

GREENLION is a Large Scale Collaborative Project within the FP7 leading to the manufacturing of greener and cheaper Li-Ion batteries for electric vehicle applications via the use of water soluble, fluorine-free, high thermally stable binders, which would eliminate the use of VOCs and reduce the cell assembly cost.

GREENLION has 6 key objectives:

- development of **new** active and inactive **battery materials** viable for **water processing**
- innovative processes leading to reduced **electrode production cost** and **environmental pollution**
- development of new assembly procedures capable of substantially **reduce the time** and **cost of cell fabrication**
- **lighter** battery modules with air cooling and easier disassembly through **eco-designed bonding techniques**
- development of **an automated module** and battery pack assembly line for increased **production output** and **reduced cost**
- **waste reduction**, which, by making use of the water solubility of the binder, allows the extensive **recovery** of the active and inactive battery materials

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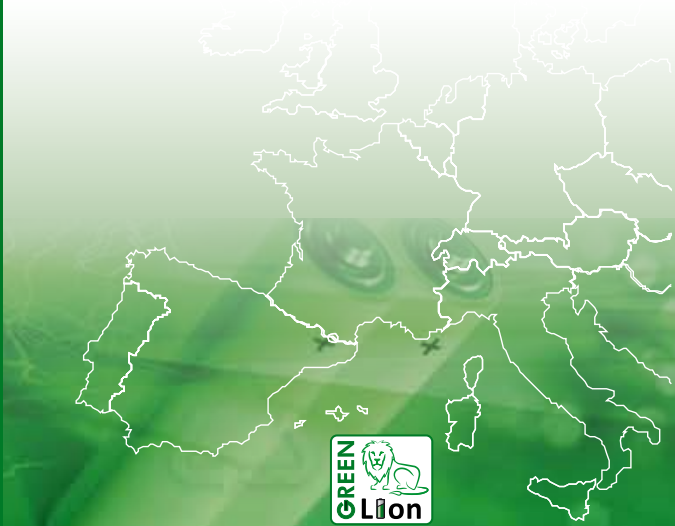
From green materials to greener batteries

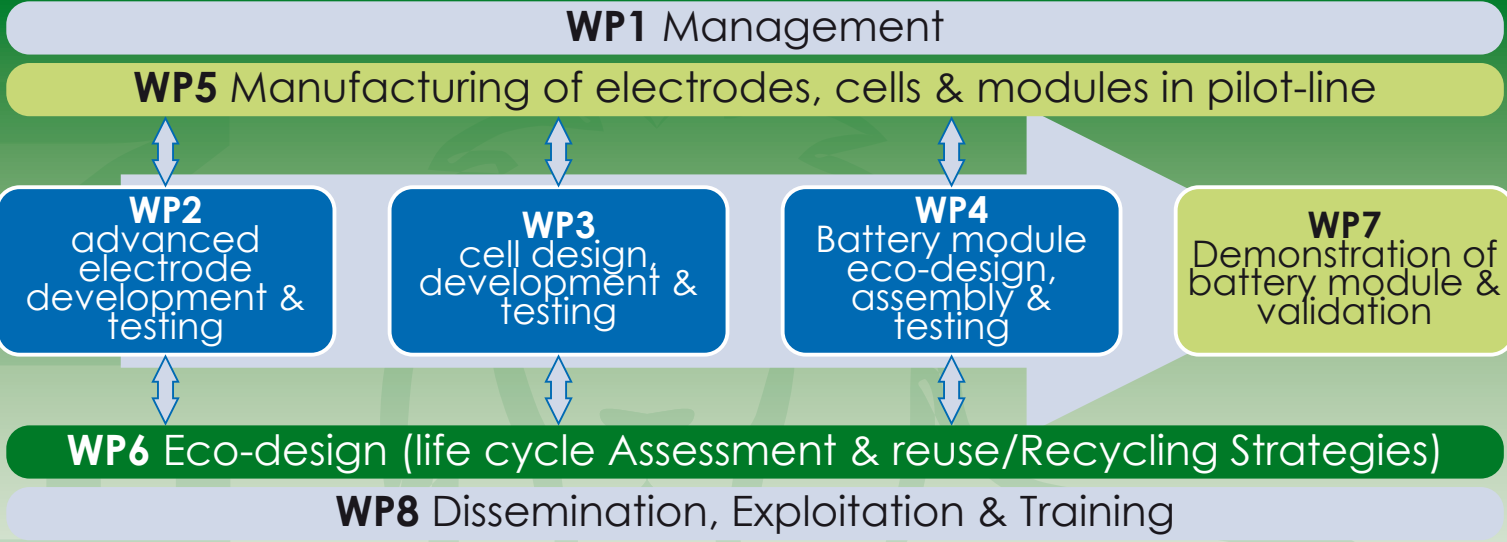
Advanced Manufacturing Processes for Low Cost GREENER Li-ION Batteries

FP7-2011-GC-ELECTROCHEMICAL-STORAGE
Advanced eco-design and manufacturing processes for
batteries and electrical components

Greenlion is part of European Green Cars Initiative

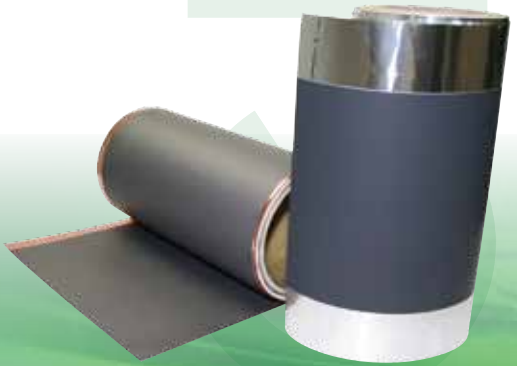
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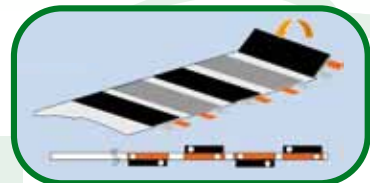
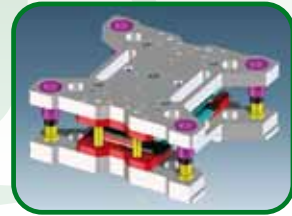
At the electrode processing stage, development of:

1. Aqueous slurries
2. Non-thermoplastic polymers
3. Easily disposable non-fluorinated polymers



At the cell assembly level, implementation of:

1. Laser cutting instead of mechanical notching of the electrodes
2. Stack winding process
3. Environmentally friendly bonding process for more effective and long-life cell sealing
4. Adjusted formation step time



At the battery module level, design of:

1. Lighter battery module designs by implementing air cooled solutions
2. Bonding process of module housing for safe operation but easy disassembling for maintenance and reuse/recycling at their end-of-life
3. Automation of module assembly process

