TEESMAT

The place to characterize **complex batteries** and **electrochemical systems**

WE CHARACTERIZE,
WE ANALYZE,
WE SUPPORT YOU,
WE SHARE OUR EXPERTISE,
WE HELP YOU.

SERMA TECHNOLOGIES

TEESMAT
Open Innovation Test Bed for Electrochemical Energy Storage Materials

What is TEESMAT?

- ✓ We gather into **one platform** renown research centers and companies in **Europe**
- ✓ We developed **fast** and **robust analytical workflows** using state-of-the art and cutting edge characterization techniques
- ✓ We ensure the utmost **confidentiality of your data**
- ✓ You can use TEESMAT to **promote your results**
- ✓ **SERMA Technologies** is the single entry point of the platform

When to contact TEESMAT?

At TEESMAT, you **come with a problem** (safety, performance, manufacturing processes,..),we guide you to the **solution !**

R&D issues, production flaws, safety concerns, etc...

impact negatively your industry!

BUT

Do you have the right tools to analyze the problems ?

Are you speaking to the right experts?

What TEESMAT offers?

- ✓ **Time** and **Cost effective Routines Services**
- ✓ Connection with **12+ Service Providers**, **expert** in their field
- ✓ **Fast access to 30+** state-of-the-art **characterization techniques**
- ✓ **Multiscale characterization**, from molecular to battery pack sizes
- ✓ **Expertise** on batteries and electrochemical systems

TEESMAT's success story

Client: CRF

Challenges:

- ✓ Capacity stability
- ✓ Aged Cell safety

Impact:

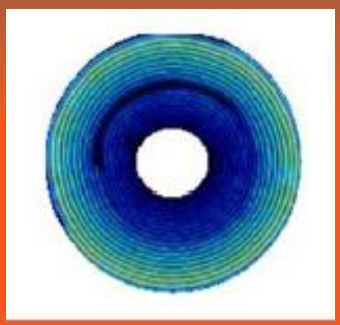
- Documented state of health of aged cells

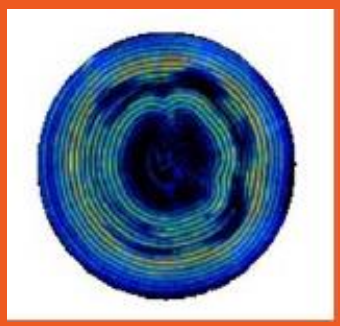
CHARACTERIZATION:

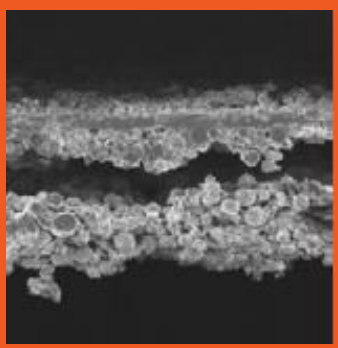
- Differential Scanning calorimetry
- Electrochemical tests
- X-ray Microtomography
- X-ray Diffraction tomography
- Accelerating Rate Calorimetry
- Incremental capacity analysis
- SEM-EDX

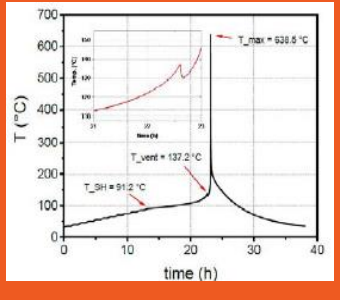
IDENTIFICATION OF:

- Mechanical degradation
- Deformation and delamination
- Electrochemical degradation









TEESMAT helped them!

- **UMICORE** – Materials quality, stability – Li-ion and solid state
- **BLUE SOLUTIONS** – Interphases investigation
- **YUNASKO** – Supercapacitor material development
- **GENES'INK** – Optimization of fabrication process
- **CEGASA** – Sinc based cell quality control
- **SUNLIGHT** – Solid state battery characterization
- **E-MAGY** – Porosity evolution of Si electrodes
- **FAAM –** Optimizing Li-ion Cell assembly
- **ARKEMA –** Solid-state Li-ion stability / SEI investigation
- **CRF –** 2nd life battery safety
- **HYDRAREDOX –** Optimization of Redox-flow electrodes and membranes
- **EASYL –** Quality control of Zinc electrodes
- **ZINERGY –** Quality control on Zinc battery components

CONTACT

Cyril MARINO

R&D Engineer, Project leader

+33 4 38 78 23 96

www.teesmat.eu

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