

Cabot Battery Materials

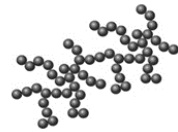
Matt Wood

Vice President, Strategy & Marketing

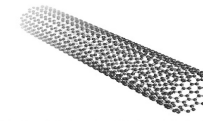
February 20, 2024

CONDUCTIVE ADDITIVES IN TODAY'S BATTERIES...

Conductive Additives (CAs)



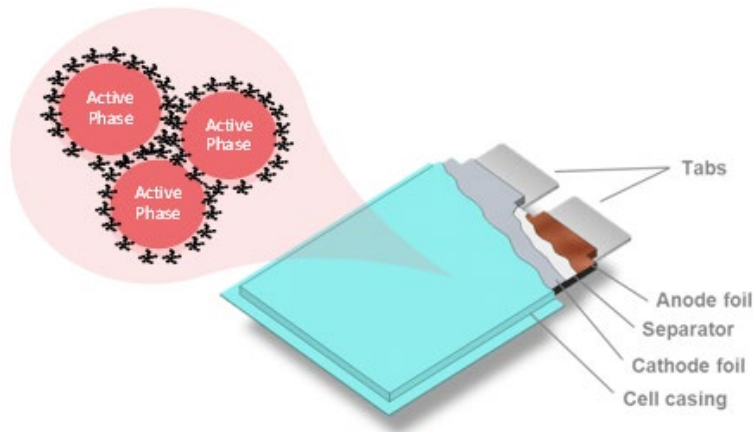
LITX® PBX® FCX®
Conductive Carbons



ENERMAX®
Carbon Nanotubes (CNT)

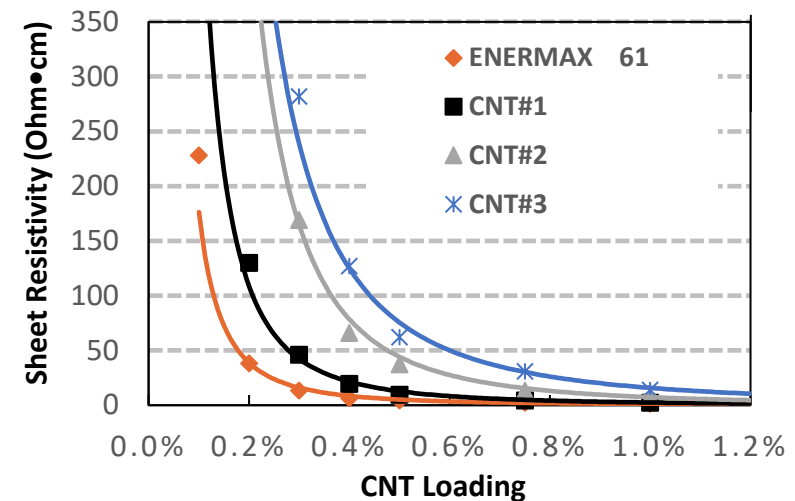
IMPROVED CONDUCTIVITY

- ◆ Improved electronic conductivity through innovations in **CNTs** and **Conductive Carbons**.
- ◆ Sales to 9 out of global top 10 Li-ion battery manufacturers.



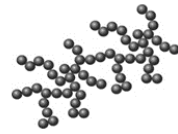
BLENDED CA DISPERSIONS

- ◆ Optimized blends for performance at low temperatures and high C rate.
- ◆ Tailor-made solutions for our customers.
- ◆ Lab to pilot to commercial scale.

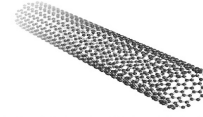


...AND ENABLING TOMORROW'S BATTERIES

Conductive Additives (CAs)



LITX® PBX® FCX®
Conductive Carbons



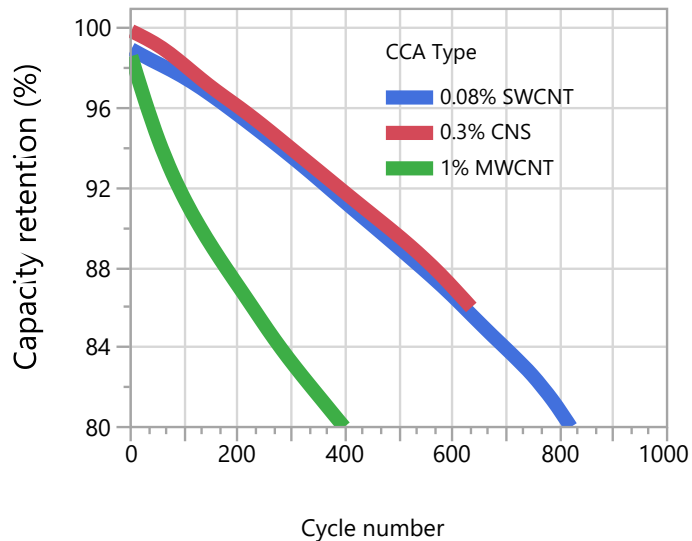
ENERMAX®
Carbon Nanotubes (CNT)



ENERMAX®
Carbon Nanostructures (CNS)

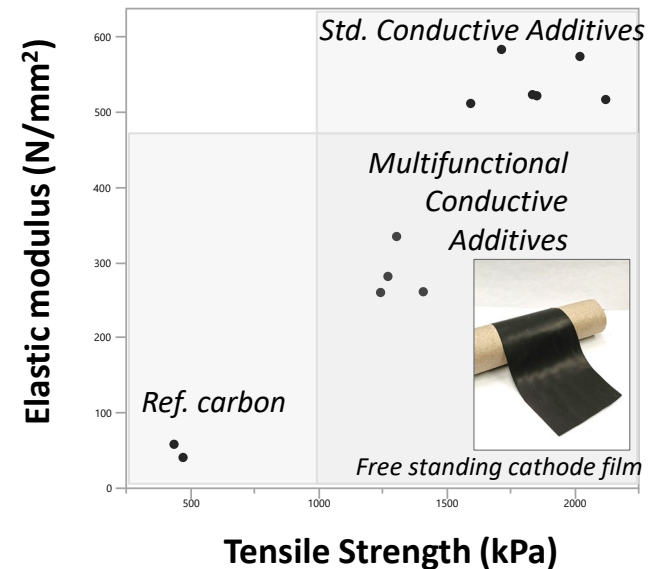
SILICON ANODE

- ◆ Enable high cycle life of silicon-containing anodes with **CNS aqueous dispersion**.
- ◆ Produced in the **USA**.



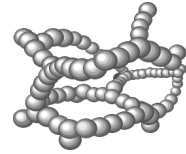
DRY PROCESSING

- ◆ **Multifunctional carbons** that enable dry electrode processing.
- ◆ Novel carbon structures that improve both resistance and film strength.



METAL OXIDE PARTICLES FOR SAFER, HIGH-ENERGY BATTERIES

Performance Materials



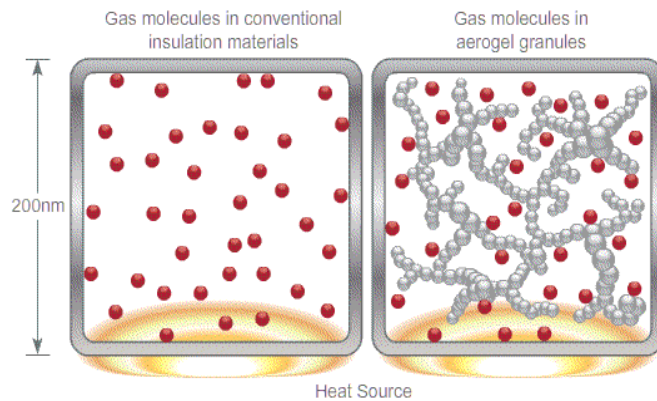
ENTERA™
Silica Aerogel



SpectrAl®
Fumed Alumina

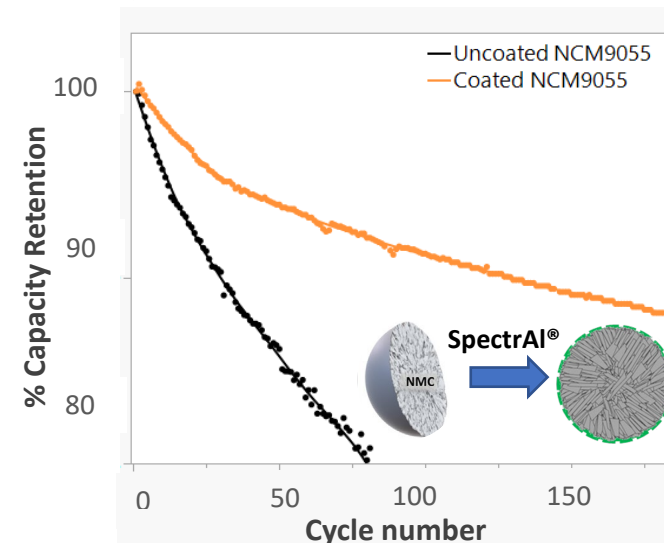
THERMAL RUNAWAY PROTECTION

- ◆ Achieving excellent thermal insulation with *silica aerogel* materials.
- ◆ Enables the creation of *thin thermal barriers* to meet strict thermal requirements.



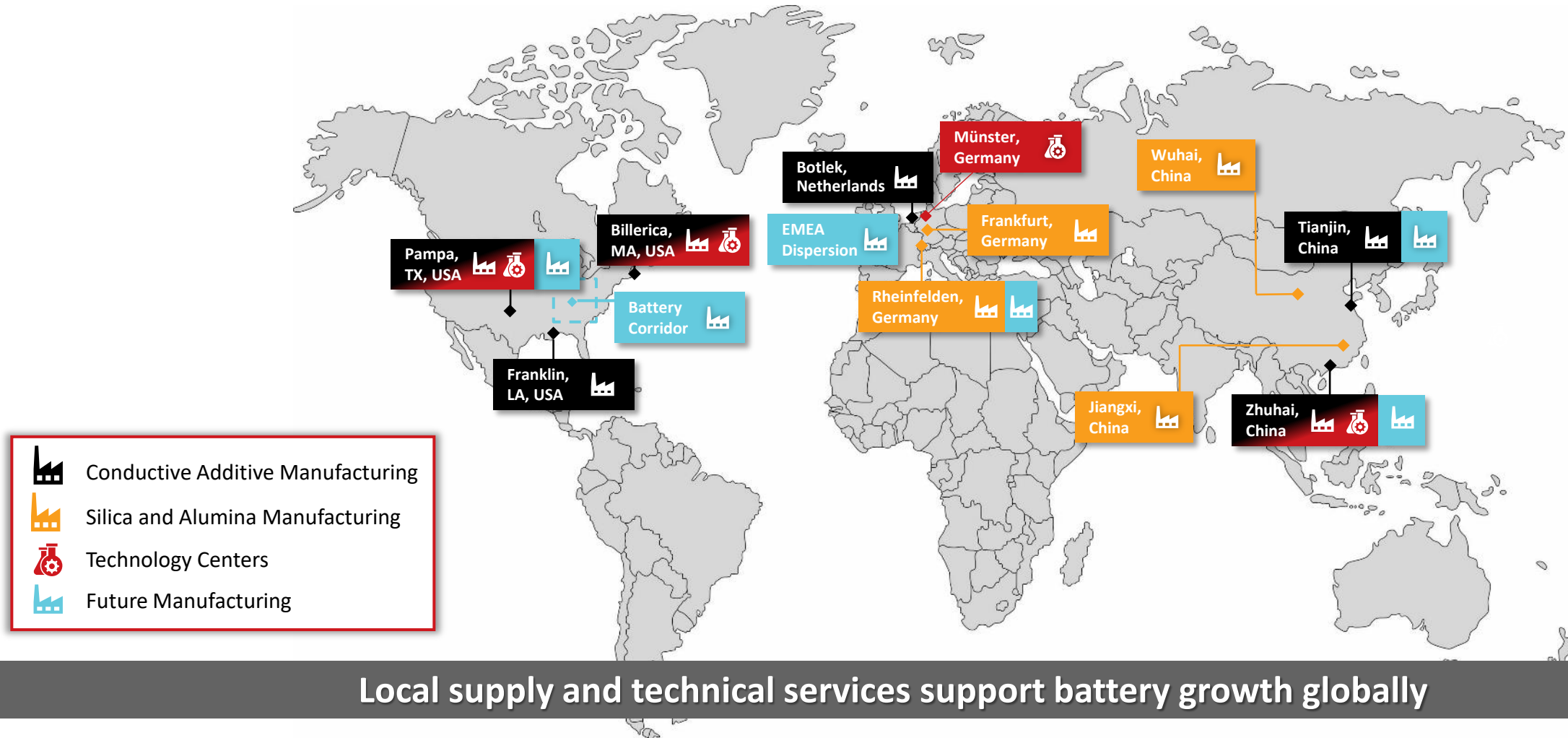
CATHODE ACTIVE MATERIAL COATING

- ◆ Enhance high nickel cathode active materials cycle life through surface coating with *fumed alumina* or nanoscale mixed metal oxides.
- ◆ Improve performance at high voltage and temperature.



MARKET LEADER WITH GLOBAL NETWORK

Capacity and Innovation Centers in Every Region



Local supply and technical services support battery growth globally

THANK YOU!

Further reading and watching:

- Cabot Website: <https://www.cabotcorp.com/solutions/products-plus/battery-materials>
- Cabot Battery Materials Overview: <https://vimeo.com/805150643> / <https://youtu.be/QWsB4coQlgQ>
- Cabot's Conductive Additives: <https://vimeo.com/835353491> / <https://youtu.be/MJcc35sBUfw>