NRC·CNRC

National Research Council Canada

Advanced Clean Energy Program / overview of battery R&D

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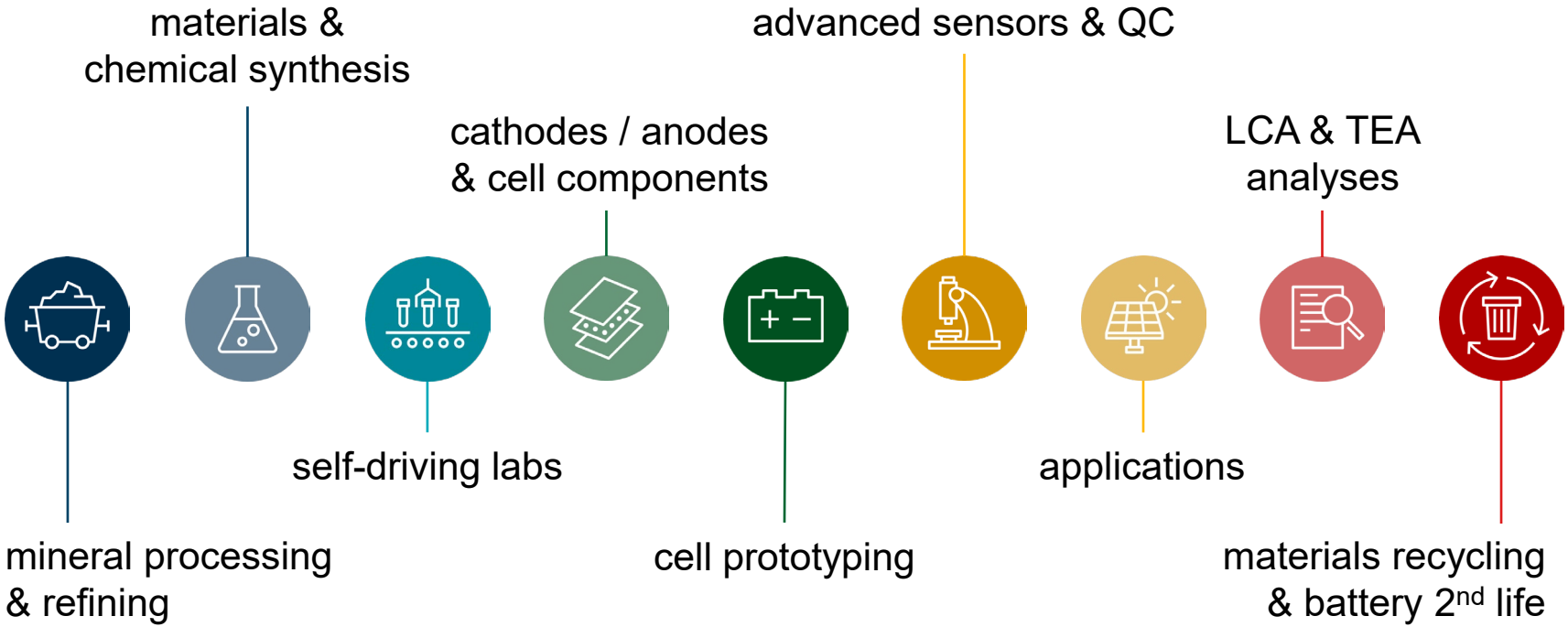
NRC and battery value chain



See more here, or get in touch: Peter.Kovacik@nrc.gc.ca

Working across TRL levels

Large-scale synthesis

- **kg-scale** synthesis and transformation of materials (liquid and dry processes)
- electrode materials (e.g. Ni-rich NMC, graphite/Si) and solid-state electrolytes

Pouch cell prototyping

- small & large **pouch cells** (300 mAh – 30 Ah), cylindrical cells (coming)
- slurry optimization, electrode coating, stacking, welding, cell formation & cycling

Battery recycling

- multi-stage **mini-pilot line** for membrane separation of metals (e.g. Co and Ni)
- flotation, hydrometallurgy, regeneration and upcycling of anode/cathode materials

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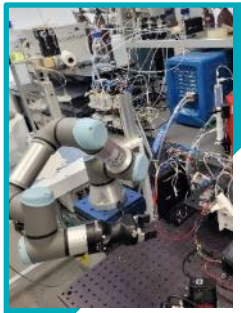
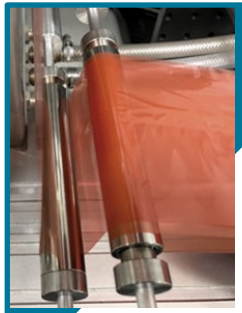
While pushing boundaries



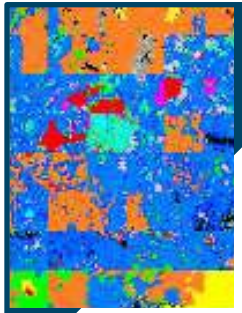
AI and self-driving labs

- autonomous SDL platforms for **discovery** of novel cathode materials
- high-throughput synthesis, characterization, and performance evaluation



Solid-state electrolytes

- **design** & **synthesis** of solid-state electrolytes on different scales (from mg to kg)
- polymer, ceramic, and hybrid
- prototyping of solid-state pouch cells (coming)



Advanced sensors

- **diagnostics** via ultrasound, laser & optical spectroscopy
- diverse applications, such as ore sorting, battery materials development, cell production, and recycling

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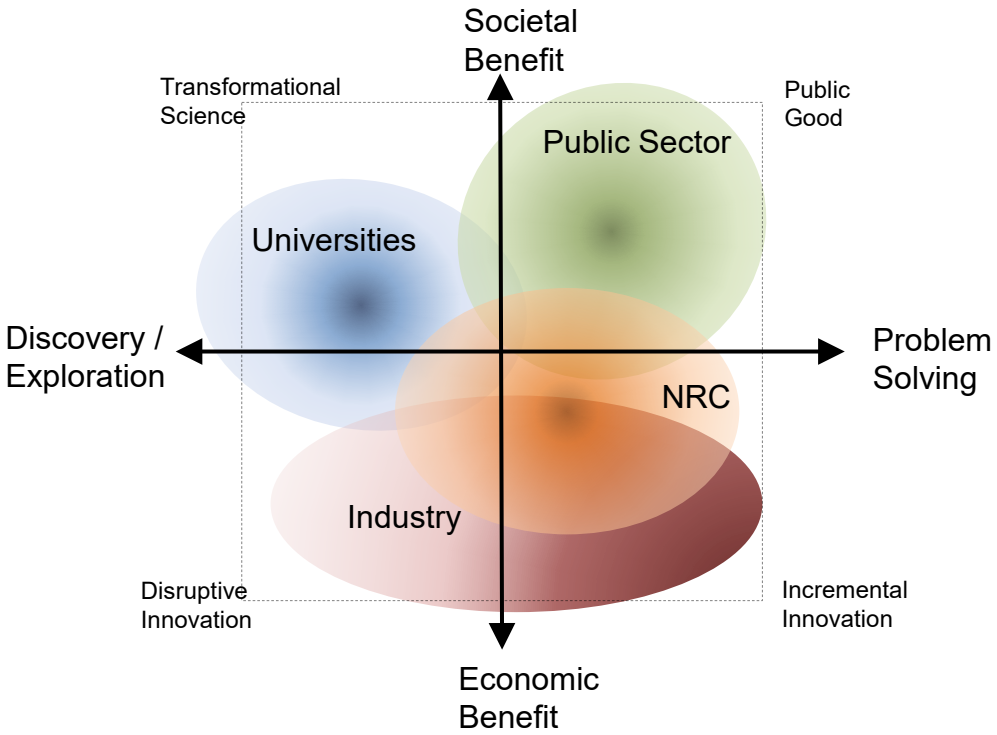
Working together



- working with Canadian and **international partners**
- with companies (small & large), academia, government, …
- technical services, collaborative R&D projects, large consortia, …
- join our **LiBTec community** focused on battery innovation here