

**THE EVENT DEDICATED
TO THE MATERIAL CHARACTERISATION FOR INDUSTRY**

High Level Characterisations

To support Industrial ambitions

Why Start-up businesses manage to develop partnership
with the NANO ELEC PLATFORM for Advanced Characterisation

Sophie BOUAT,
PhD Material Expert in Industry



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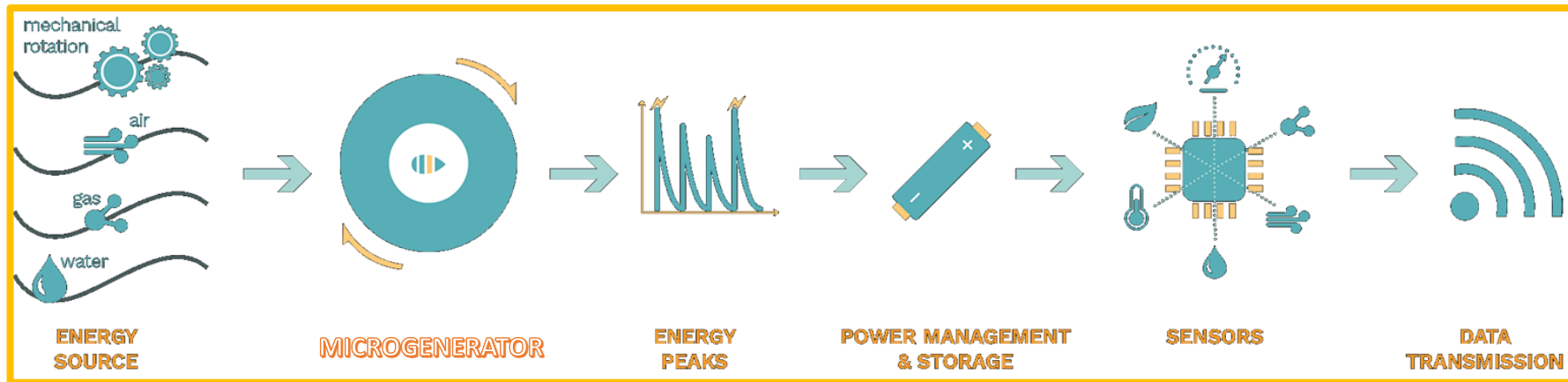
Start-up in the domain of energy harvesting for IoT

Energy Harvesting

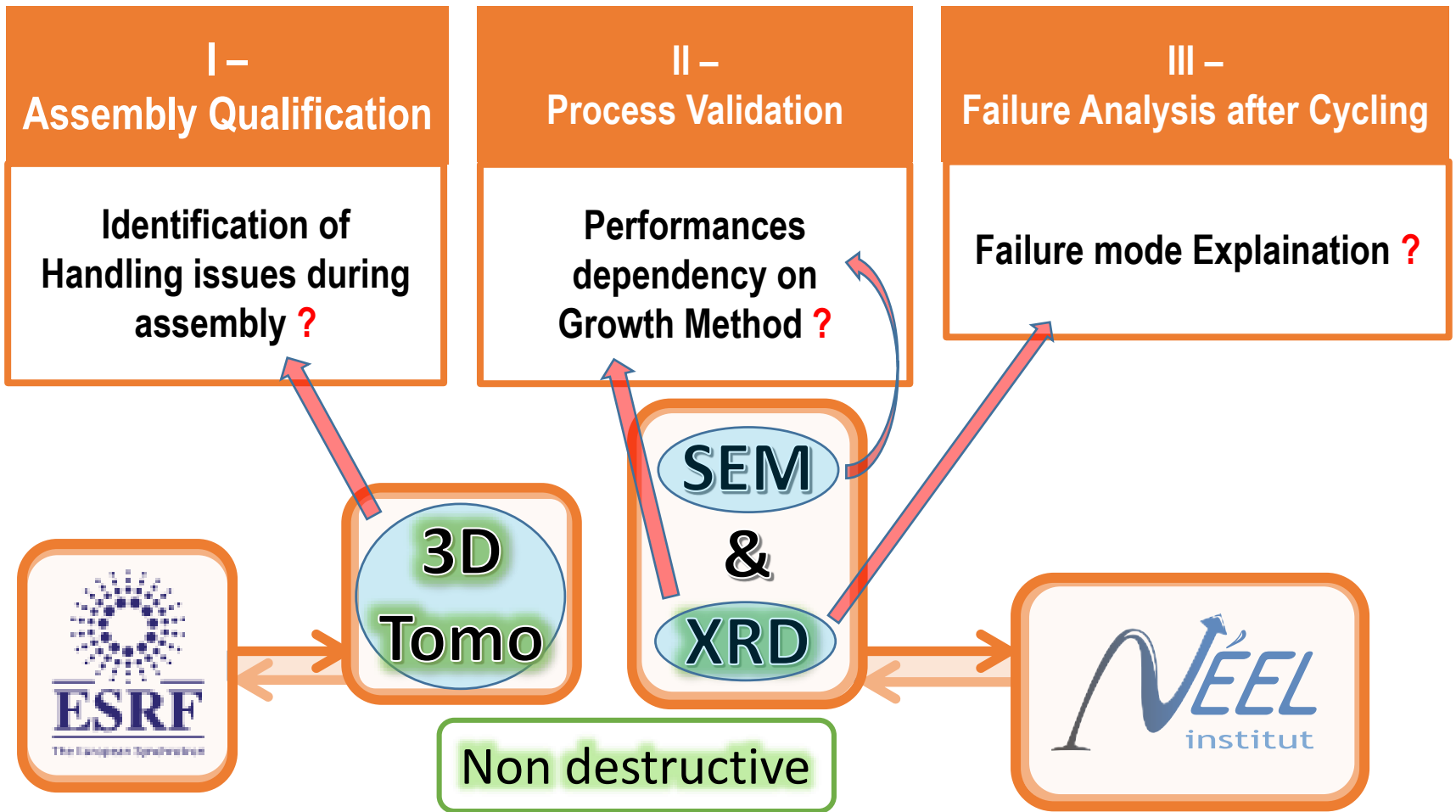
Generating Energy from Low speed and Low force movements

- The micro-generator is a unique combination of magnetic and piezoelectric materials. The magnetic material permits the generator to be actuated from low force movements, while the piezoelectric material allows the device to generate energy at any motion speeds.
- Energy peaks are converted to useable energy via a high-efficiency patented power management electronics, delivering energy in the 100μW to 10mW range.

From Energy Source to Data Transmission



High level characterisation to support industrial ambitions



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I – Assembly Qualification

(a) Handling issues during Assembly

(b) Correct Assembly

II – Process Validation

Growth method comparison

(a) XRD diagrams

(b) SEM: Chemical Analysis

III – Failure Analysis after Cycling

Failure analysis

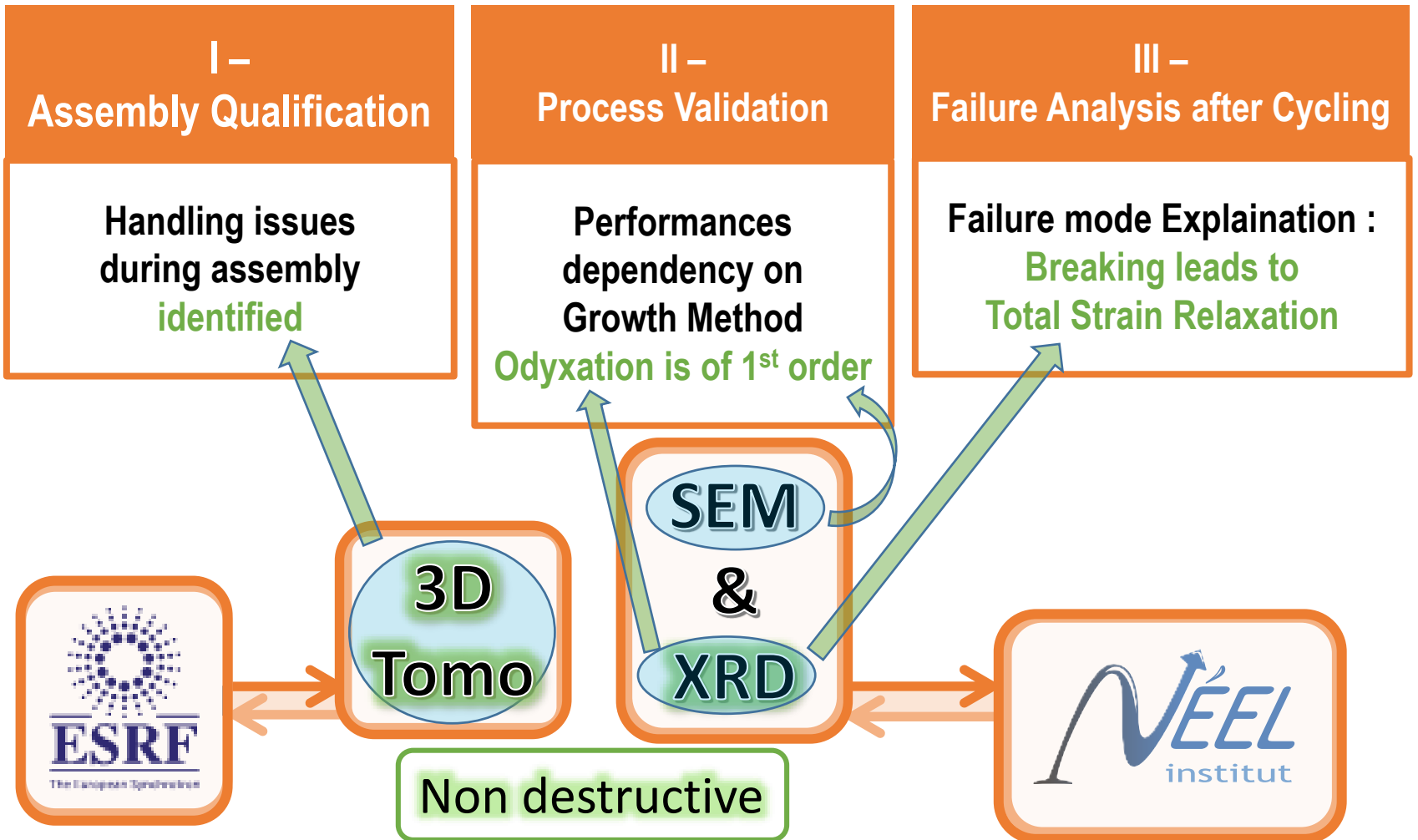
(a) XRD diagrams

(b)

- Crystallite size (nm)
- Strain inside crystallite (%)

Sample	Crystallite size (nm)	Strain inside crystallite (%)
Reference	~45	~10
Cycled piece - Broken	~15	~2

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Thank you!

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