Future battery technologies FET Flagship

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Batteries are key technologies for the energy transition

- Decarbonizing the transport sector (electric vehicles)
- Decarbonizing the power sector (storage of intermittent renewable sources)



IHS, Gartner, SNR, CRU, Roskill

FET Flagship vision

- Inventing the batteries of the future
- Providing breakthrough technologies to the European battery industry across the full value chain
- Enabling long-term European leadership in both existing markets (road transport, stationary energy storage) and future emerging applications (robotics, aerospace, medical devices, internet of things, ...)



Ultrahigh performances



Smart functionalities



Environmental sustainability

FET Flagship positioning in the battery R&I landscape



FET Flagship roadmap

- Long-term objectives:
 - Energy & power densities approaching the theoretical limits
 - Outstanding lifetime & reliability
 - Enhanced safety
 - Environmental sustainability
 - Cost effectiveness
- Specific research areas contributing to the objectives:
 - Accelerated battery material discovery & interface engineering
 - Smart sensing & self-healing functionalities
 - Open to ideas for new research areas!
- Cross-cutting research areas:
 - Manufacturability
 - Recyclability

Accelerated battery material discovery & interface engineering

MATERIALS ACCELERATION PLATFORM Self-driving laboratory for autonomous discovery and optimization of materials and interfaces

10× acceleration of the development cycle

Energy & power densities approaching the theoretical limits

Outstanding lifetime & reliability

Accelerated battery material discovery & interface engineering



Smart sensing & self-healing functionalities



Smart sensing & self-healing functionalities



Towards an integrated approach for the batteries of the future





Stakeholders support



Work in progress

- First workshop: January 9, 2018 (Brussels)
- Second workshop: October 29, 2018 (Vienna)
- 'Vision document' summarizing the outputs of the workshop: November 9, 2018
- 'Manifesto document' presenting the initiative and introducing the first elements of the roadmap: December 4, 2018
- Full roadmap (FETPROACT-04-2019 CSA): 2019

Thank you for your attention

