AnteoTech

ULTRANODE™ HIGH SILICON ANODE TECHNOLOGY

ULTRANODE

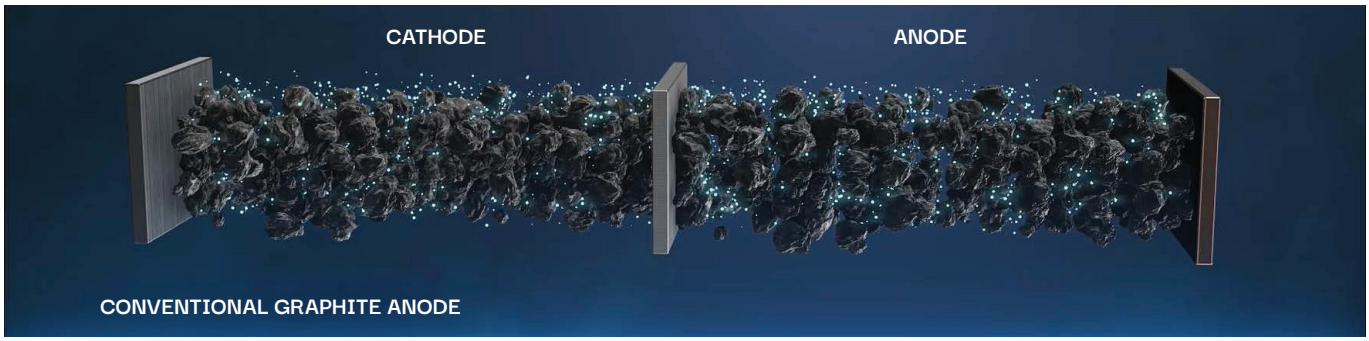
- AnteoTech's Advanced Battery Technologies (ABT) Division has developed a high silicon anode, allowing for Si active material contents of 70%-95%, replacing graphite
- AnteoTech's innovative use of Si as the anode's active material targets more than 30% increase in energy density compared to high energy graphite battery cells
- AnteoTech's Ultranode™ technology uses commercially available, cost-effective silicon materials
- The Ultranode™ technology generates more than 3x times thinner anodes compared to conventional graphite anodes, making anodes and batteries smaller and lighter
- Initial coulombic efficiency (ICE) of 90%+ achieved (full cells)
- Easily incorporated into conventional lithium-ion battery manufacturing processes

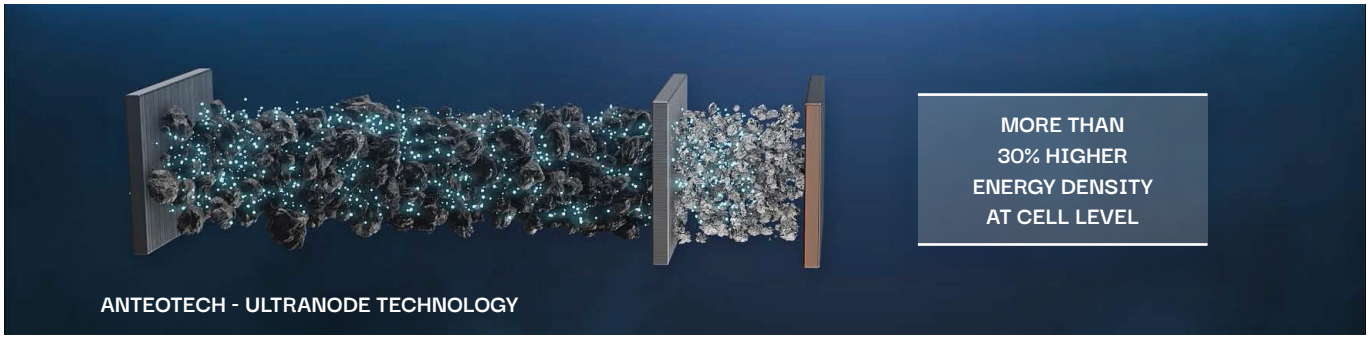
* Ultranode™ (based on large-form factor cell model relative to high energy graphite reference cell)

** US$/kg of Si active material (based on publicly available reports)

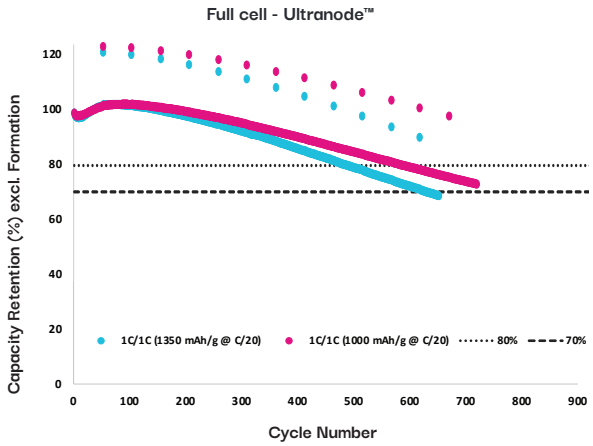
Source: Esource 2024

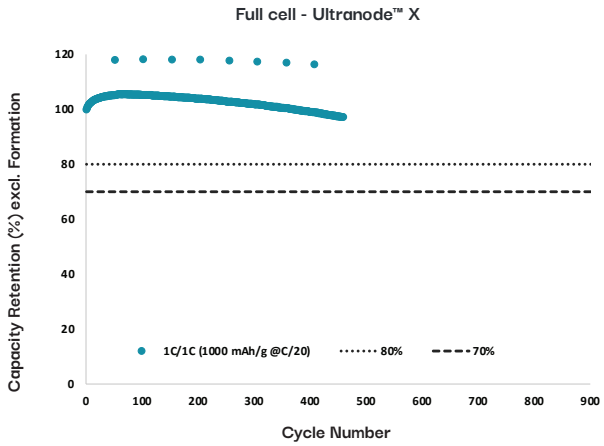
AnteoTech's Ultranode™ Technology targets energy density improvements of more than 30%





AnteoTech's Ultranode™ technology shown to deliver more than 700 cycles





Ultranode™

- Easily tuneable anode capacities from 600mAh/g - 2,000mAh/g
- Achieves up to 700 cycles at 80% at specific capacity levels
- Targets high energy and low cycle life applications and medium energy/cycle life applications
- Scalable, low-cost silicon anode technology
- Available for sampling upon request

- Anode coating capacity:
  - 1350 mAh/g at C/20
  - 980 mAh/g at 1C
  - 1000 mAh/g at C/20
  - 706 mAh/g at 1C
- Cathode material: NMC 532
- Cathode area capacity: 3.8 mAh/cm2
- Electrolyte: LiPF6 with FEC
- C-rate: 1C/1C Charge/Discharge
- Voltage window: 4.2V- 3.0V
- Temperature: 25˚C
- Initial coulombic efficiency: 88-90%

Ultranode™ X

- Development to achieve >1,000 cycles in progress
- Targets medium/high-capacity applications with high cycle life
- Current technology expected to exceed the 800 cycles at 80% mark
- Proprietary technologies and know-how to maximise cycle life
- Excellent fit for price sensitive yet demanding applications
- Partnership opportunities available

- Anode coating capacity:
  - 1080 mAh/g at C/20
  - 740 mAh/g at 1C
- Cathode material: NMC 532
- Cathode area capacity: 3.8 mAh/cm2
- Electrolyte: LiPF6 with FEC
- C-rate: 1C/1C Charge/Discharge
- Voltage window: 4.2V- 2.85 V
- Temperature: 25˚C
- Initial coulombic efficiency: 90%

Applications

E-micromobility

3C Markets

eVTOL

Electric Vehicles

Commercial Pathway

STAGE 1
Proof of Concept & Sampling

- Customer requirement specification
- Quote for concept study or sampling
- Sampling of electrode sheets or rolls
- Anode loadings matched to requirements

STAGE 2
Initial Customer Evaluation

- Evaluation and testing support
- Feedback and optimisation targets
- Project plan & cost of prototype study
- Quote for prototyping study

STAGE 3
Prototyping

- Optimisation to meet target requirements
- Scale-up support
- Functional samples
- Quote for product price and/or license

STAGE 4
Technology Transfer

- Project wrap-up
- Data & product transfer
- Licensing arrangements
- Implementation support

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Collaborate with us. At AnteoTech, innovation is in our DNA. That's why we are on a mission to facilitate silicon uptake across the global lithium-ion battery (LiB) market

Partner with Anteotech to develop the next generation of high-silicon anodes and power the future of high-energy LiB technology

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LEADING IN HIGH SILICON TECHNOLOGY

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