

**Call:**

**Factories of the Future 12**

Industrial technologies for advanced joining and assembly processes for multi-materials

**Proposal:**

**Hi-RAMP**

High Reliability Assembly and Multi-material Processing.

## **Project Focus:**

Advanced electronic components comprised of multi-materials.  
These are impacted by buried joining defects between layers:

- voids
- delamination.

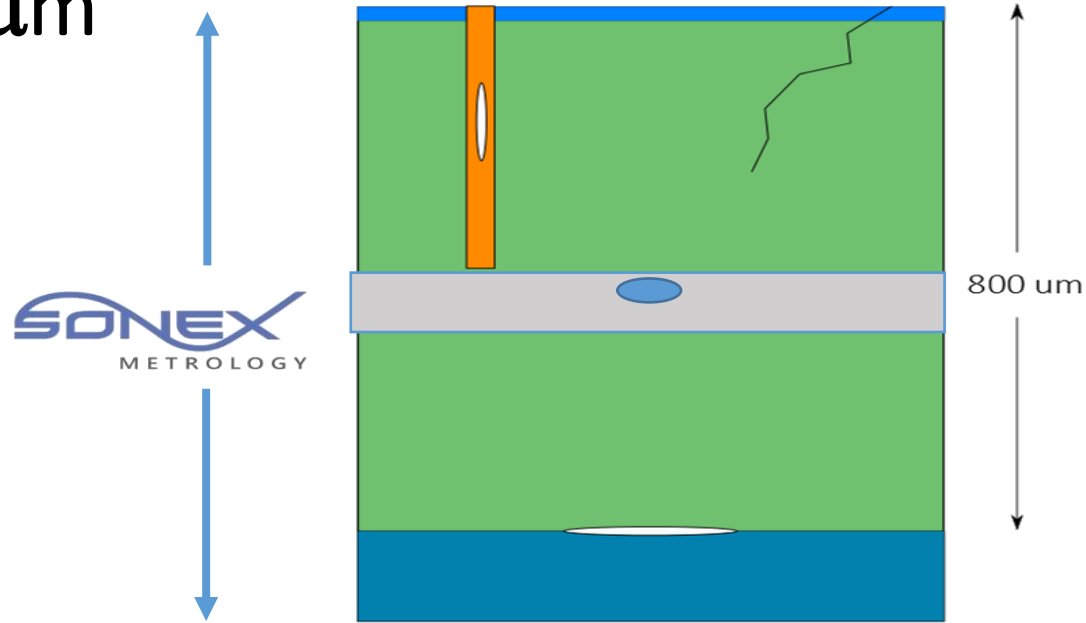
## **HI-RAMP will improve YIELDS:**

Automated, non-destructive detection of buried defects  
In line within the production process.

## **Goals:**

Improve material joining processes  
Improve production yields.

# Innovation: Photoacoustic in line imaging through optically opaque materials to 800 $\mu\text{m}$



## Current applications

- Delamination (tape, pad, wafer)
- Metal Voiding
- Buried micro-fractures

## Application roadmap

- Film Thickness Measurements
- Film Uniformity Measurements
- Bio electronics



## **Consortium**

### **We have:**

NDT Sensor Engine, End-User, Optics, Correlation,  
Dissemination.

### **We need:**

Surface Conditioning, VCSEL Lasers, Simulation Software.



**For more information on consortium or Sonex's sensor**  
**[james.croke@sonex-metrology.com](mailto:james.croke@sonex-metrology.com)**