TEESMAT

Open Innovation Test Bed for Electrochemical Energy Storage Materials

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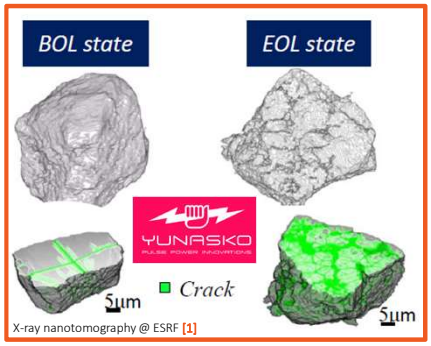
Operando Nuclear Magnetic Resonance - X-Ray scanning nano spectroscopy - Acoustic measurement -SEM – FIB – TEM - XPS-Auger - In-situ Raman spectroscopy - Accelerated degradation cell test - Blast Box and ARC - Modeling - Incremental capacity analysis - Hard X-ray total scattering and many more

SOME OF TEESMAT ACHIEVEMENTS more to see at www.teesmat.eu

CHALLENGE: Stability of new batteries with fast charge and long cycle life.



X-ray nanotomography @ ESRF [1]

SOLUTION: To explain the degradation mechanisms, hard X-ray scattering and nanotomography (ESRF), gas analysis evolution (ZSW) Raman spectroscopy (CERTH), thermal signature and acoustic emissions measurement (CEA) were used.

IMPACT: The documentation of the limiting factors support the anticipated improvements for fast charge and long cycle life of hybrid electrochemical devices.

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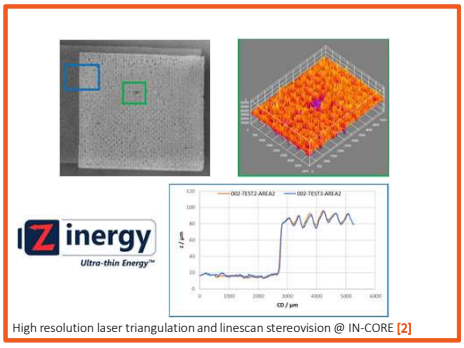
CHALLENGE: Real time measurement of printed film profile for Quality Control.



High resolution laser triangulation and linescan stereovision @ IN-CORE [2]

SOLUTION: High resolution laser triangulation and linescan stereovision systems brought by IN-CORE.

IMPACT: Computer vision permits the real time control of printed layer thickness and production quality at each critical production step enabling the identification of setup, production process and equipment related variations early on.

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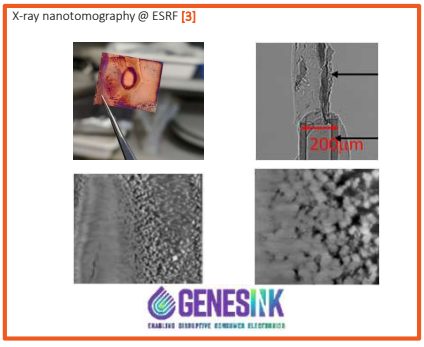
CHALLENGE: Reliable copper metallization for current collector in energy storage application.



SOLUTION: Identification, mapping, and follow-up of the copper oxidation state. Mapping of the sheet resistance (SEMILAB), XPS (CEA), hard X-ray Scattering (ESRF), RAMAN spectroscopy (CERTH).

IMPACT: Improved Cu-metallized substrates production. More reliable products with lower environmental impact than conventional methods.

www.genesink.com

REFERENCES: [1] Vanpeene, V. et al., POWER-D-21-06129. [2] Contact : Christoph Bay - cba@incore-systemes.com [3] Contact: Victor Vanpeene victor.vanpeene@esrf.fr

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