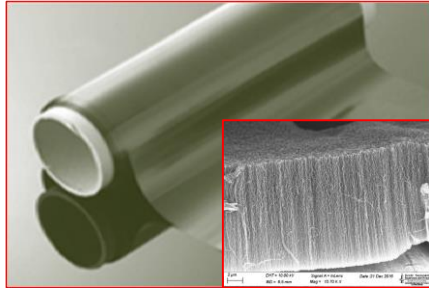


White Paper

VACNT High Performance Electrode

OVERVIEW



Vertically Aligned Carbon Nanotubes (VACNT) are “Best-in-Class” material for a wide range of applications, such as black bodies, thermal interface, electrical conduction and many others

VACNT are a new fantastic template material for electrodes as, due to their topology and ability to be easily functionalized, can store more electrical charges more rapidly than any other electrode material

NAWA’S BENEFITS

- Tens of billions of VACNT per cm² represent a high specific surface
- “Teeth-brush”-like topology to give access to all the specific surface
- “Teeth-brush”-like topology to play as ionic channels to diffuse ions more rapidly
- VACNT Chemically and Mechanically robust
- NAWA can functionalize, coat and/or impregnate VACNT on demand
- Driven cost effective R2R APCVD process

A BREAKTHROUGH IN ELECTRODE DESIGN FOR ENERGY STORAGE

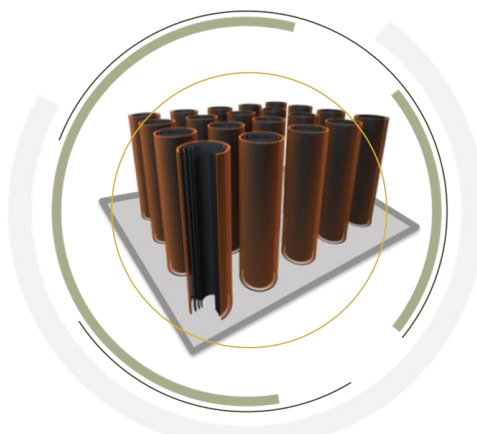
Raw VACNT electrodes



Carbon nanotubes
Graphene



- Carbon Electrodes for EDLC
- Carbon Template for Li/S/Ti/Ni/Si



Sustrates



All Substrates



- Aluminium for Batteries
- Self-Standing for Flow Batteries
- Carbon Fibers for Structural Batteries

Coated/Impregnated VACNT



Polymers/Gel
Metals
Nanoparticles

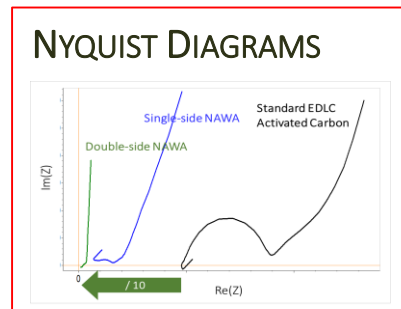
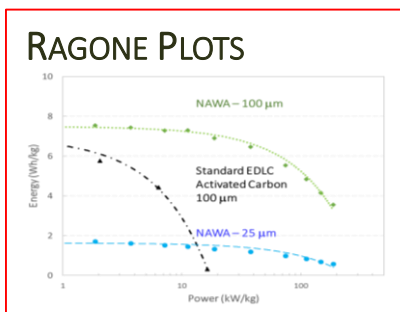


- Electrodes for Pseudo-Cap / Li-Cap
- R&D for Advanced Electrodes

BEST OF BREED PERFORMANCE

Performance Criteria	Standard	NAWA
Voltage (V)	2,7 – 3,5	2,5 – 5
Thickness (mm)	100 -250	50-250
Temperature (°C)	85 °C	120 °C
Capacity Decrease*	0,2 - 0,1	1 - 0,5
Width (mm)	100 - 300	100 - 300

* : capacity decrease $C_{100mV/s} / C_{5mV/s}$ (Scanning Volt-Amperometry)



INDUSTRIAL PLATFORM



CONTACT INFORMATION

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