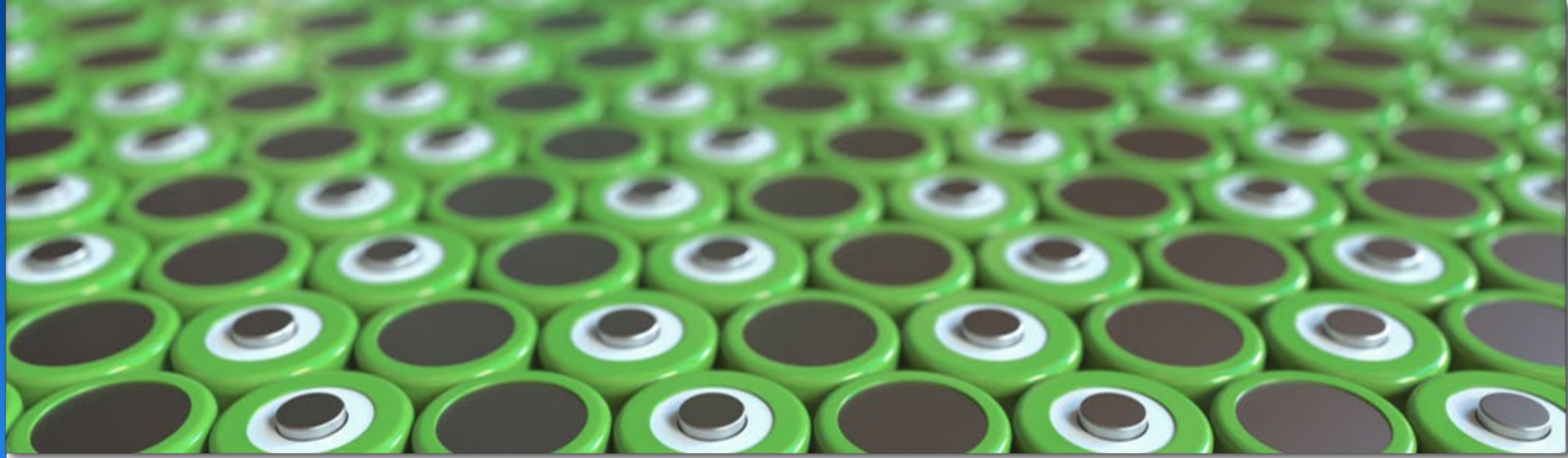


NAATBatt 2024,
Carlsbad, CA
19-22 Feb 2024
Michael Ferraco



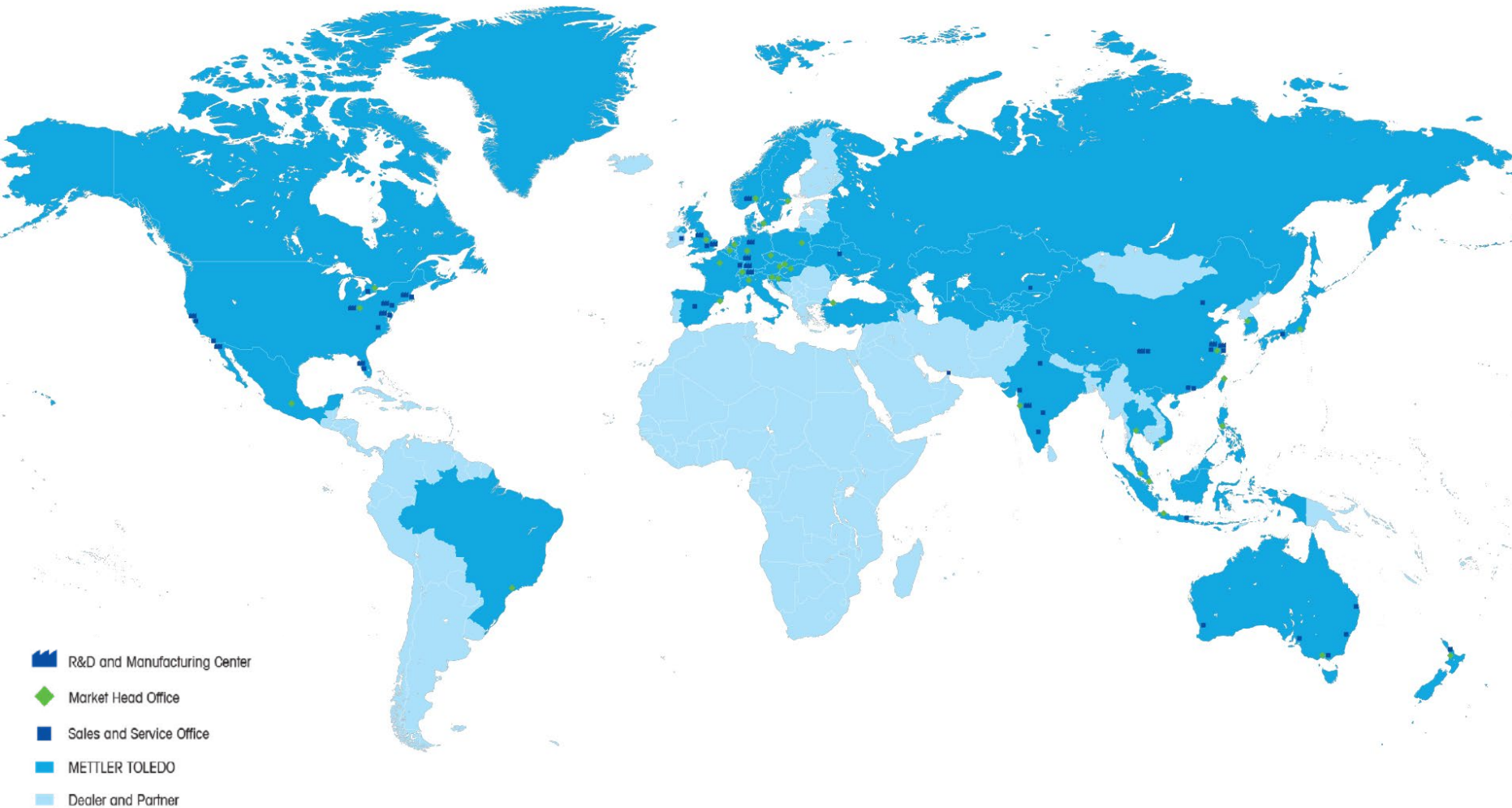
Member Update Presentation

METTLER TOLEDO's capabilities and competencies across
the battery value chain

METTLER TOLEDO



METTLER TOLEDO: Your Trustworthy Partner



Global Presence

Large service force of certified technicians within the industry.

50+ country coverage

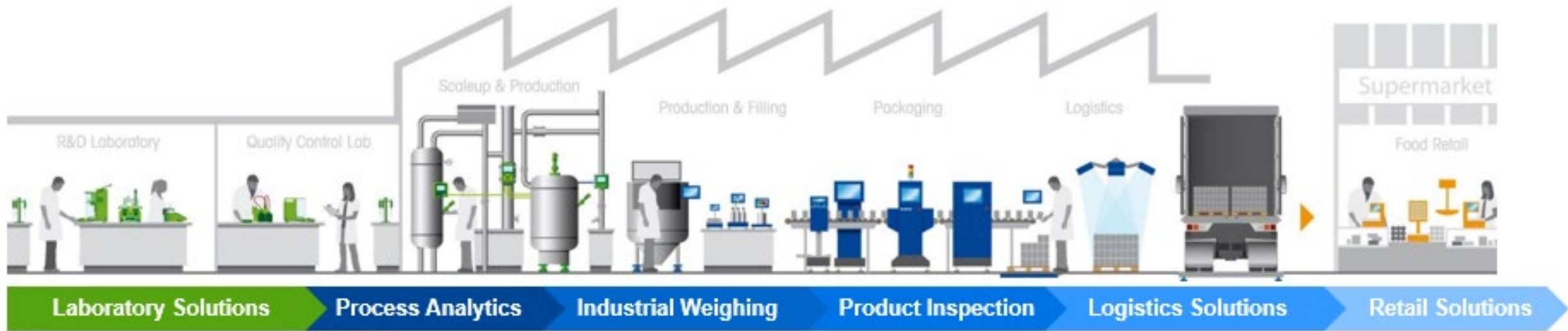
1500+ Service Technicians

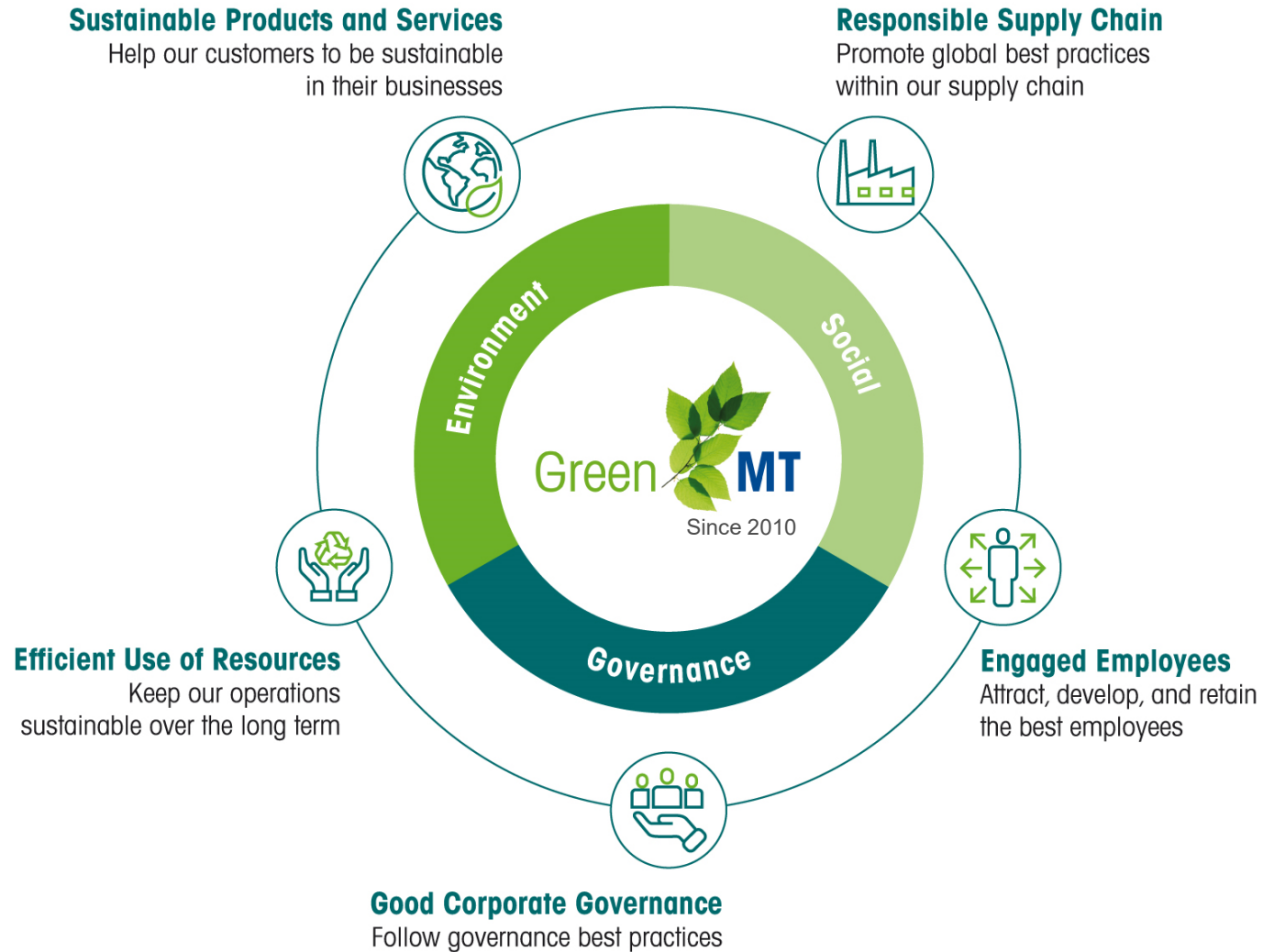
Acknowledged for Accuracy

METTLER TOLEDO Services ensure that your equipment is always operating at peak performance so that your measurements meet productivity, quality and regulatory requirements.

METTLER TOLEDO Solutions help to:

- Streamline processes
- Enhance productivity with automation
- Ensure accurate results
- Reach compliance with regulatory requirements
- Optimize costs and reduce waste





Carbon neutral operations



100% Renewable Electricity



Zero Waste to landfill 2025



Responsible Sourcing



Approved Net Zero Targets



Climate Score A-



#17



Silver Medal

Addressed UN Sustainable Development Goals



More information at www.mt.com/sustainability

Optimize training, select the right equipment, and get started with measurements more quickly

I want to learn...



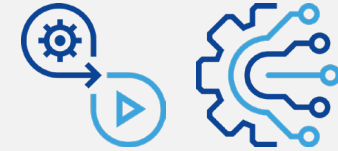
- Theory guides
 - Electrochemistry, Titration, Thermal Analysis, weighing, density
 - In-process control, dosing, floor & vehicle scales
- Training and eLearning courses

I want to know...



- Improve accuracy with Good Measurement Practices™
- Drive productivity & efficiency
- Webinars on advanced topics
- Scale your workflows
- Select the right equipment

I want to do...

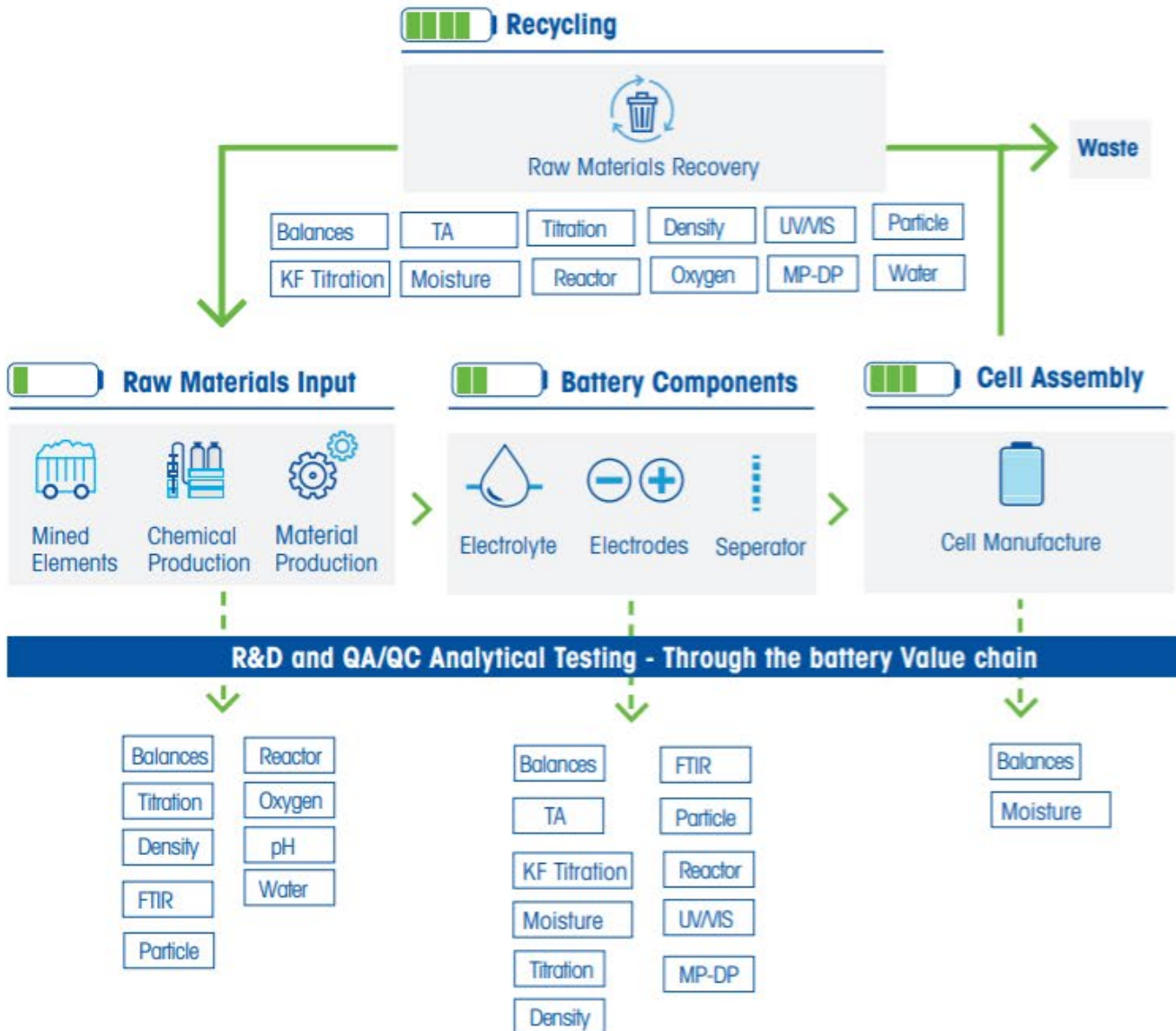


- Application development in Quality Assurance / at-line & near line
- New-to-me application deployment
- Digitalize workflows & data management



[mt.com/Library](https://www.mt.com/Library)
[mt.com/Battery-Lifecycle](https://www.mt.com/Battery-Lifecycle)
[mt.com/Applications](https://www.mt.com/Applications)

From mining to recycling – we provide measurement and software solutions across battery lifecycles



Balances

- Sample preparation, Formulation, Check-weighing

Thermal analysis

- TGA and DSC : heat capacity, decomposition temperatures, enthalpy
- TMA and DMA : thermal, mechanical and physical properties

Karl Fischer Titration and Moisture Analyzer

- Water and moisture content of battery components and raw materials

Titration

- Determination of purity/impurity of metals and active materials
- HF content determination through acid-base titration

Autosampler (InMotion)

- Improve process efficiency, safety, and throughput.

UV/VIS

- Anions, non-metal elements, color and degradation analysis

Density and Refractometry

- Quality control of incoming goods and recycled chemicals

Oxygen pH and Conductivity

- Ensure inert working conditions and control particle size distribution in PCAM coprecipitation

FTIR (ReactIR)

- Monitor chemical reactions and give real-time insights

Automated Reactors

- Calorimetry measurements and data recording for process understanding and control

Melting Point and Dropping Point

- Dropping point of anode materials
- Softening point of pitch for anode manufacturing

Water

- Monitor ultrapure water and ensure the highest quality is delivered

Particle analyzer (Particle Track)

- Monitor and characterize crystallization reactions, particle size, and particle size distribution.