

### Motivation and Objectives

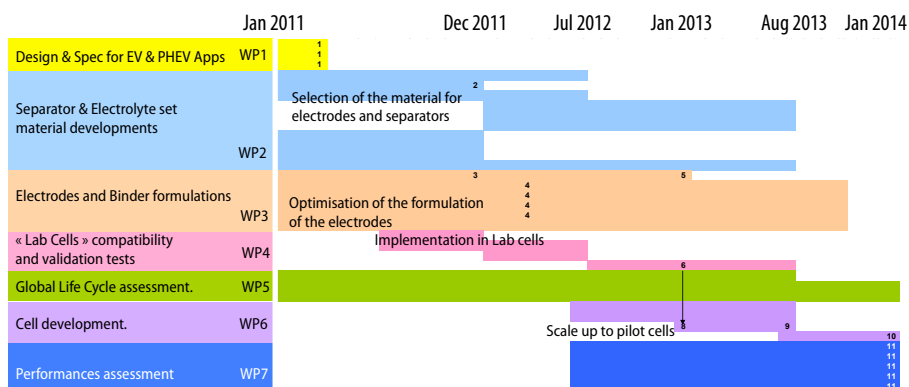
Large efforts have been invested during the last ten years on cathodes, anodes and their corresponding active materials, while other materials in the cells like those used for electrolytes, separators and binders were not pushed with the same R&D efforts. However, increasing the cell specific energy by an increase of the voltage cell, brings some concerns regarding the electrochemical stability of several of these components.

AMELIE's objectives are therefore to develop a

- Higher specific energy 10 Ah cell prototype, for electric vehicle (EV) and plug in hybrid electric vehicle (PHEV) application, combining
  - A high voltage chemistry with a
  - More stable electrolyte, separators and binder system;
- And following as well an eco-design methodology and integrating a chemical way of recycling materials beyond the active materials. New water based binder systems will be studied for the anode. The cost needs to be limited by using a lower amount of higher performing materials decreasing the cost per kWh.

### Project Plan, Milestones and Deliverables

Key steps are defined in the Gantt diagram below.



During the whole process all developments will be conducted in line with the eco-design recommendation of the WP5.

As well in the eco-design and the Life Cycle Assessment (LCA) study, the chemical ways of recycling are developed.

### Achievements

- WP1:** Definition of the final cell specifications and safety tests have been finalized by April 2011 by the OEM of the consortium.
- WP2:** Development, pre-screening & selection of the most promising polymers for the different separator technologies are ongoing.
- WP3:** Developments and initial production of new active materials for development of the formulations (including binders and other additives for electrodes) are ongoing.
- WP4:** The implementation of several materials in Lab cells for electrochemical testing started in July 2011.

Budget	5.2 M€	Funding	3.5 M€
Duration	36 months	Start	January 2011
DG	Research / GC-SST	Contract n°	NMP3-SL-2010-265910
Coordinator	V. Arcella, Thierry Baert	Contact	Thierry.baert@solvay.com
Partners	12 partners, among them Renault, Volvo, Continental		