PoC value chain to assay developer is complete. AnteoTech will leverage this position by establishing clear and strong differentiating market positions in order to maximise returns to the Company. These include:

- Development of high sensitivity assays that utilise Europium particles activated by AnteoBind.
- Development of tests that satisfy unmet clinical needs and make a material difference in rapid diagnosis.
- Establishment of an Assay Services business unit focused on utilising our raw material, AnteoBind, our assay development conjugation competency and our systems and processes for regulatory approval.
- Focus on leverage generated from more prominent brand and business profile.

\*The AnteoTech Antigen Rapid Test detects the Sars-Cov-2 active virus that causes the disease called COVID-19.

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## 2. Energy

### Energy Business Strategy

The business strategy for the Energy Business is:

- To become a materials supplier through the enhancement of the anodes in Lithium ion batteries by the application of AnteoTech's IP focused on the increased use of silicon in the anodes.
- Focus is on developing applications for the enhancement of silicon composites (using AnteoCoat™) and binder systems for silicon composites (AnteoX™).
- Attracting international collaborations with view to gaining external verification and feedback to support the internal development of products (silicon composites and binder additives/ systems) leading to early adoption of AnteoTech IP.

### Silicon composite testing (1<sup>st</sup> generation)

Earlier in the year we reported Collaborator's 1 and 3 were evaluating 1<sup>st</sup> generation silicon composite. The 1<sup>st</sup> generation silicon composite was designed to demonstrate our ability to produce this active material with attributes including manufacturing processability, enhanced specific capacity and 1<sup>st</sup> cycle efficiency. Both Collaborator 1 and Collaborator 3 completed their evaluations of AnteoTech's 1<sup>st</sup> generation composite material. AnteoTech's silicon composite was able to meet several performance criteria in comparison to both Collaborators' internal silicon benchmarking materials and was able to demonstrate the active materials high capacity attributes with improvements required in relation to long-term cycling stability. These aspects are being enhanced with AnteoTech's 2<sup>nd</sup> generation composite with both Collaborators confirming their interest in evaluating the new composite version once available.

- Collaborator 1
  - Collaborator 1 confirmed the suitability of particle specifications (size and morphology) along with good processability for the integration into their anode
  - Further, the composite material exceeded Collaborator 1's internal benchmark material in relation to the capacity the material was able to deliver
- Collaborator 3
  - Collaborator 3 also confirmed the suitability of particle specifications (size and morphology) alongside good processability for the integration into their anode
  - Further, the composite material supplied to Collaborator 3 demonstrated higher initial coulombic efficiency compared to their own silicon material

AnteoTech's Generation 2 composite is well progressed and is aimed at improving cycle stability while further enhancing first cycle efficiency and is planned for release to collaborator's in Q4/ 20.

### Cross-linker additive (CLA) testing

The cross-linker additive program has continued to gather momentum during the last reporting period, in relation to both external and internal testing of AnteoTech's CLA compounds. Our objective is to discover optimal formulations that enhance binder performance via the addition of cross-linking attributes provided by our cross-linker additive. Many of our collaborators have commercial binder products currently used in the Li ion battery industry and therefore the discovery of a formulation, with our collaborators, that improves anode performance will provide an immediate market opportunity.

Collaborator 1 – CLA test outcome (1<sup>st</sup> generation)

- Collaborator 1 has completed a limited scope evaluation of AnteoTech's 1<sup>st</sup> generation CLA sample that was provided in May 2020.

- The Company has evaluated the CLA with a low capacity anode system of 550mAh/g
- The outcome of this study confirmed that AnteoTech's CLA compounds can be directly integrated into existing slurry fabrication processes without adjustments to the process, which represents a significant milestone for this project
- The study further found a significant decrease in direct current resistance of the silicon containing anodes after 100 cycles compared to the Collaborators own benchmark.
- The CLA led to a marginal improvement in capacity retention, a marginal increase in anode swelling and overall decreased peel strength when paired with the Collaborator's proprietary binder system, aspects which AnteoTech is seeking to address with future CLA versions.
- The learnings from this interaction have proven invaluable and facilitated the adjustment of the CLA chemistry to enhance its performance
- Samples of the 2<sup>nd</sup> generation CLA are now available for further testing by partners

#### Collaborator 5 – CLA testing with proprietary anode system

- Evaluation of AnteoTech's CLA compound is still underway with Collaborator 5 agreeing to expand and deepen the evaluation program
- Results are expected in December

#### Collaborator 8 – CLA testing with proprietary binder

- Collaborator 8 supplied AnteoTech with a sample of their proprietary binder system designed for use with high silicon content containing anode systems.
- This gave AnteoTech the chance to optimize the interaction between a 2<sup>nd</sup> generation CLA and the binder. The test demonstrated an up to 9% higher starting capacity and an up to 20% higher capacity at cycle 100, for a 70% micro-silicon containing anode when AnteoTech's CLA is used.
- The results were reported back to Collaborator 8 in October with testing of the CLA compound by Collaborator 8 expected as the next step.

### Technical development

In response to the firsts set of external test results, AnteoTech has developed a 2<sup>nd</sup> generation CLA which will improve on the outcomes of this initial round of testing. This 2<sup>nd</sup> generation CLA demonstrates significantly delayed reactivity leading to more homogeneous cross-linking and heat-activation properties. The internal development focus has been on demonstrating the performance of the CLA paired with various silicon materials and common binders for high silicon content anodes. Test results demonstrated that:

- The CLA shows drastically improved capacity retention for a 70% micro-silicon anode when paired with NaAlginate.
- The CLA shows a clear trend in facilitating improved capacity retention for an 80% silicon oxide anode when paired with LiPAA or NaAlginate.
- AnteoTech's CLA compounds can be paired with several, chemically different, active materials and binders which represents versatility and applicability across a broad footprint of the anode binder market.
- These results are currently undergoing integrity testing to ensure the reproducibility of these studies in the hands of our current and future collaborators.

### Key Objectives for the quarter ending 30 December 2020 (Q4)

Q4 will be the most important quarter of activity for the Company this year and will be dominated by our work on commercialising our COVID-19 Antigen Rapid Test:

- Commencement of clinical trials for the AnteoTech COVID-19 Antigen Rapid Test.
- Locking in manufacturing contracts for the AnteoTech COVID-19 Antigen Rapid Test.
- Completing partnership discussions for distribution of the AnteoTech COVID-19 Antigen Rapid Test in key markets.
- Completing the Axxin reader configuration and detection settings for the AnteoTech COVID-19 Antigen Rapid Test.
- Continued collaboration work to discover useful formulae to exploit the cross-linking effect of our CLA product.
- Continued development of the 2<sup>nd</sup> generation silicon composite.

The Company looks forward to updating shareholders on all material developments and operational progress.

### **Cash**

At the end of the quarter AnteoTech had approximately A\$2.890 million of cash on hand, compared to \$3.215 million at the end of the June quarter.

The Company expects a further \$3.5 million cash (before costs) to be received in the next five weeks from the exercise of the underwritten \$0.02 options expiring on 6 December 2020 (ASX code: ADOO).

### **ASX Listing Rule 4.7C disclosure**

\$57,000 was spent during the quarter to Related Parties, as reported in Item 6.1 of the ASX Appendix 4C (Quarterly Cash Flow Report). This comprises directors' fees.

This announcement has been approved by the Board.

### **ABOUT AnteoTech GROUP – AnteoTech Ltd (ASX:ADO)**

AnteoTech is a surface chemistry company with Intellectual Property ("IP") in its core technology product groups AnteoCoat™, AnteoBind™ and AnteoRelease™. The Company's purpose is to create shareholder value by identifying and solving important global industry problems by providing unique value-add solutions for its customers. Customers operate in the life sciences, diagnostics, energy and medical devices markets.

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