LITHIUM / OXYGEN BATTERY

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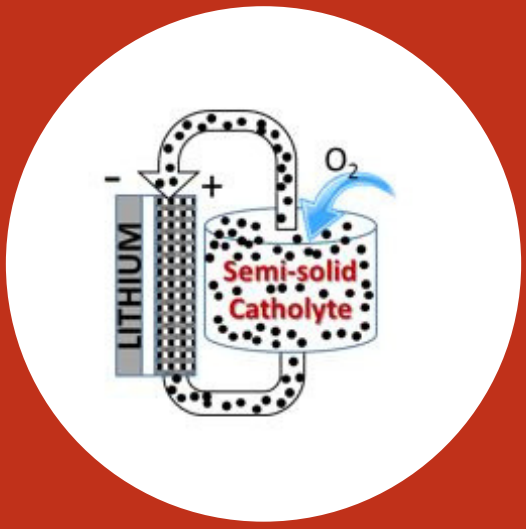

Lithium/oxygen non-aqueous semi-solid flow battery that combines the high energy density of lithium/air batteries with the flexibility of redox flow batteries.

Patent: EU, USA

Inventors: Francesca Soavi, Catia Arbizzani, Irene Ruggeri

INVENZIONE

LThe invention claims a novel, low cost, semi-solid catholyte for Li/O2 batteries, as well as its use in non-aqueous semi-solid flow Li-O2 battery (SFLOB) that combines the high energy density of Li/O2 battery with the flexible and scalable architecture of redox flow batteries. The cell operates with a flowable catholyte based on organic electrolyte and carbonaceous suspended particles, fed with O2 and pumped through the cell, and finally with a lithium metal anode.

ADVANTAGES

- high voltage operation
- power and energy capabilities independently scaled
- exceptionally high discharge capacity
- projected energy density 3-5 time higher than conventional Li-ion batteries
- high operational and design flexibility
- affordable solution

APPLICATIONS

- batteries for large stationary energy storage (renewable energy plants)
- sustainable mobility (public and private) including automotive, airplanes, rail and drones

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