

Sustainable and Safe anode-free Na battery (SuSaNa)

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Consortium:



Safety issues

Current state-of-the-art Lithium ion batteries are prone to flammability due to:

- Dendritic growth
- Flammable organic based electrolytes

Sustainability issues

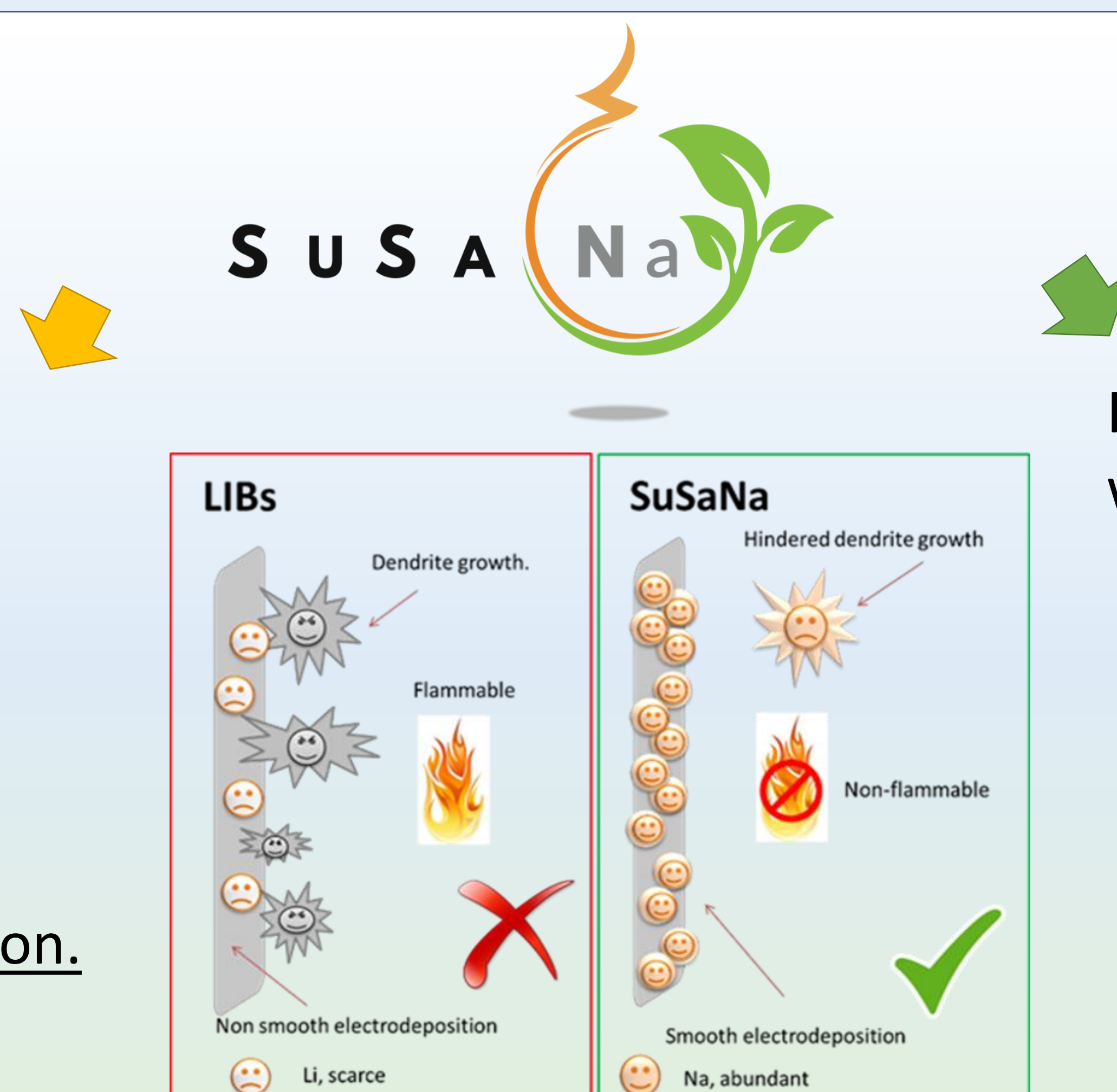
Li-ion batteries are based on critical raw materials with current very low amount of recovery and recycling rates.

SuSaNa project aims at developing an Anode-free Na battery with the focus put in safety and sustainability

Safety approach

In order to be safe, novel electrolytes developed in SuSaNa project will be:

- Non-flammable.
- Non-toxic.
- Non-corrosive.
- Leak-free.
- Promote the homogeneous deposition.
- Suppress side-reactions.



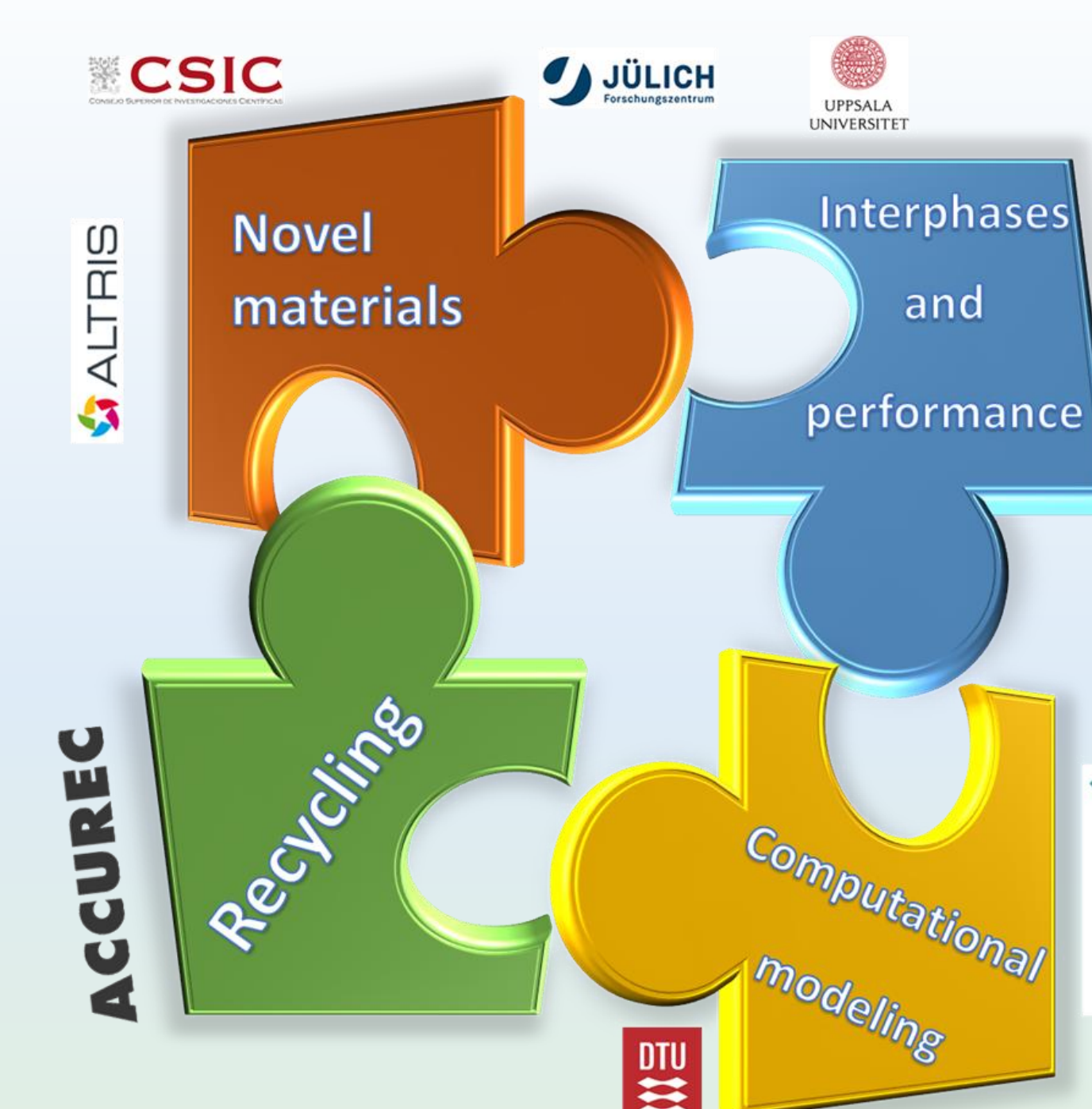
Sustainability approach

In order to be sustainable, SuSana project will:

- Avoid critical raw-materials, using Sodium instead of Lithium.
- Use a green chemistry approaches.
- Consider end of life and recyclability aspects from cradle to grave.

Research advancements include:

- ✓ Formulation of novel electrolytes (liquid and polymer gels) that hinder dendritic growth and are less flammable than current state-of-the-art.
- ✓ Use of materials and methods that comply with the Green Principles and eco-design approaches.
- ✓ The materials developed are tested individually and in combination by electrochemical and surface science techniques with support of modelling inputs to assess its performance.
- ✓ Recyclability aspects of the single materials, full cells and its end-life are taken into consideration. including facilitating final cell disassembly.



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