BIRLA CARBON

Energy Systems

NAATBatt 2023

ADITYA BIRLA GROUP

THE ADITYA BIRLA GROUP - BIRLA CARBON

PREMIUM GLOBAL CONGLOMERATE

adityabirla.com

TECHNOLOGY

130+ state-of-the-art manufacturing facilities.

FISCAL STRENGTH

US $60 Billion in revenues
50% from international operations.

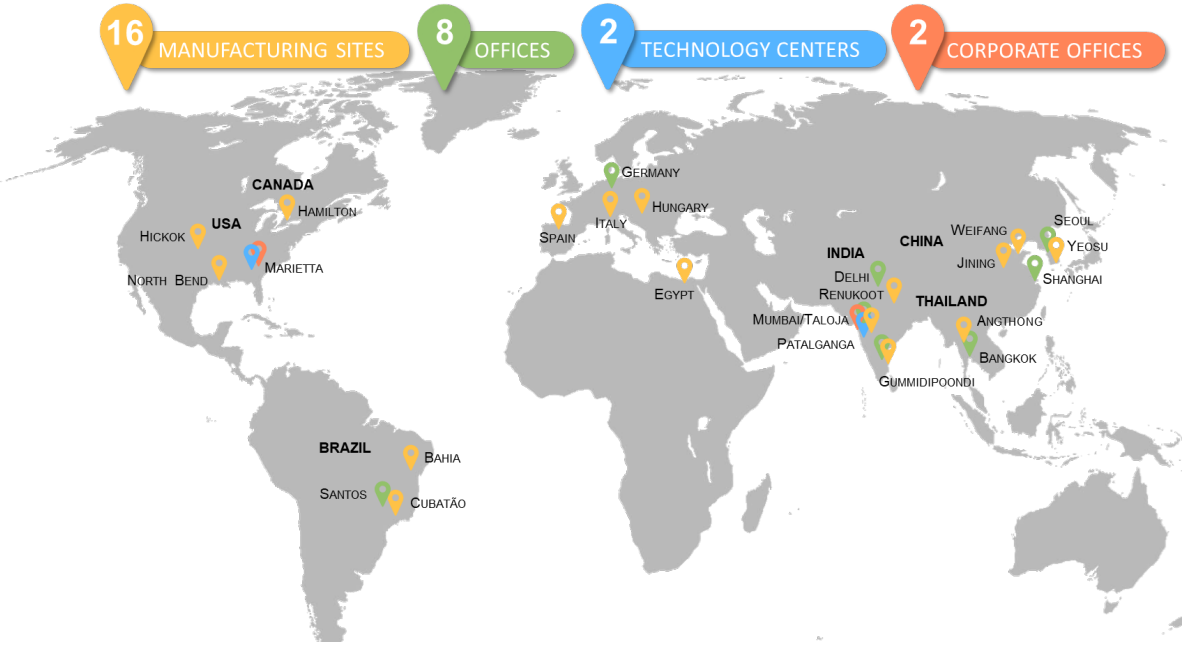
INFRASTRUCTURE

50 companies in 36 countries across 6 continents.

DIVERSE TALENT

120,000+ employees representing 42 nationalities.

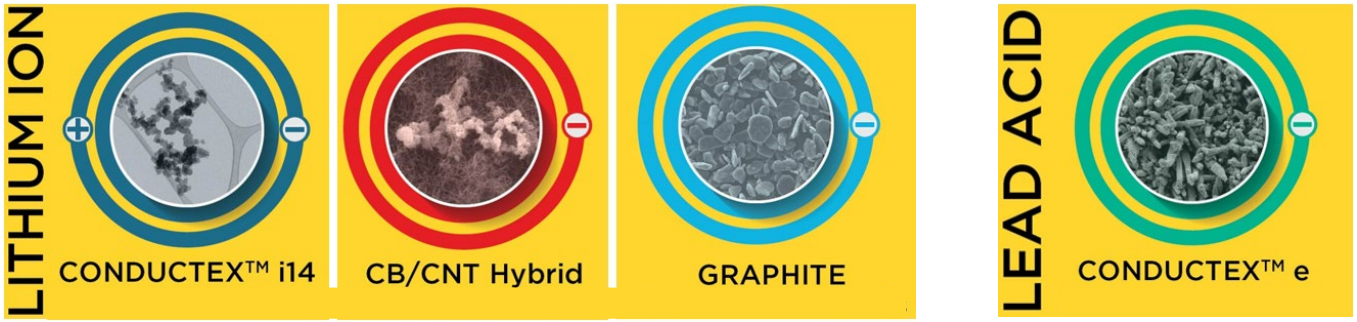
BIRLA CARBON has been serving a global customer base for **more than 150 years –** with an annual carbon black production capacity exceeding **2 Million** metric tons across **100+ unique grades,** a team of more than **2,400 people**, BIRLA CARBON operates in **12 countries** on **5 continents** across **16 different plants –** including **2 state of the art** research centers in the US and India



- CARBON BLACK ➤ *BIRLA CARBON*
- METALS ➤ *HINDALCO/ NOVELIS*
- FEEDSTOCK TRADING ➤ *BIRLA CARBON*
- INSULATORS ➤ *GRASIM*
- MINING ➤ *ESSEL (EMIL)*
- CHEMICALS
- TEXTILES
- FINANCIAL SVCS.
- RETAIL
- CEMENT
- ACRYLIC FIBERS
- AGRI-BUSINESS
- PULP & FIBER
- TELECOM

BIRLA CARBON ENERGY SYSTEMS

Our carbon portfolio includes both conductive additives and anode active materials



Conductex™ i14
Performance Additives

Next generation carbon black enables **8% higher solids loading** in electrode slurries and **superior high rate and high voltage performance**

CB/CNT Hybrid
Conductive Additives

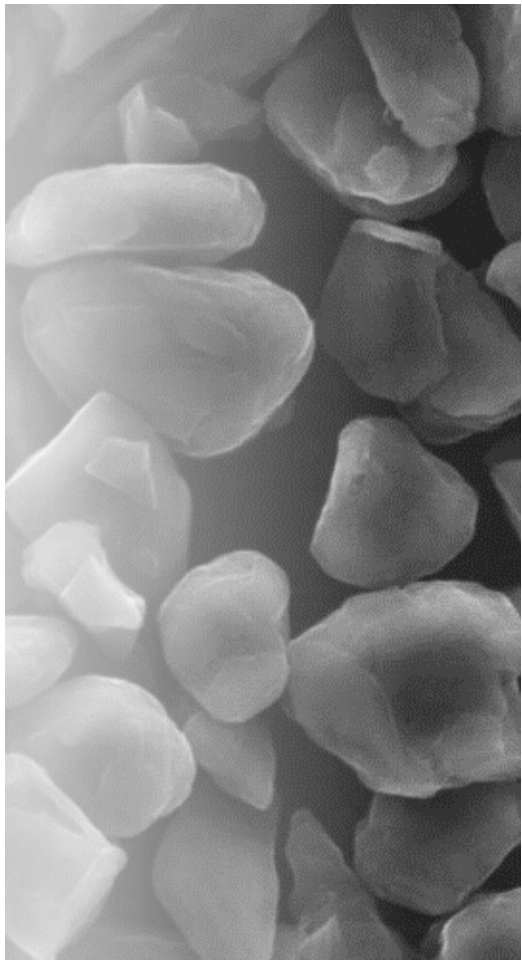
Pre-dispersed systems of CB/CNT enables **ease of mixing and good electrode properties at lower loading** compared to carbon black

Graphite
Anode Active Materials

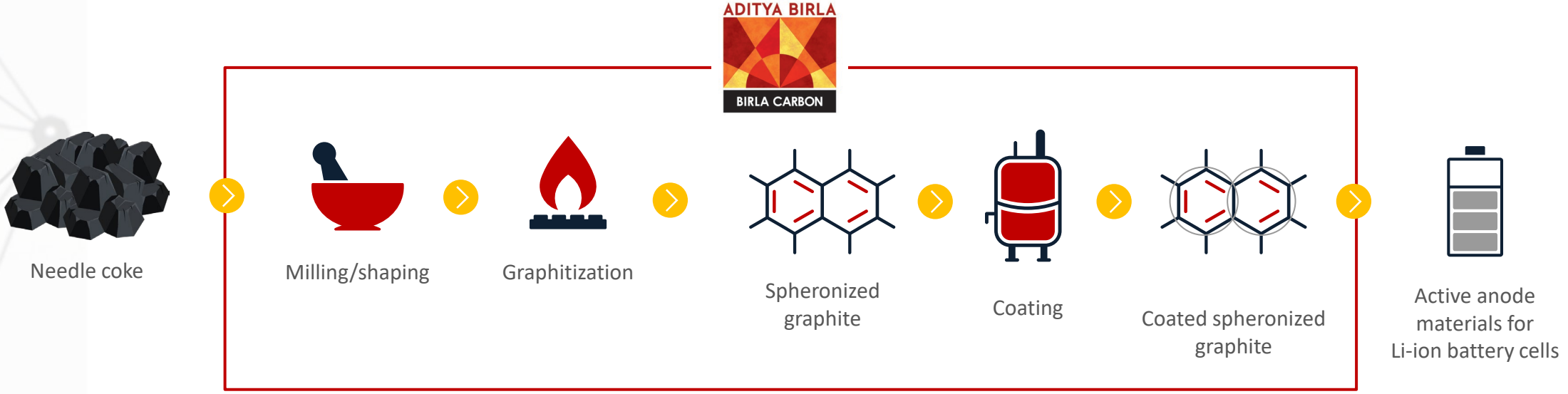
Market-ready graphites have been evaluated and sampled as a first anode active material product line for Birla Carbon

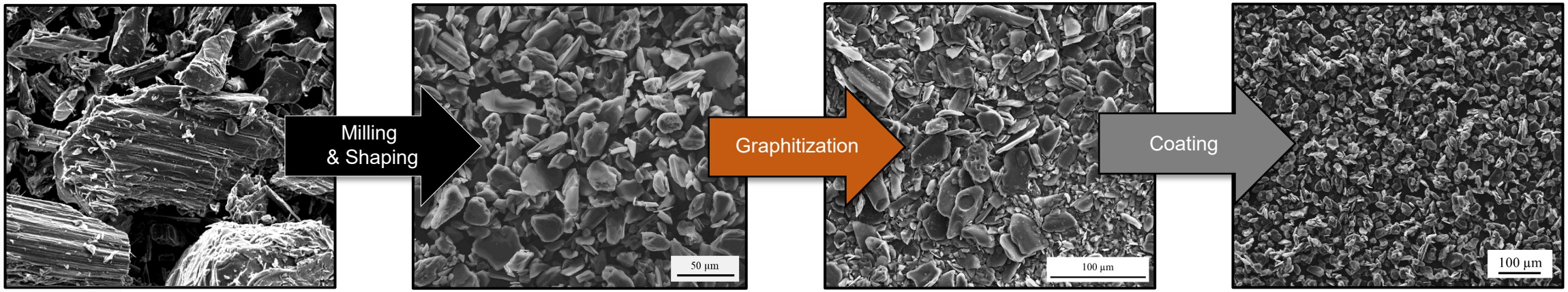
Conductex™ e
Performance Additives

Full portfolio of **carbon blacks for advanced lead-acid batteries** enabling enhanced performance for all applications

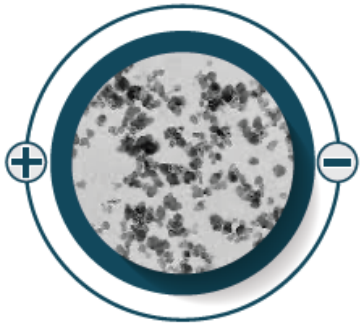


Birla Carbon process mills, shapes, graphitizes, and coats graphite, producing battery-grade anode material



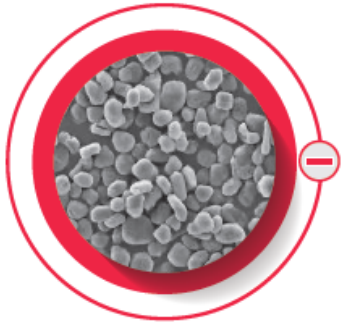


Birla Carbon Technology Roadmap



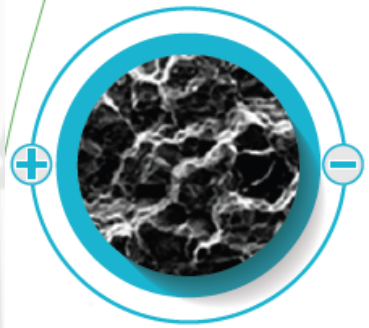
CARBON BLACK

Broad portfolio of advanced conductive for advanced batteries, tires, plastics, inks, coatings.



GRAPHITE

High performance Li-ion anode active materials and new to the world manufacturing technologies.



CB/CNT HYBRIDS

Next generation conductive additives for highest levels of conductivity in leading-edge applications.

ALTERNATIVE FEEDSTOCKS

Developing products and processes using alternative and bio-derived feedstocks for carbon products.

CO_2 REDUCTION

Leading industry sustainability through carbon capture and CO2 coversion to high performance products.

ABOUT BIRLA CARBON

At Birla Carbon, we've been sharing our knowledge for over a century, forging new pathways and finding new solutions. From learning the true structure of carbon black through the lens of an electron microscope, to sharing best practices around the globe, we push beyond the known to create new techniques and applications. We work with each other, for each other, creating value for our customers by being a partner of value. As a family, we take a generational view, making decisions for the long-term, our gaze just past the horizon.

As an ardent practitioner of sustainable development, Birla Carbon's Sustainable Operational Excellence (SOE) strategy focuses on employee safety, environmental stewardship, efficient use of carbon sources and a key focus on conducting operations in a socially and ethically responsible manner. In 2022, Birla Carbon was awarded a Platinum level rating for sustainable practices by Ecovadis.

Birla Carbon's Purpose, Share the Strength, is about balanced and shared leadership, working at the product level to innovate cutting edge solutions, through collaboration with its people, customers and communities and backed by knowledge built over a century.

SHARE THE STRENGTH

Dr. Ann Schoeb
Chief R&D Officer
Business Leader, Energy Systems
Email: ann.schoeb@adityabirla.com
Phone: +1 770 792 9575

Dr. Zachary Combs
R&D Director
Energy Systems
Email: zachary.combs@adityabirla.com
Phone: +1 770 792 9691

Regina Prioli
Global Commercial Leader
Energy Systems
Email: regina.prioli@adityabirla.com
Phone: +1 770 792 9657

Nicholas Dunkley
Head of Market Development
Energy Systems
Email: nick.dunkley@adityabirla.com
Phone: +44 7887 455 989

ADITYA BIRLA
BIRLA CARBON