

Industry Presentation & New Technical Data

23rd Advanced Automotive Battery Conference

BRISBANE, AUSTRALIA, December 13th 2023: AnteoTech Ltd (ASX: ADO) (**AnteoTech** or the **Company**) is pleased to provide a copy of the podium presentation that is being delivered by Manuel Wieser, Chief Technology Officer at the Advanced Automotive Battery Conference in San Diego, California, on Tuesday 12 December 2023.

About the 23rd Advanced Automotive Battery Conference

The Advanced Automotive Battery Conference was founded 23 years ago and is a leading industry event held annually in the United States. The Conference focuses on automotive battery technology the underlying technical and business issues impacting vehicle electrification worldwide. This year the event will be held in San Diego over three days, bringing together OEM companies, their supply chain and academic researchers, to discuss the key challenges they face in creating better batteries and share their technological advancements.

<https://www.advancedautobat.com/Us>

AnteoTech Presentation & New Technical Data

In a conference session dedicated to the Silicon Anode, Manuel Weiser, will provide AnteoTech's Presentation titled "**Binders Vs. Structural Additives: The key to maximum silicon anode performance**" – **refer attached**. This Presentation focuses on new strategies to optimise the amount of inactive materials in a battery anode, to drive performance and cost benefits, through the use of structural additives such as AnteoTech's binder additive, Anteo X™.

In addition to highlighting the performance properties of Anteo X, the Presentation includes a Case Study with new technical data on silicon-carbon composite anode optimisation. This Case Study relates to a Project in anode optimisation and development for a potential customer, undertaken by AnteoTech in its Brisbane laboratories in mid-2023. The key deliverables for the Project requested by this party were:

- reduction in the materials input cost to the anode through optimisation of anode formulations;
- increasing the performance of the anode as measured in increased cycling ability.

The Project objective was the reduced cost per kWh for the battery, by successfully attaining both deliverables. AnteoTech was able to achieve the following Project outcomes (refer slides 14-16 of Presentation) by optimising the anode formulation and the addition of Anteo X:

- 10% increase in capacity retention;
- 15-fold reduction in the usage of Carbon Nano Tubes or CNT in the anode configuration

The significant reduction in the use of Carbon Nano Tubes represents a material cost saving for companies who are utilising CNT in lithium ion batteries. The estimated cost savings when applying the optimised formulation to an electric vehicle battery are shown in slide 17 of the Presentation and are estimated to be greater than US\$500/anode. Other key take aways from the Project are that Anteo X and Carbon Nano Tubes work as a structural additive by forming networks and providing connectivity. This enables Carbon Nano Tubes to be further optimised by integrating Anteo X into the anode formulation of a battery.

Over the course of the three-day conference, AnteoTech will hold a number of industry and partnering meetings.

AnteoTech CEO David Radford stated "*We are pleased to be presenting again at this leading industry event which allows us the opportunity to share our progress and this new technical data, with potential customers, partners and automotive battery thought leaders. The successful outcomes from the Project demonstrates our ability to meet the client's objectives with our technology and optimisation expertise.*"

This will help to underpin AnteoTech's capabilities and expertise in the silicon anode market. To that end, we are currently in active talks with a number of lithium-ion battery parties in line with our focus on executing commercial partnerships."

In parallel, the Company continues to develop and validate the scale up production of its proprietary Ultra High Silicon anode, that contains more than 70% silicon. This anode is intended to be evaluated by a range of companies such as electric vehicle manufacturers, battery factories and micro-battery manufacturers. Current internal testing by AnteoTech has validated the Ultra High Silicon anode to 650 cycles with an 80% capacity retention.

About Anteo X™

Anteo X™ is a world-leading development from the Clean Energy Technology division at AnteoTech. It is a proprietary cross-linker additive that reinforces battery binders in silicon-containing anodes and boosts the performance of these nodes. This results in increased capacity, an extended lifecycle and superior mechanical properties enabling high-energy lithium-ion batteries to be manufactured more cost-effectively, lighter and more compact.

This announcement has been authorised for release by the Managing Director of AnteoTech Ltd.

- ENDS -

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For further information, please check our website www.anteotech.com

About AnteoTech - AnteoTech Ltd (ASX:ADO)

AnteoTech is a revenue-stage company that provides solutions for the clean energy and life sciences markets using our proprietary applied materials technology. In the rapidly growing clean energy market, our lead product Anteo X™, has been proven to provide significant improvement in anode performance and the Company has partnered with global suppliers to the lithium-ion battery manufacturing industry, with first revenues targeted for late 2023 from our Brisbane based commercial plant. The portfolio includes a proprietary high silicon anode, made with unrefined silicon which offers advantages of size, weight and cost. The Life Sciences division services the Point-of-Care and In vitro diagnostics markets; from global diagnostics companies to technology developers. The unique characteristics of AnteoBind™ provides advantages in bioconjugation to rapidly speed up testing procedures and improve accuracy.

AnteoTech - Social Media Policy

AnteoTech is committed to communicating with the investment community through all available channels. Whilst ASX remains the prime channel for market sensitive news, investors and other interested parties are encouraged to follow AnteoTech on Twitter ([@AnteoTech_](https://twitter.com/AnteoTech_)), LinkedIn. Subscribe to AnteoTech Latest News emails - visit our website at www.anteotech.com and subscribe to receive our email alert service.

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This Announcement may contain forward-looking statements, including estimates, projections and other forward-looking information (**Estimates** and **Projections**). Forward-looking statements can generally be identified by the use of forward-looking words such as "expect", "anticipate", "likely", "intend", "should", "could", "may", "predict", "plan", "propose", "will", "believe", "forecast", "estimate", "target", "outlook", "guidance" and other similar expressions within the meaning of securities laws of applicable jurisdictions and include, but are not limited to, indications of, or guidance or outlook on, future earnings or financial position or performance of AnteoTech. The Estimates and Projections are based on information available to AnteoTech as at the date of the Announcement, are based upon management's current expectations, estimates, projections, assumptions and beliefs in regards to future events in respect to AnteoTech' business and the industry in which it operates which may in time prove to be false, inaccurate or incorrect. The Estimates and Projections are provided as a general guide and should not be relied upon as an indication or guarantee of future performance. The bases for these statements are subject to risk and uncertainties that might be out of control of AnteoTech and may cause actual results to differ from the Announcement. No representation, warranty, or guarantee, whether express or implied, is made or given by AnteoTech in relation to any Estimates and Projections, the accuracy, reliability, or reasonableness of the assumptions on which the Estimates and Projections are based, or the process of formulating any Estimates and Projections, including that any Estimates and Projections contained in this Announcement will be achieved. AnteoTech takes no responsibility to make changes to these statements to reflect change of events or circumstances after the release.



BINDERS vs. STRUCTURAL ADDITIVES: THE KEY TO MAXIMUM SILICON ANODE PERFORMANCE

Manuel Wieser
Chief Technology Officer

12th of December 2023

23rd AABC - San Diego, California

DISCLAIMER

AABC 2023 – San Diego, California

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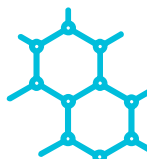
ANTEOTECH – CLEAN ENERGY TECHNOLOGY DIVISION

Commercializing technologies that enhance the storage and management of energy across multiple sectors

Established and growing business



Proprietary technology platform



Developing solutions for high impact sectors



Publicly listed company (ASX)

- Highly experienced leadership team delivering commercial outcomes
- Based in Brisbane, Australia

CET - Lithium-ion battery technologies

- Anteo X™ binder additive
- Silicon anode formulation know-how
- Ultra high silicon anode technology

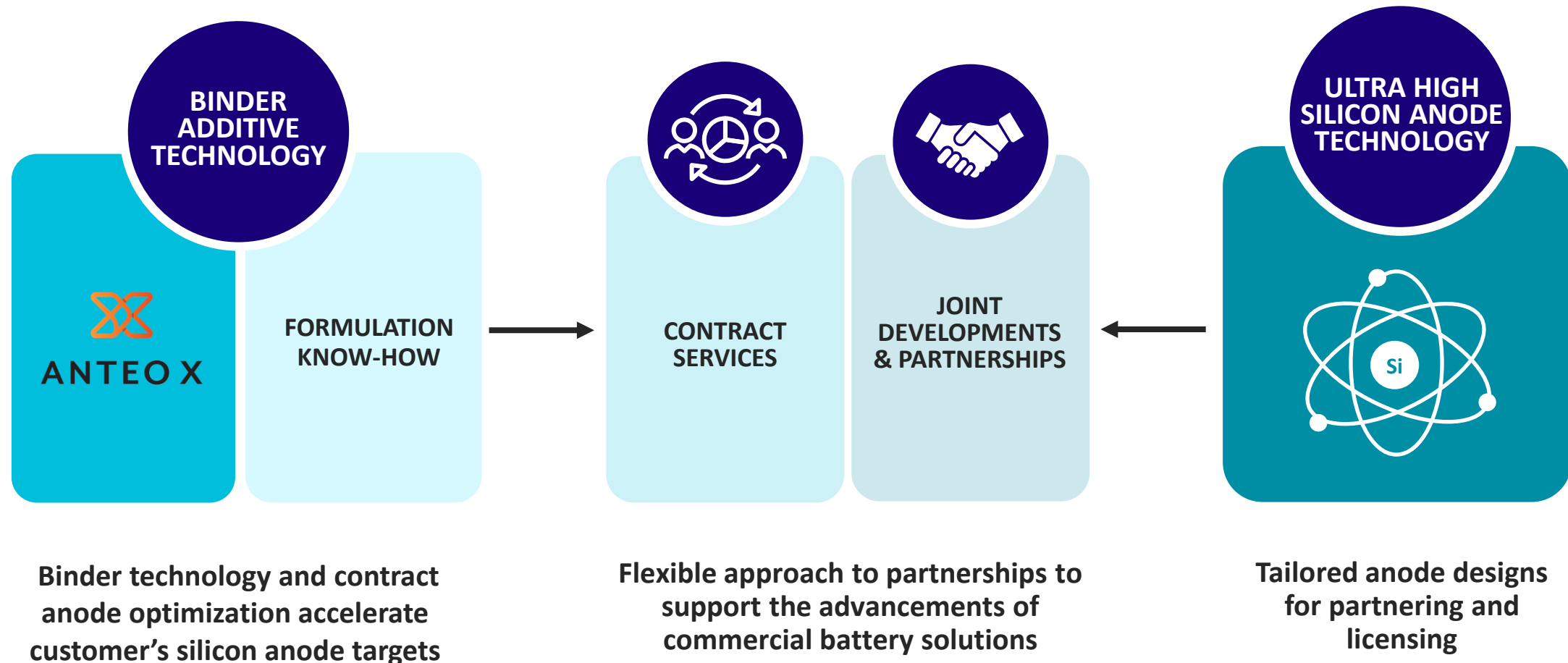
CET - Capabilities

- Deep experience in developing silicon anode designs of >20wt% silicon active material
- Performance optimization of silicon anode designs
- Anteo X production facility (early 2024)



TECHNOLOGY PLATFORMS AND PARTNERSHIPS

Combining AnteoTech's silicon enabling products and anode design know-how to create pathways to smaller, lighter and cheaper lithium-ion batteries



Anteo X™

Binder additive for high silicon anodes

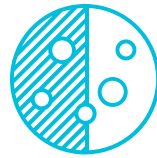


THE SILICON CHALLENGE FROM A BINDER PERSPECTIVE

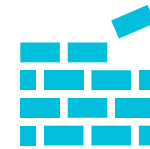
Binders form an integral part of electrodes, and act by facilitating



Particle dispersion



Electrode homogeneity



Structural integrity



Conductive network

(1) More silicon in the anode generally means more expansion and contraction of electrode structure

(2) This stress largely falls on the binder to compensate

➤ **To advance silicon anode technology we also need advanced binders!**

➤ **We also need advanced anode formulation know-how to optimize performance and cost!**

ANTEO X™ BINDER ADDITIVE TECHNOLOGY

Anteo X cross-links the battery binder and creates a uniform 3D network structure in the electrode improving electrochemical and mechanical performance



Cycle life

Extended cycle life for high silicon content anodes
Can reduce structural expansion of the anode



Ease of use

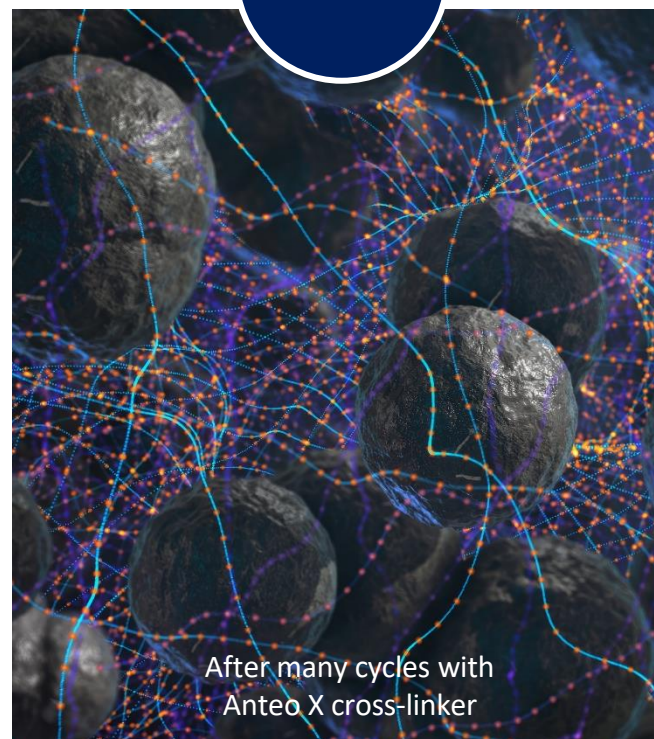
Aqueous solution (non-hazardous)
Easily transported & stored
Broad binder compatibility
Integrates into electrode manufacturing process



Cost optimization

Can help to optimize inactive material fraction
Minimize CNT content (impacts \$/Wh)
Reduce binder content (impacts \$/Wh)

WITH
ANTEO X



After many cycles with
Anteo X cross-linker

WITHOUT
ANTEO X



After many cycles with
conventional anode

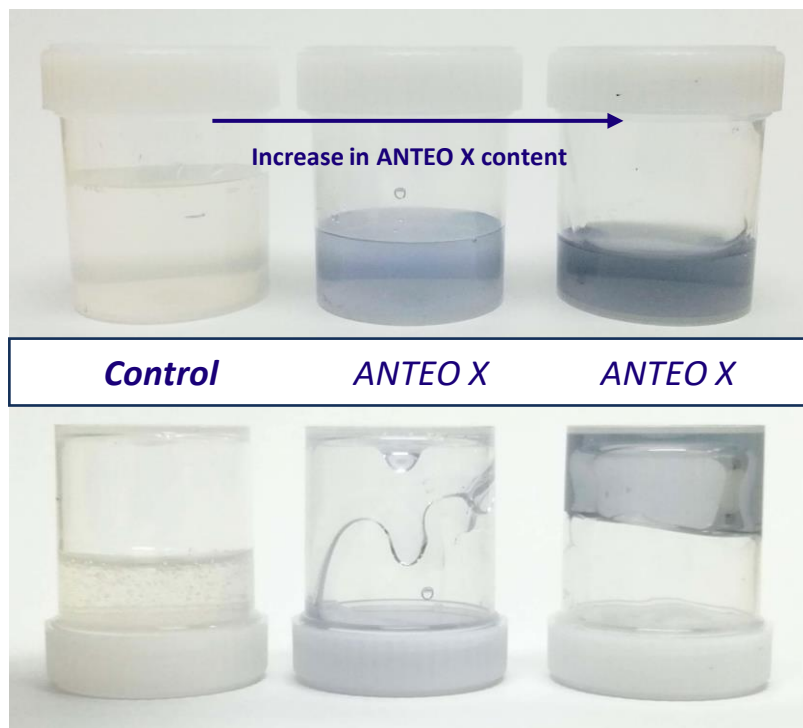
ANTEO X™ PAIRS WITH MULTIPLE BINDER CHEMISTRIES

Anteo X cross-links the battery binder and creates a uniform 3D network structure in the electrode

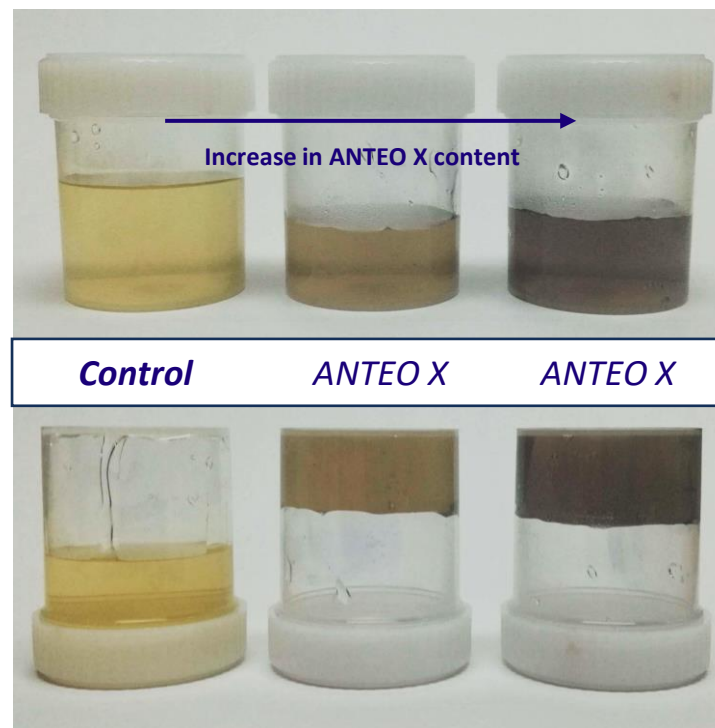
➤ **Demonstrated cross-linking effect with**

- 1) a wide range of conventional binder types (CMC, PAA, Alginate, etc.)
- 2) proprietary binder chemistries (PAA co-polymers)
- 3) conventional and modified SBR binder chemistries

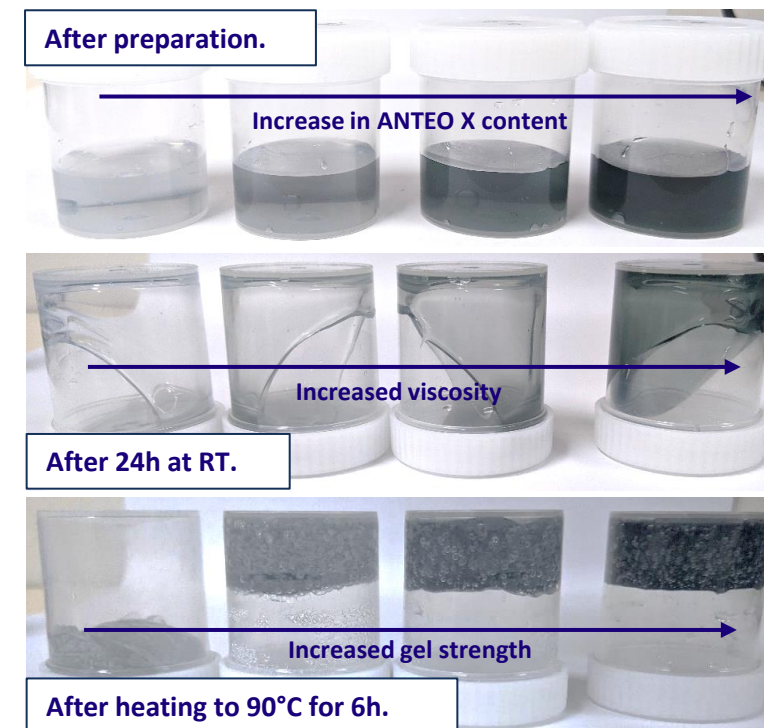
LiPAA (1,250kDa)



NaAlginate



NaCMC

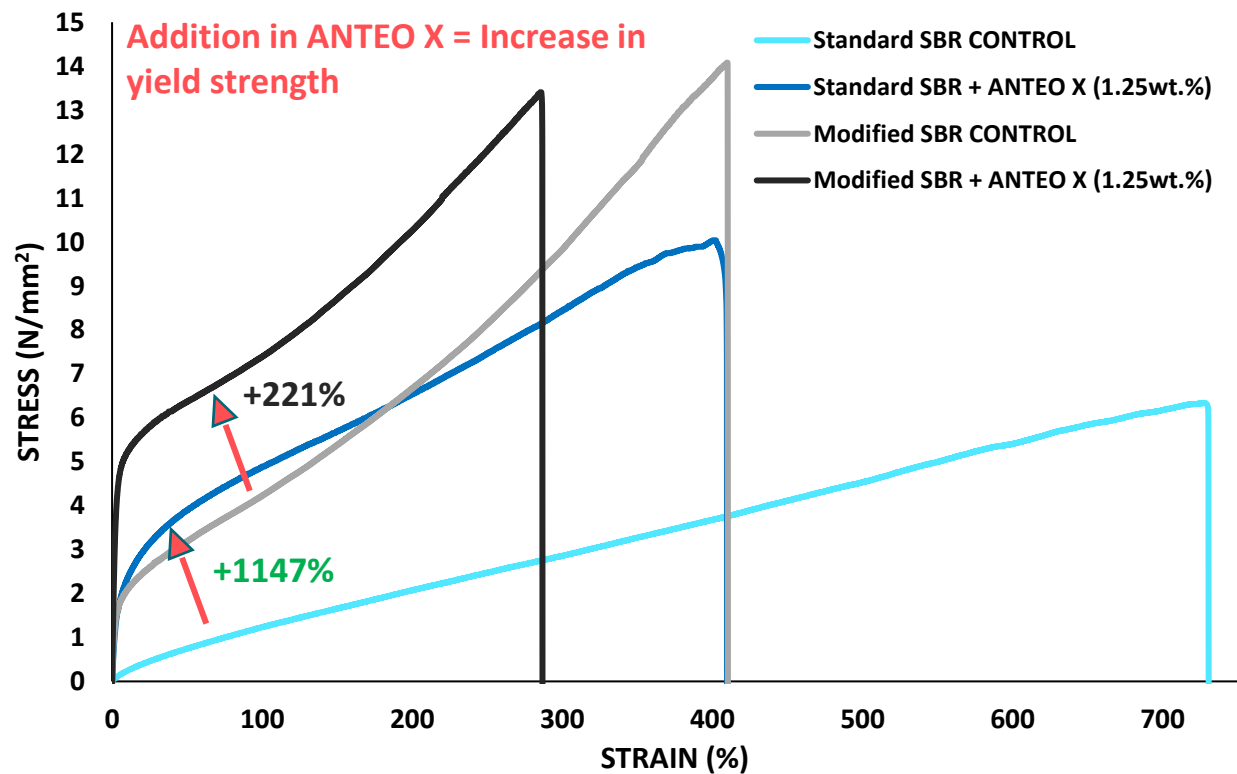


ANTEO X™ PAIRS WITH MULTIPLE BINDER CHEMISTRIES

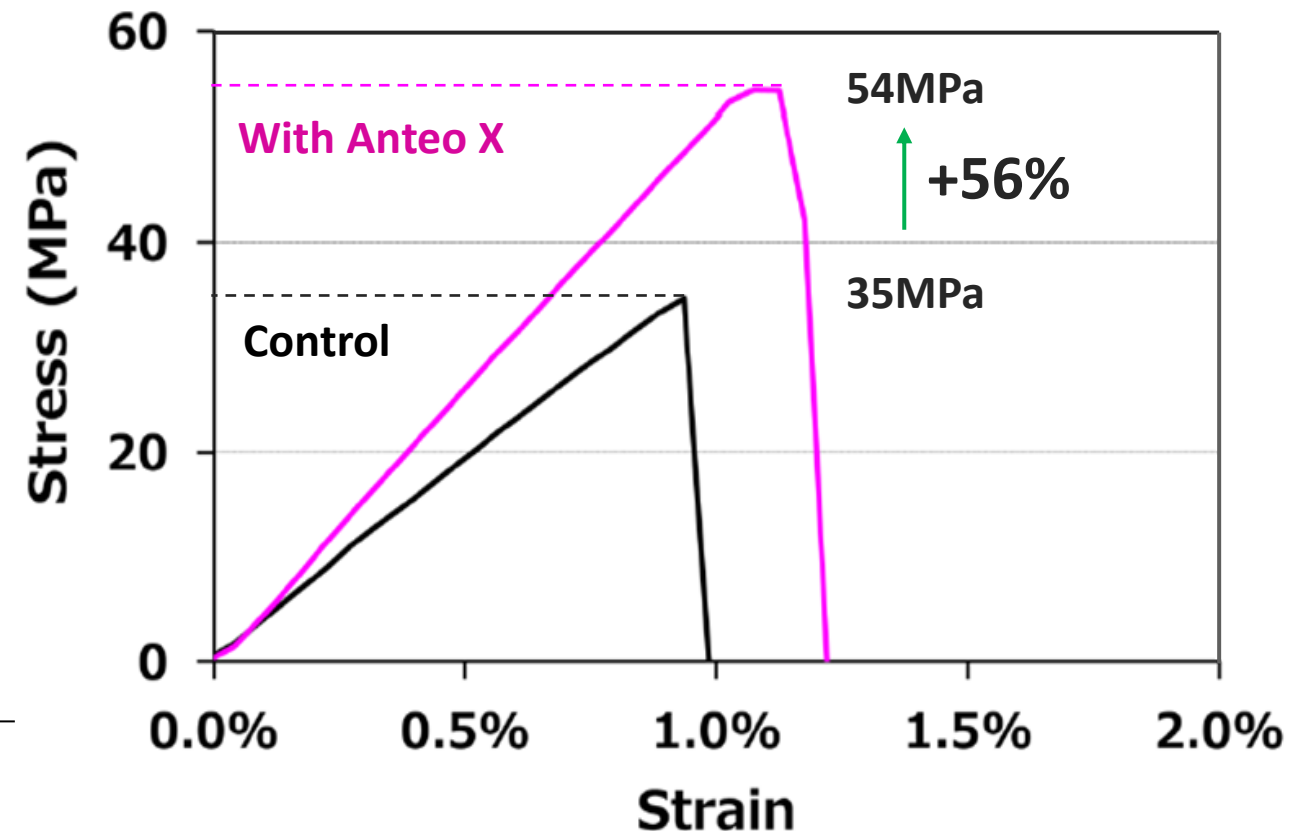
ANTEO X effectively cross-links commercial SBR and PAA co-polymer binders

- (1) Substantial improvement in yield strength
- (2) Anteo X turns graphite SBR binder into a silicon anode binder and improves strength of modified SBR further
- (3) Ability to heavily tailor stress-strain characteristics of water-based binders

CONVENTIONAL & MODIFIED SBR



Tensile strength test

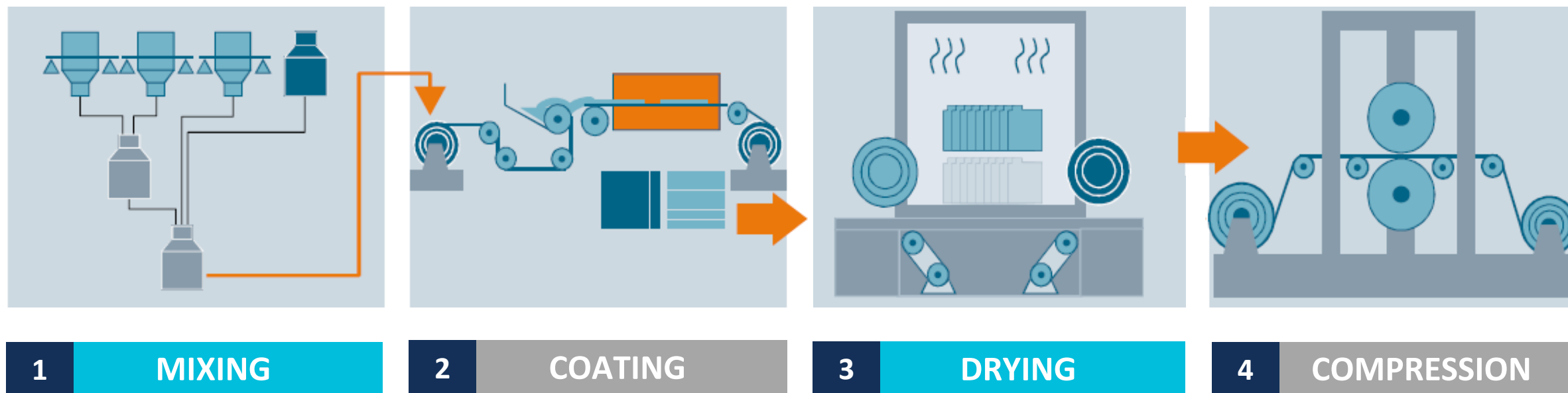


ANTEO X™ BINDER ADDITIVE TECHNOLOGY

Anteo X designed with the intent to not change any parameters on existing manufacturing processes

- (1) Integrates seamlessly with Mixing Step (1) and activates during Drying Step (3)
- (2) Added to the process as the final component

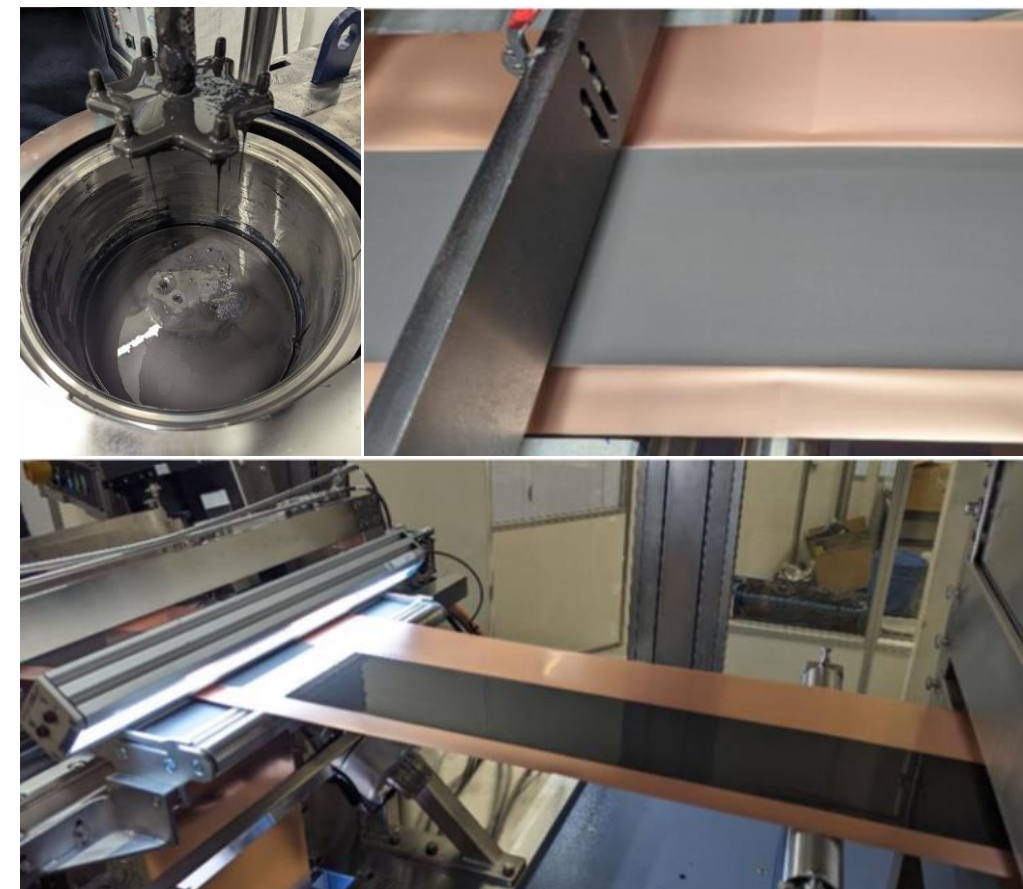
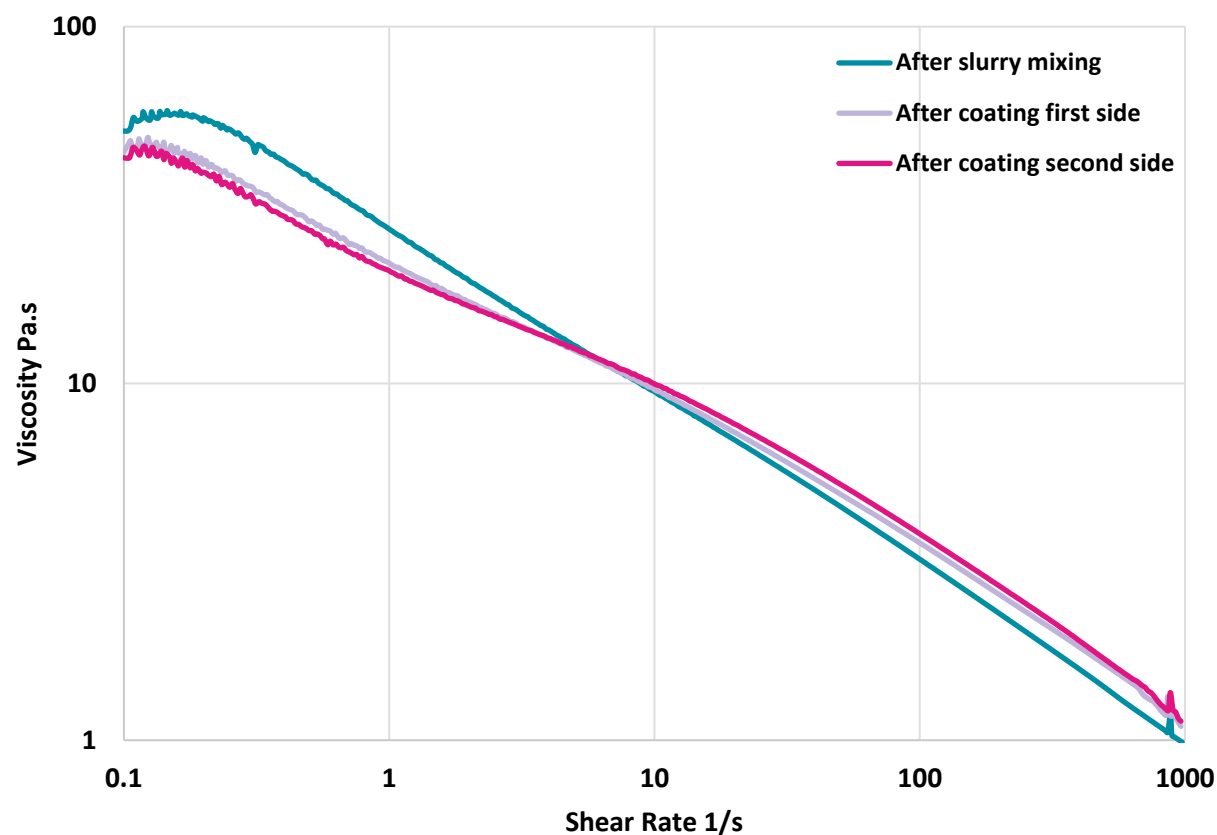
ADDITION of 



ANTEO X™ BINDER ADDITIVE TECHNOLOGY

Anteo X designed for ease of integration into existing manufacturing processes

- (1) Confirmed scalability of Anteo X use in larger-scale manufacturing process
- (2) Stable pot-life and slurry rheology throughout process duration



Silicon-carbon composite and Graphite anode optimization

Case study

SILICON ANODE — ACTIVE % VS. INACTIVE %

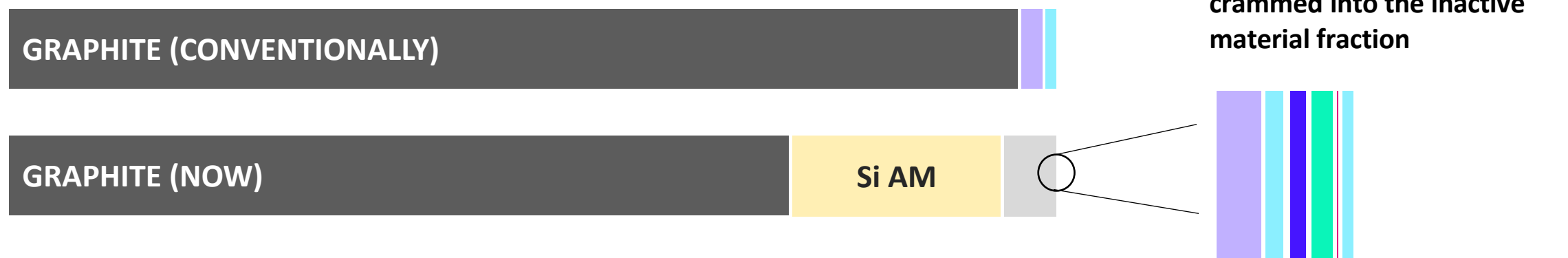
Deep experience and capabilities in silicon anode development and designs

Optimising the inactive material fraction matters

- Optimisation of <5wt.% of the anode composition can create substantial performance and cost advantages
- Incorporation of silicon AMs into anodes triggered the uptake of advanced components for the inactive material fraction
- Provides companies with more levers to improve performance but also makes formulation development more time-consuming

Partnering for acceleration

- Expertise in formulation development across range of binders and conductive/structural additives
- Anteo X™ binder additive technology improves silicon integration and stabilisation
- Flexible approach to partnerships to support the advancements of commercial battery solutions

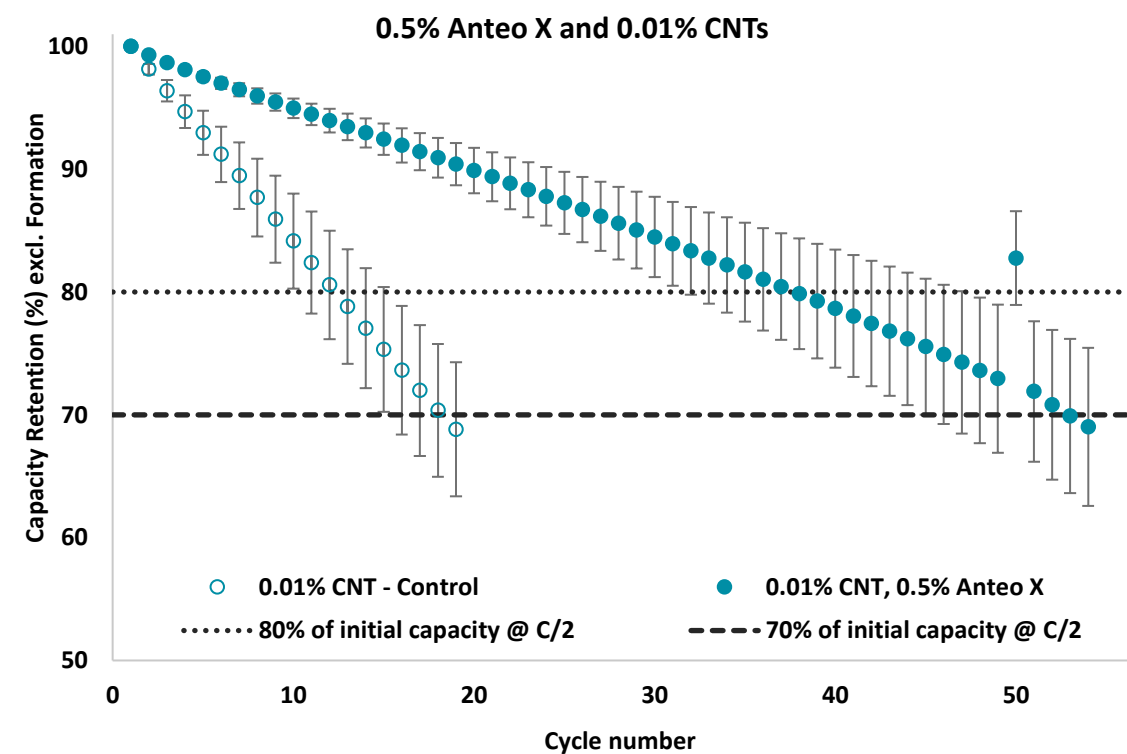
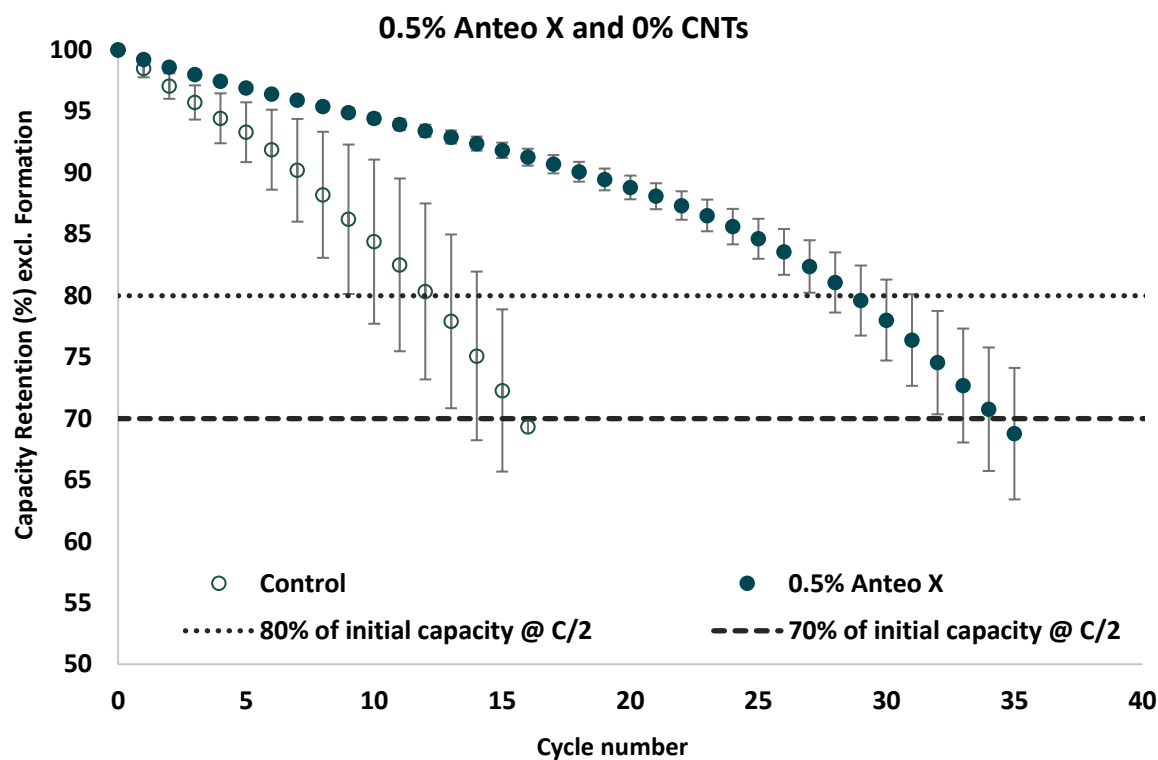


SILICON CARBON COMPOSITE ANODE

Clear impact of Anteo X™ addition on silicon anode performance

(1) Baseline experiment to evaluate response of anode system to the change in one parameter

- Anode coating capacity at C/2: ~620 mAh/g paired with NCM532 cathode: 3.8 mAh/cm²
- Binder type: CMC/SBR
- Total binder: 3%

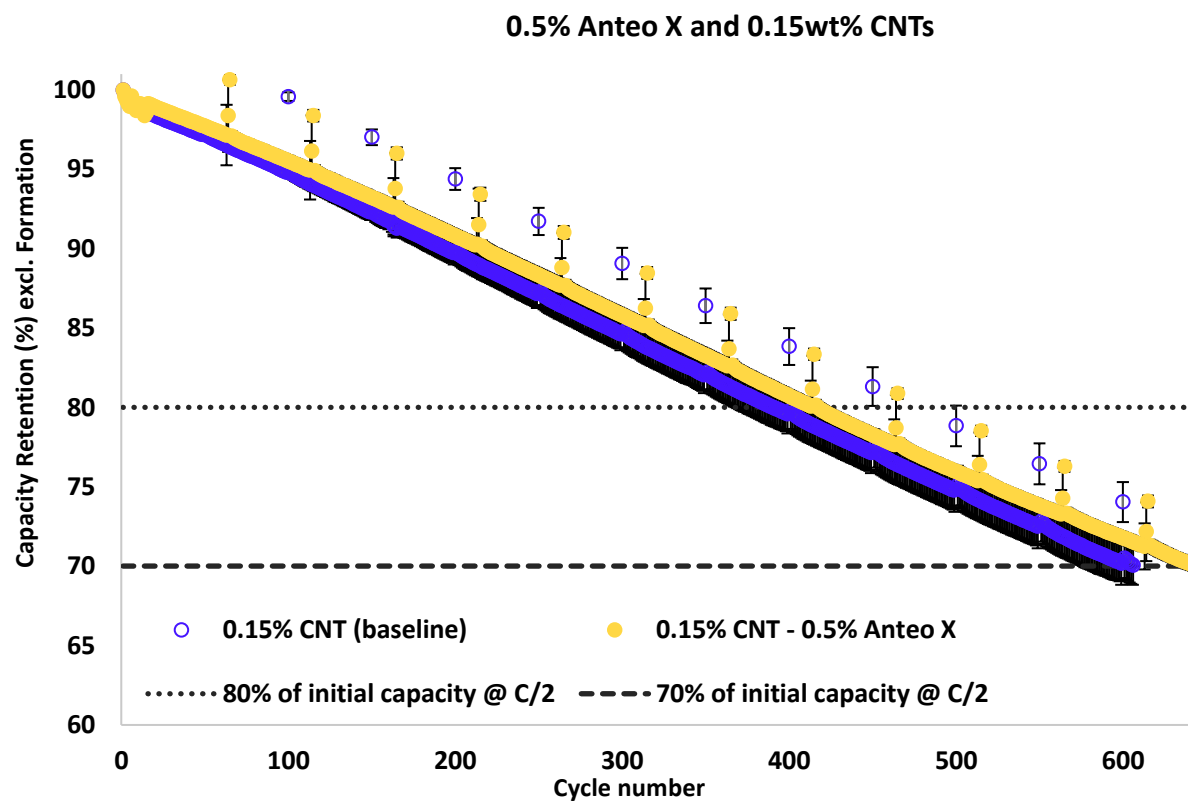
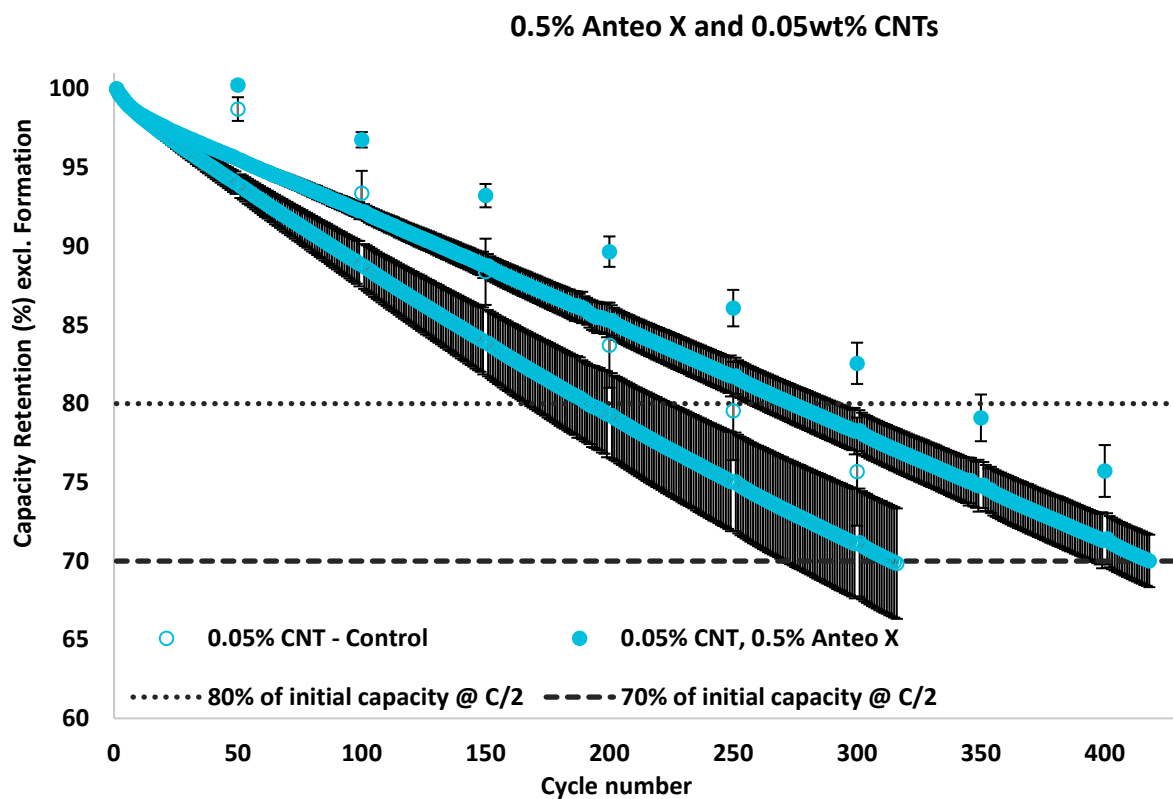


SILICON CARBON COMPOSITE ANODE

Clear impact of Anteo X™ addition on silicon anode performance

(1) For the same anode configuration, the CNT content was increased to 0.05% and 0.15%

- 0.05% CNT: Addition of Anteo X increased capacity retention by **35%** at 80% capacity retention
- 0.15% CNT: Addition of Anteo X increased capacity retention by **7%** at 80% capacity retention

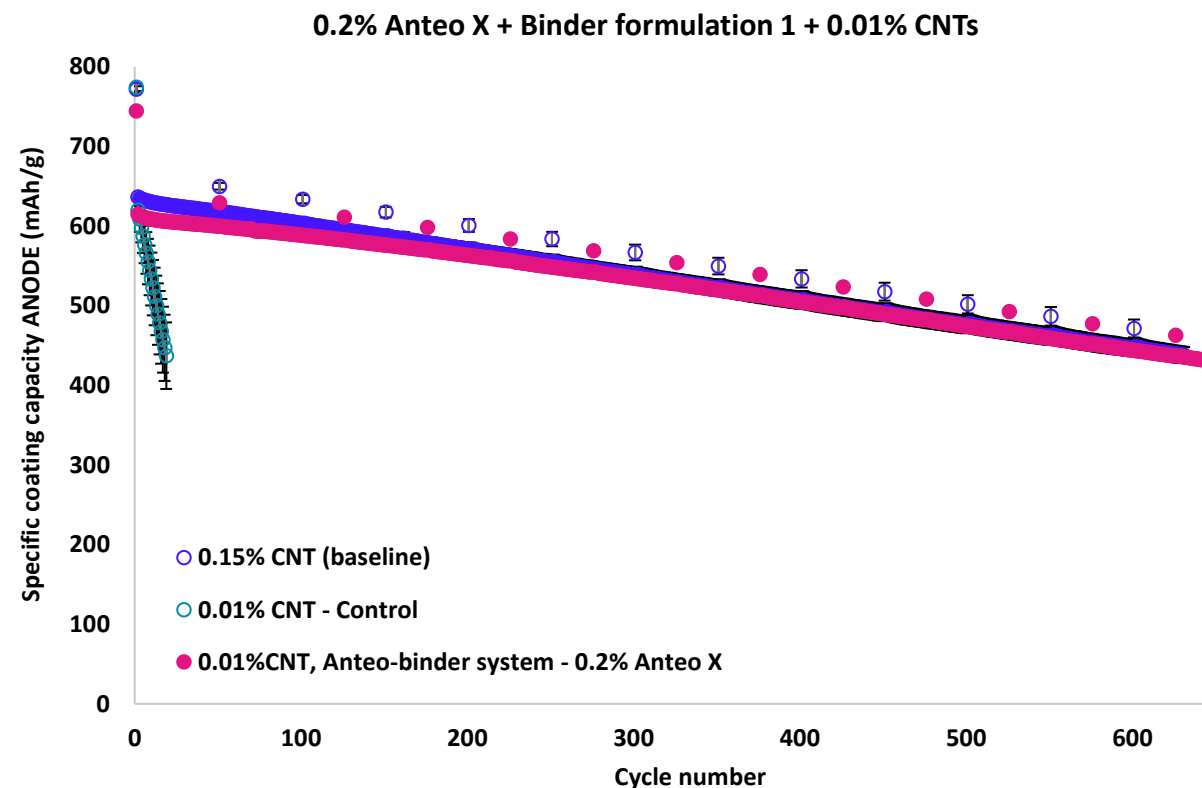
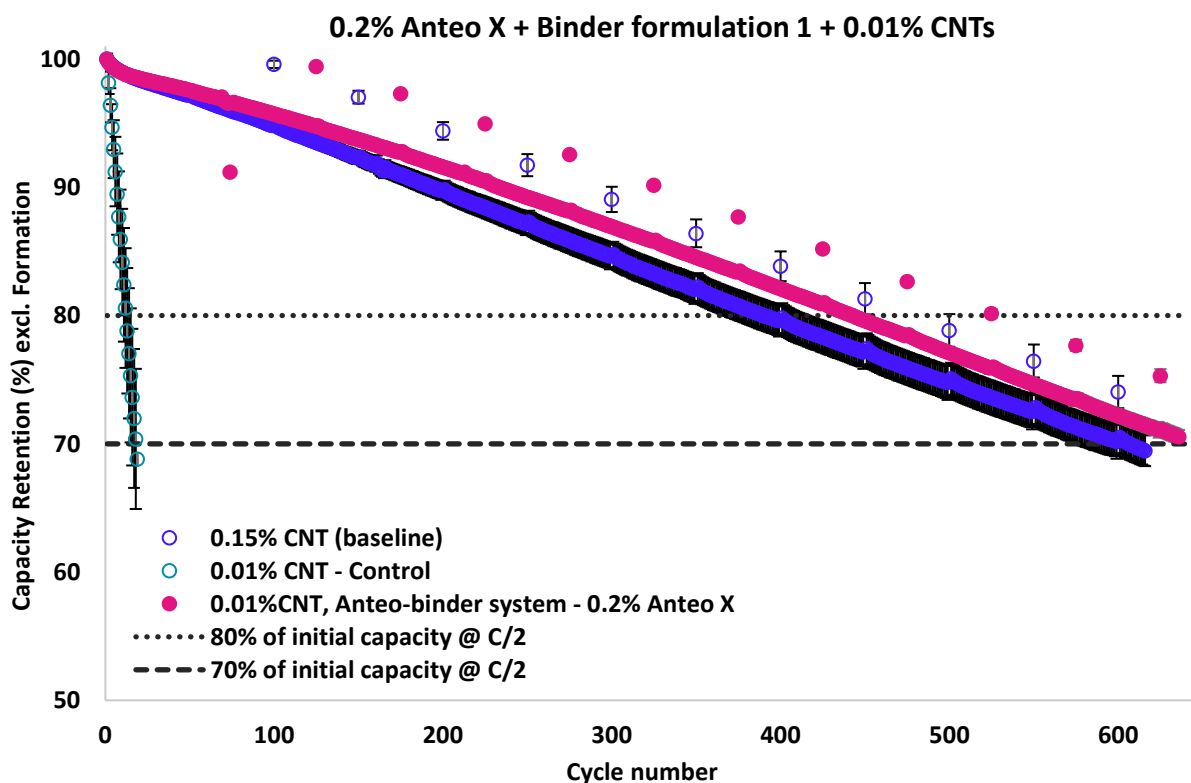


SILICON CARBON COMPOSITE ANODE

Clear impact of Anteo X™ addition on silicon anode performance

(1) Maximum performance plus potential cost savings enabled by balanced binder composition paired with Anteo X

- **10%** difference in capacity retention at cycle 440
- **15-fold** reduction in CNT content while increasing anode performance



ECONOMICS OF THE INACTIVE MATERIAL FRACTION (IAF)

Potential cost savings by optimizing the inactive material fraction of the anode

Starting position

0.15% CNTs

0% Anteo X

BASELINE

+ % Binder/Carbon

New position

0.01% CNTs

0.20% Anteo X

OPTIMISED

+ % Binder/Carbon

Estimate of impact on EV battery cost

80 kWh batter pack

993 \$US of IAF cost per car (starting position)

404 \$US of IAF cost per car (new position)

Potential savings TOTAL per car: **+589 \$US**

- 59% in costs

- 93% of CNTs

ANTEO X™ – SUMMARY & COMMERCIALIZATION

Binders, Anteo X and CNTs work together to achieve superior performance and cost metrics



Binders as well as structural additives play critical roles in enabling silicon anode performance



Anteo X and CNTs both work as structural additive by forming networks and providing connectivity



Anteo X can be used to optimize the amount of CNTs can in the anode formulation



Anteo X production commencing in 2024



Scalable volumes from 20,000L to 80,000L p.a.



Suitability for roll-to-roll coating processes demonstrated



Stable slurry rheology with 7+ days possible



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