

Sessione pitch: spazio alle idee



Supercaps for electric grid protection

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CapTop Srl



Horizon Europe e il bando orizzontale **Clean Industrial Deal**

11 DICEMBRE 2025



Indicazioni generali per la preparazione del pitch- *da rimuovere nella versione finale*

- Slide preferibilmente in inglese, presentazione in italiano
- Durata: 3'-5'
- Obiettivo: presentare le proprie competenze , e/o idea progettuale, in vista della prossima call Clean Industrial Deal
- Indicare se si ha interesse a coordinatore o ad essere partner
- Cercare di essere sintetici e di non condensare troppe informazioni nella struttura slide
- È preferibile rispettare la struttura di pitch data, ma avete la possibile di aggiungere/rimuovere slide pur rimanendo nei tempi di presentazione previsti
- Evitare di inserire video/audio/gif che possono appesantire la presentazione
- La selezione dei pitch, in caso di numeri elevati di sottomissioni, avverrà da parte di APRE e Confindustria in base alla completezza delle informazioni inserite e al principio “ First comes, first served)
- Una volta completata, la presentazione può essere caricata nella seguente cartella: [CARTELLA](#)

Company/Organisation

- Type of company/organisation: **Private, Innovative SME**
- Contact Details
Name: **CapTop Srl**
Email: **info@captop.it**
Telephone/Mobile: **+393285812479**
- Topic of interest: **Supercapacitors (SC), High Power Energy Storage**
- **Production of SC cells, modules, and on demand systems. Primary Frequency Regulation.**

Expertise of your organisation

Describe:

1. We have collaboration with many scientific organizations in Italy (ENEA, CNR, CIRA, some universities) and abroad (Un. of Southampton). We expect to take part to EU initiatives for electric grid primary protection.
2. CapTop is doing R&D activities to increase SC performances, sustainability, safety, and decrease the cost.

Challenges and objectives

- Describe the **main objectives** of your proposed project / proposal/idea and how it addresses the outcomes and impacts of the Clean Industrial Deal – CID topic/call
 - *The critical impact of non-predictable energy sources and the increasing number of Data Centers on electric grids?*
 - *Our project is suitable for the CID call for funding, because the envisaged problem is real, imminent (see for instance the incident in Spain of April 2025), and could be solved.*
 - *There are some initiatives around the world, mainly in China, in that direction, i.e. hybrid systems SC-batteries for grid protection.*

Main activities

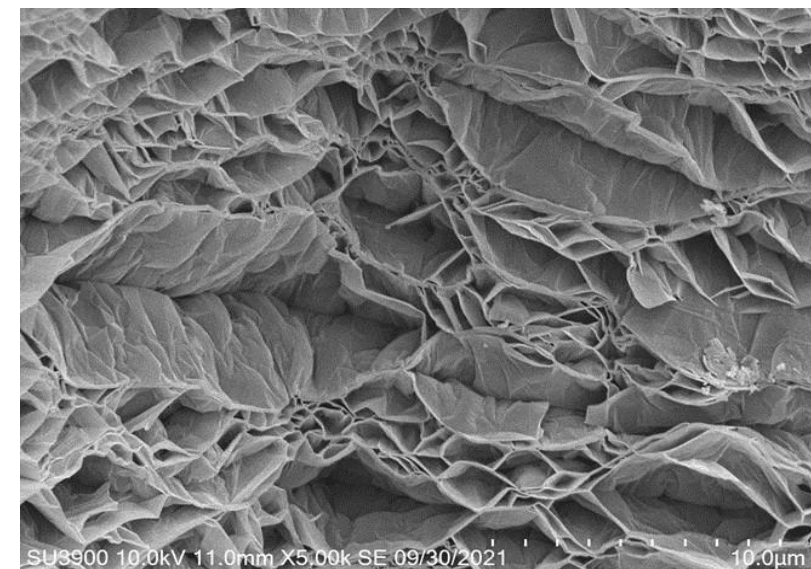
- We plan to extend our R&D activities related to the development of a new electrolyte based on lactic acid derivate and a new graphene-based electrodes. We have patents about previous achievements, and we plan to push our results to TRL 7-8
- We can be a partner in a R&D consortium coordinated by a big EU research organization or university. A big company, like for instance Terna, can be a very good coordinator of such project.



After starting out as a **spin-off** from the **University of Naples "Federico II"** and being founded by academics, Captop still engages in **research and development** by continuing to collaborate with research organizations such as:

- **ENEA**
- **CNR**
- **University of Southampton**

Some patents on **innovative electrolytes** and **new electrodes** were registered following the research work in the first years since foundation.



Graphene microstructure



RESEARCH LINE GREEN CHEMISTRY

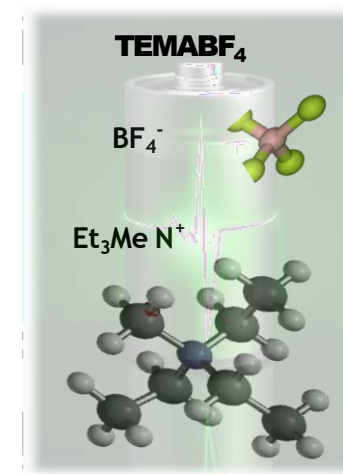
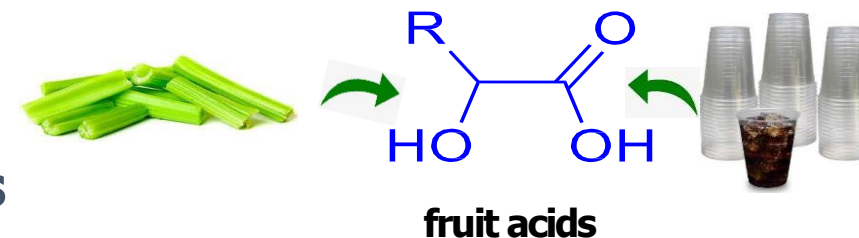
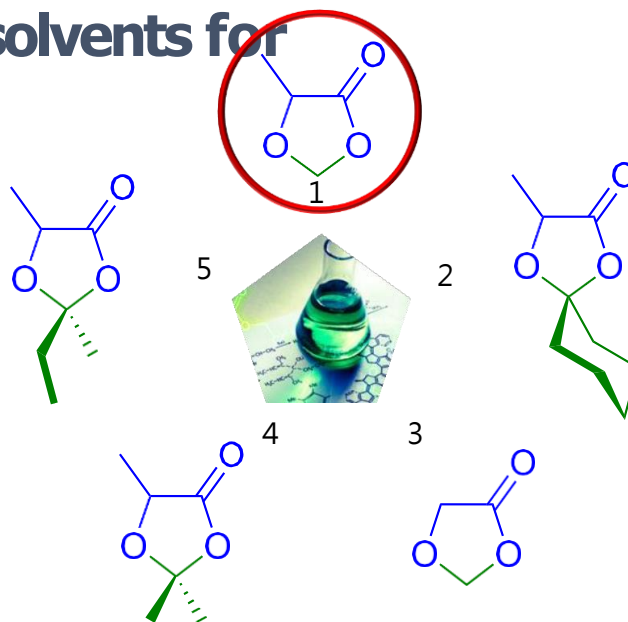
Target of our activity is to obtain **new aprotic polar solvents** suitable for **application** in **SC**, starting from renewable chemical platforms.

The **new solvents** derive from **fruit acids**.

Lactic acid (R= Me, and other α -hydroxy acids – fruits acid) represent an excellent chemical platform.

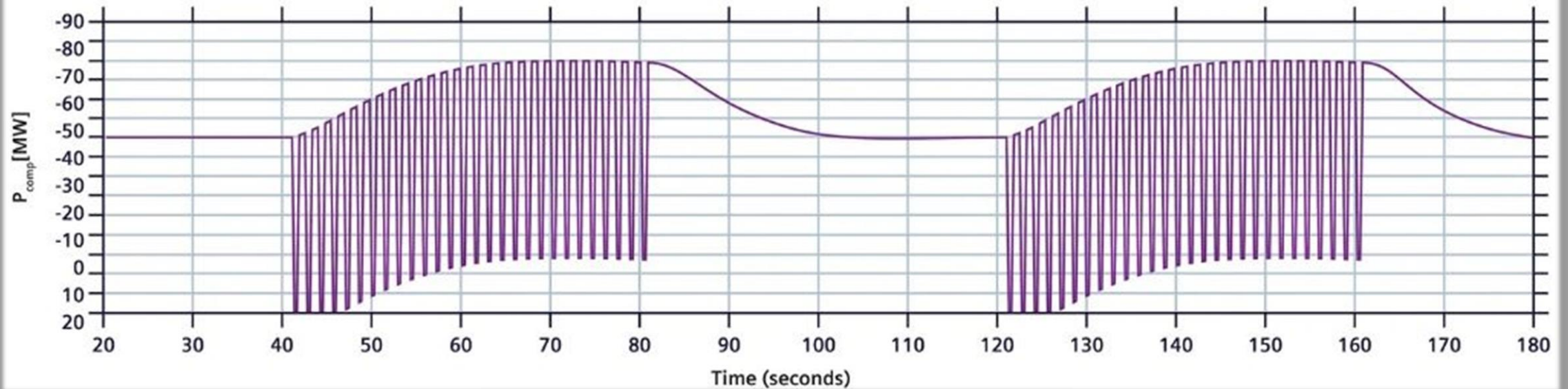
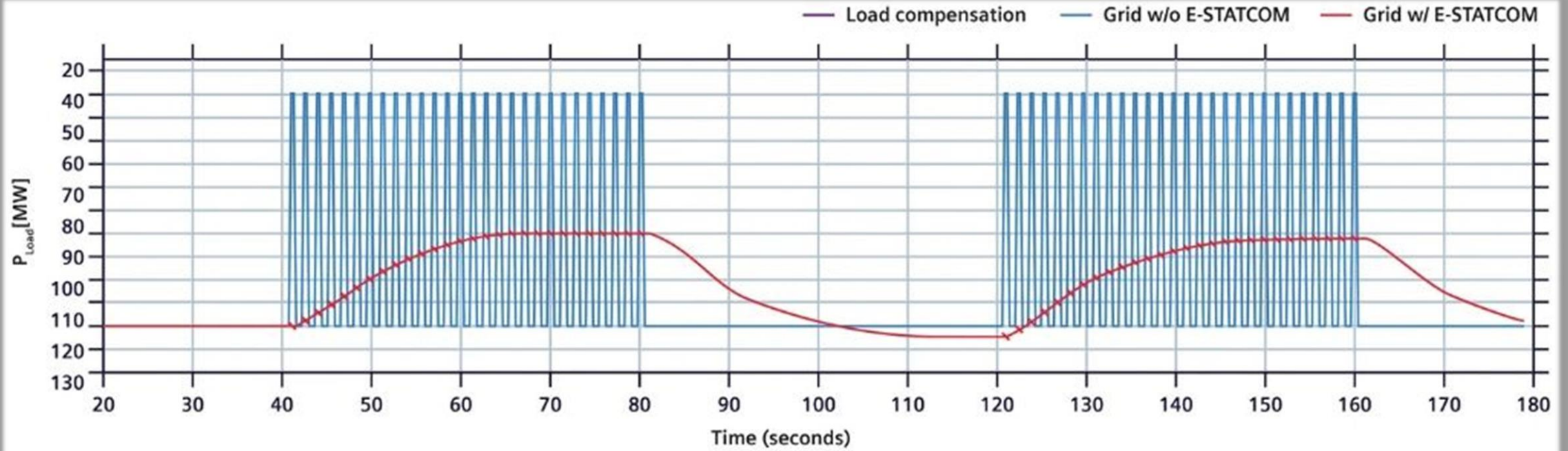
Starting from **lactic acid** and **glycolic acid**, we have synthesized five different products, tested as solvents for **electrolytic solutions**:

1. LA-H,H
2. LA-C₅H₁₀
3. GA-H,H
4. LA-Me,Me
5. LA-Et,Me



LA-H,H has shown best performances in combination with **TEMABF₄**

Supercapacitors: Solving AI's Energy Spikes - IEEE Spectrum



China is already doing this.



Research activities are growing rapidly in CN. new production facilities are being built for further SC production capacity - all aim at the huge demands in Connection with grid modernization and AI Centers.

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Clean Industrial Deal

Expertise requested

- **Any public and private organization interested in energy storage, and mainly in hi-power energy storage.**