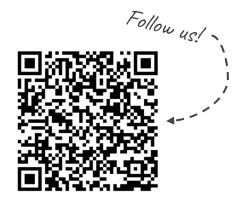
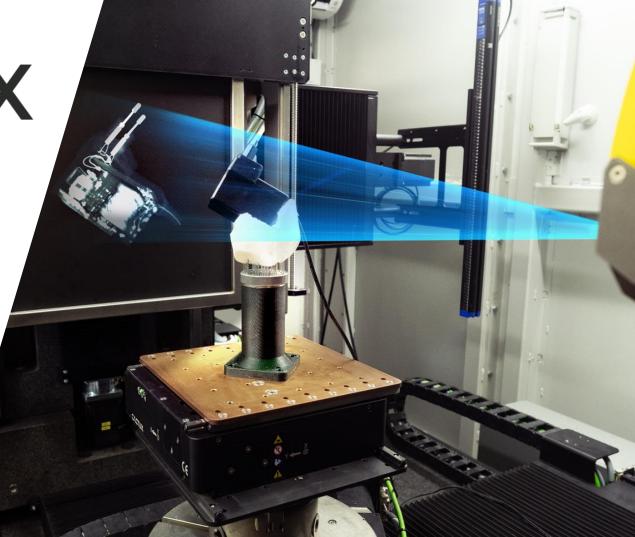
CACTUX

Technological company est. 2020 developing SMART solutions for Xray technologies.



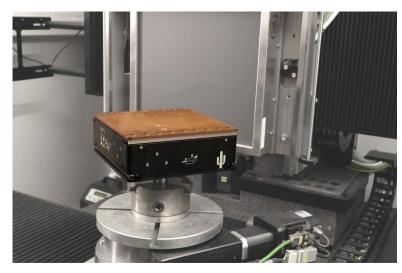


# **ABOUT US**





Our goal is to to be an **innovation-driven company** developing and providing **beyond state-of-the-art technologies worldwide.** 





We are technological company

We develop SMART solutions for X-ray NDT technologies

We cooperate with global leaders Baker Hughes Confidential **10** Team members

# **3** Advisory Board members

# **OUR PRODUCTS**

Enhancing the quality and efficiency of X-ray NDT analysis



CACTUX

# SAMPLE MANIPULATION: IDENTIFIED CHALLENGE



# Sample centering was ineffective due to manual workflow:

Turning off the X-ray source
Opening the door
Moving the sample manually
Closing the door
Turning on the X-ray source

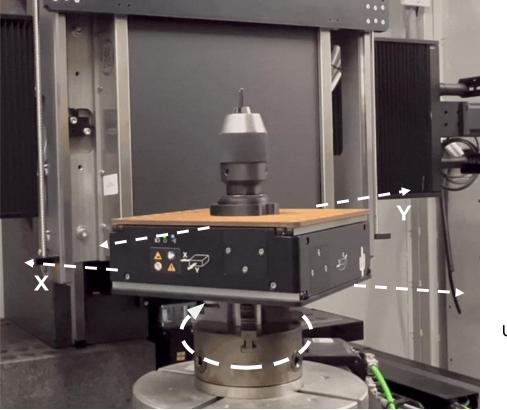
# SaguaroX effective sample centring

CACTUX

0.5

# working hour saved per day

# SAMPLE MANIPULATION: OUR SOLUTION



# MOTORIZED TRANSLATION STAGES SaguaroX

CACTUX

 $\rightarrow$  Two axis translation

- $\rightarrow$  Wireless communication
  - → Battery powered

# IMPACT

# $\rightarrow$ For internal quality control

up to **33%** increase in scanning capacity

 $\rightarrow$  20% decrease in service costs



#### SaguaroX S

→smaller size →diminished load capacity →for more compact CT

# SaguaroX M

→ for any sample of up to 15 kg

### SaguaroX M Heavy

→enhanced load capacity up to 30 kg →for heavy samples

#### For V-tomex L:

# For V-tomex M and L:

#### For V-tomex S and M:







#### SaguaroX S

→ smaller size → diminished load capacity → for more compact CT

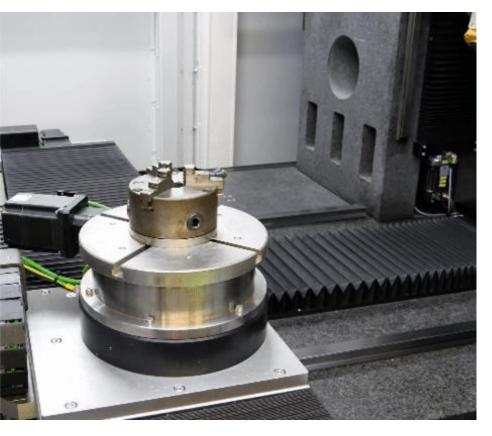
# SaguaroX M

→ for any sample of up to 15 kg Baker Hughes Confidential

# SaguaroX M Heavy

→enhanced load capacity up to 30 kg →for heavy samples

# SAMPLE MANIPULATION: SAGUAROX INSTALLATION



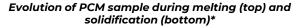
# Up and running in less then 15 min.

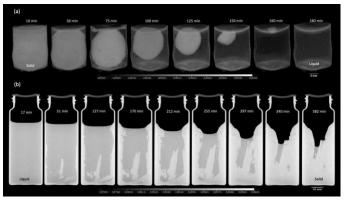
CACTUX

- 1. Mandrel is attached to SaguaroX
- 2. SaguaroX is placed in the chuck and fasten
- 3. Arizona software is installed

# **IN-SITU TESTING: IDENTIFIED CHALLENGE**

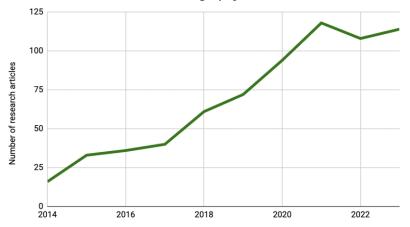






More accurate information about samples internal structure behaviour:

- Simulation of life-cycle
- Simulation of environment conditions 2.



#### Number of research articles with keywords: In-situ, X-ray Computed Tomography

# for CT systems

 $\rightarrow$  expansion of capabilities

# for users

 $\rightarrow$  more data

\*Jorge Martinez-Carcia et al., Volumetric quantification of melting and solidification of phase change materials by in-situ X-ray computed tomography, Journal of Energy Storage, Volume 61, 2023, 106726, ISSN 2352-152X, https://doi.org/10.1016/j.est.2023.106726

# **IN-SITU TESTING: OUR SOLUTION**

→ Modular Sample Stage

> → In-situ Chamber

# In-situ BOX

CACT

- → Climate control -30 to +60°C
  - → Power supply option 230V
- → Modular Sample Stages for Thermal testing Battery testing Electronics testing

# **IN-SITU BOX LINE**

CACTUX

# For V-tomex M and L



# **Thermal BOX**

 → for the study of the temperature effect on the samples
→ -30°C to 60°C climate control

# **Battery BOX**

- → for simulation of battery lifecycle
  → electrochemical cycling +
- climate control

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# **Electro BOX**

 → for simulation of space conditions for electronics
→ power supply + climate control



# For Micronex, Nanomex, V-tomex



# In-situ soldering PLATFORM

- → For Radiography
- → Heating up to 400°C
- → Simulation of soldering process for Testing quality of solder joints

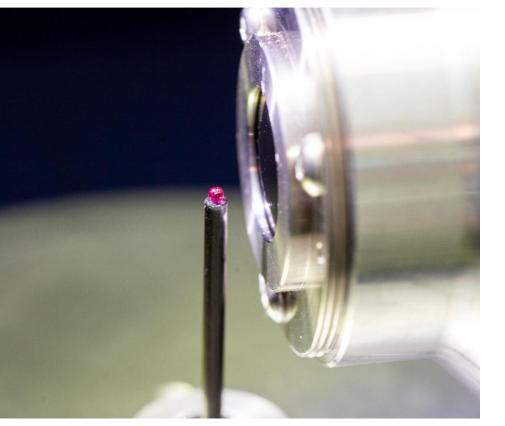
Analysing route cause of void formation

Understanding thermo-mechanical behaviour of soldering

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# **CALIBRATION PHANTOMS: OUR SOLUTION**



# **Calibration Phantoms**

CACTU

 → for voxel-size calibration
→ for spatial resolution calculation
→ for manipulator inaccuracies correction

IMPACT → For higher quality results published results: **1.5%** improvement in data accuracy

# **CALIBRATION PHANTOMS LINE**

### For Nanotom



# **Voxel-Spirit**

→ for quick and intuitive voxel size calibration

# **Resolution-Spirit**

→ precise spatial resolution estimation according to ASTM E1695-95 standard

# **R1-Shadow**

→ correction of rotational stage inaccuracies and CT data registration

# CACTUX

Technological company est. 2020 developing SMART solutions for X-ray technologies.

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