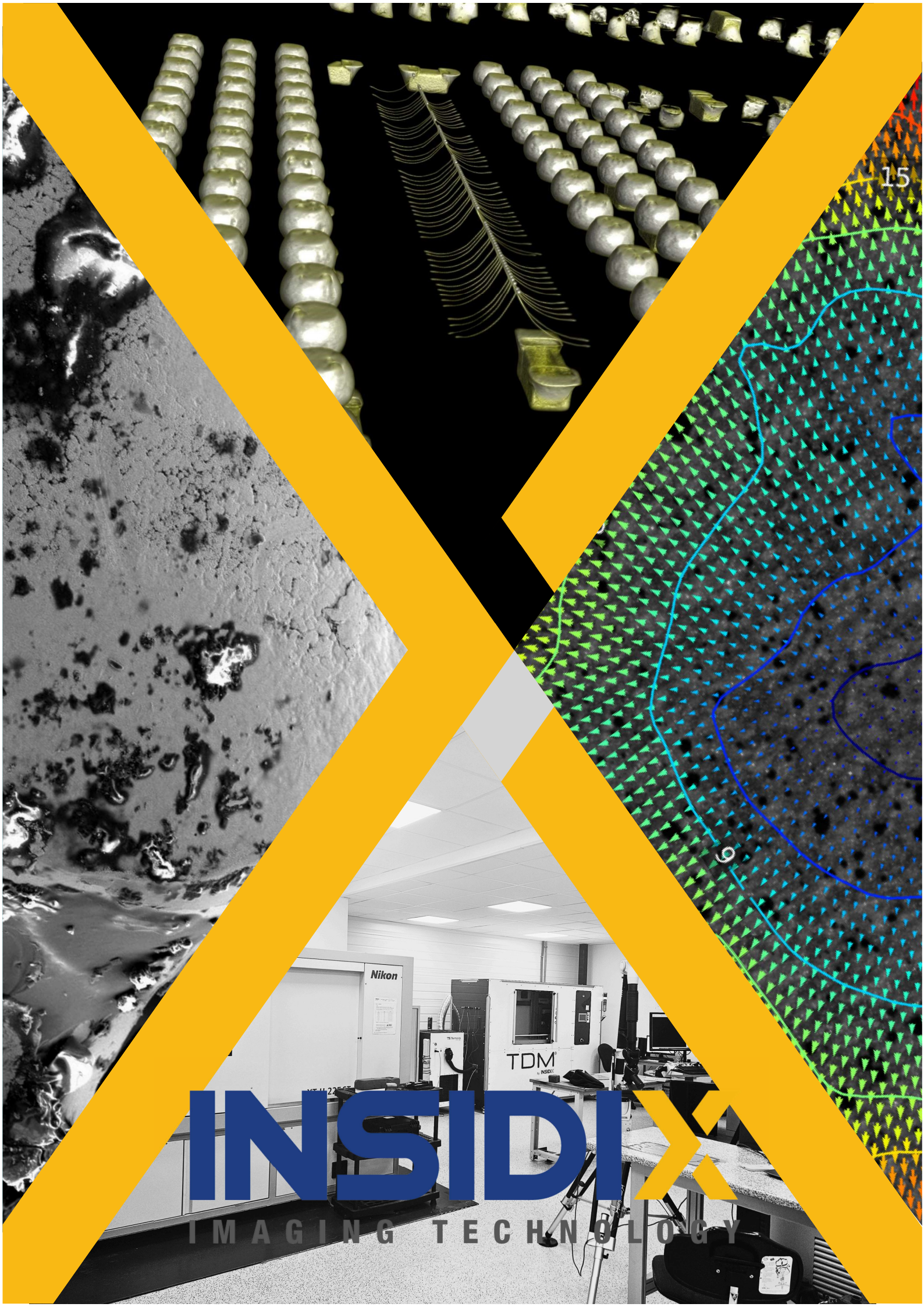

INSIDIX

IMAGING TECHNOLOGY

LAB SERVICES

INSIDIX delivers cutting-edge lab services for a wide range of industries, combining precision and innovation.

CONTACT

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38360 Noyarey

insidix@insidix.com

www.insidix.com

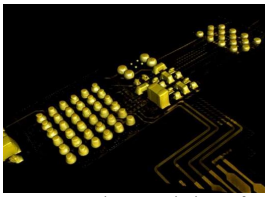
CUSTOM ANALYSIS

The team at INSIDIX is mainly composed of engineers, with a high understanding of the possibility of each analysis method. This helps to design custom test plan that can address complex problems. These custom analyses include for example the use of X-Ray with an environmental condition changing (pressure, temperature, ..). Each test plan is designed with the customer, taking into account the different requirements and with the goal to solve the problem.

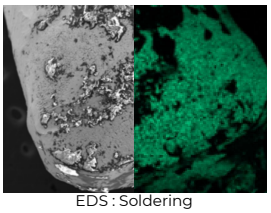
ELECTRONIC ANALYSIS

Process Qualification

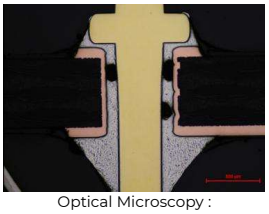
INSIDIX helps its customers in optimizing / improving / tuning their processes. Process qualification can use both Non Destructive Testing systems (X-Ray computed tomography, Acoustic microscopy,) or Destructive analysis methods (cross section analysis, SEM,..). INSIDIX also offers analyses according to international standards like IPC A 610, with certified IPC specialist.



Tomography : Morphology of balls in a BGA



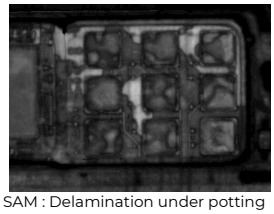
EDS : Soldering
Detection of Sn



Optical Microscopy :
Absence of material



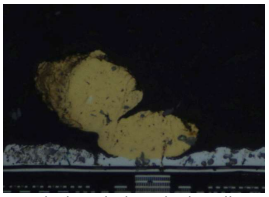
Tomography :
bubble in soldering



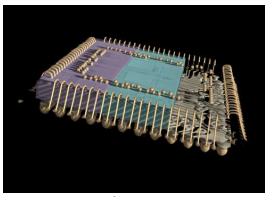
SAM : Delamination under potting

Failure Analysis

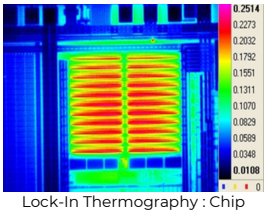
Using more than 20 years of experience in the electronic sector, INSIDIX can provide an expertise on failing electronical parts or assemblies. INSIDIX can design and execute a test plan incorporating various analysis methods to identify and assess defects. These analyses are made possible by the state-of-the-art systems, capable of detecting even the smallest defects.



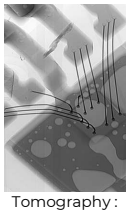
Optical Analysis : Wire bonding



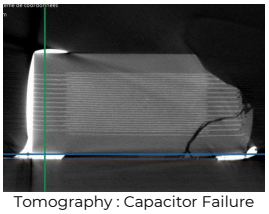
Tomography : Component analysis



Lock-In Thermography : Chip



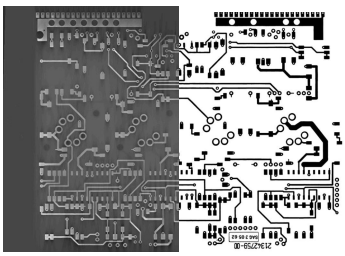
Tomography :
Porosity analysis



Tomography : Capacitor Failure

Retro-Engineering

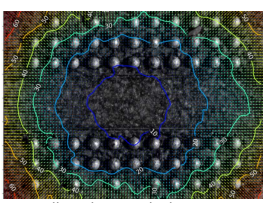
There is a growing demand to redesign and remanufacture complex PCBs from the final sample. Insidix has developed a cost-effective solution using high-resolution computed tomography to extract a PCB's layout and convert it into a Gerber file without damaging the original sample.



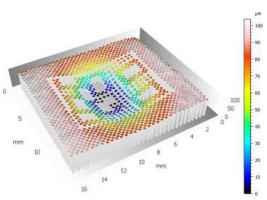
PCB Retro-Engineering

Thermomechanical Analysis

The temperature is a very complex environmental condition and can often lead to failure on electronic components or assemblies, right after production or during the life of the product. INSIDIX offers thermomechanical analyses, using its TDM patented system, in order to understand and measure the impact of the temperature on any sample.



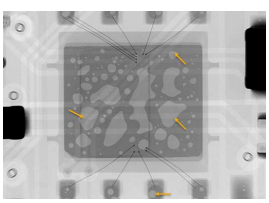
Dilatation Analysis : BGA



Coplanarity Analysis : BGA

Production Control

Its reactivity, team efficiency and deep knowledge on the different analysis technics make INSIDIX a reliable partner for production control.
INSIDIX also helps its customer when a production crisis arises.

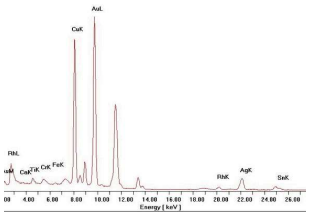


Void Quantification : SOP

MATERIAL ANALYSIS

Chemical Analysis

By utilizing various material characterization techniques, such as µXRF or MEB/EDS, INSIDIX can provide detailed chemical analysis reports for a wide range of samples. This can be used to characterize a material , to detect a pollution or to understand complex material diffusion mechanisms.



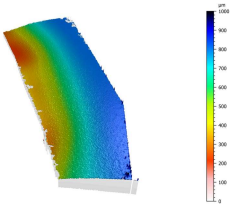
µ-XRF :
Quantification of Cu in a solder



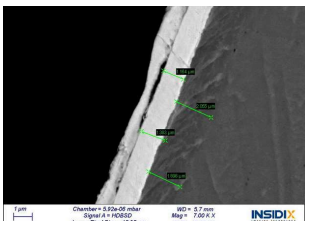
EDX : Spectral analysis of an assembly

Thin-Films Measurement

Measuring the thickness of various coatings or films is a standard request in any industry. In combining different inspection methods, INSIDIX can measure almost any kind of films, from 100 nm to several mm.



OCT : Thickness Measurement on a polymer membrane

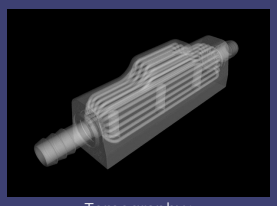


MEB : Thickness measurement of a gold thin-film (2µm)

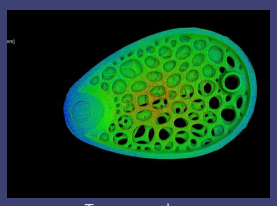
MECHANICAL ANALYSIS

Metrology

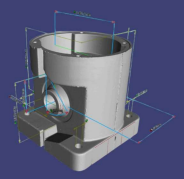
Through the use of different metrology systems (arms, CT scanners, optical solutions ..), INSIDIX offers dimensional controls on various parts and assemblies. The expertise of its metrology engineers, combined to the high level of reactivity, and state of the art systems, make INSIDIX a reliable partner for metrology control.



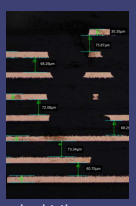
Tomography :
Design Validation



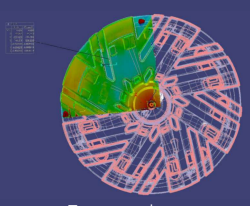
Tomography :
CAD-Volume comparison



Tomography :
Metrologic Control



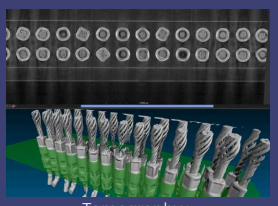
Optical Microscopy :
Layer Measurement



Tomography :
Wheel Rim validation

Assembly Verification

The verification of an assembly process can be challenging, especially for complex parts, with a lot of sub systems and internal mechanisms. The use of computed X ray tomography can, for example, help in understanding the level of quality of any assembly. INSIDIX also uses the Synchrotron in Grenoble for assemblies with dense material, needing high resolution and very low artefacts (gold samples, ..).



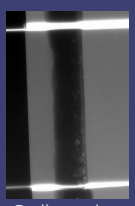
Tomography :
Crimping process



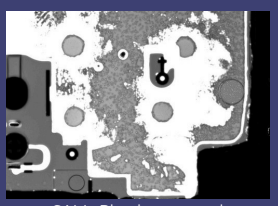
Tomography : Battery Failure



Optical Microscopy :
Tapping Process



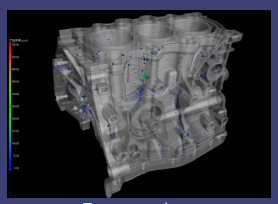
Radiography :
Soldering quality



SAM : Plastic on metal bonding verification

Health of Material

The various imaging systems at INSIDIX can be used to detect and characterize porosities, cracks and any defect in the material. INSIDIX can provide guidance on the best analysis technology, depending on the sample (size, material, ..) and the size of the element to detect (porosity, crack, ..).



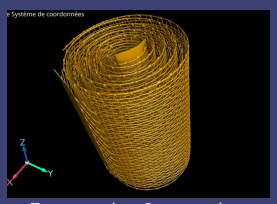
Tomography :
Porosities metallic parts

Construction Analysis

INSIDIX provides detailled construction analysis report on any part, in order to understand the assembly process, the different parts used in the assembly and their locations. A detailed study can also be performed on the electronics if necessary.



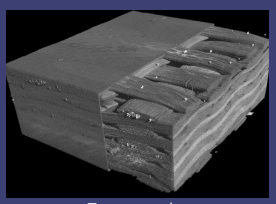
Tomography : Construction
Analysis of a sonar



Tomography : Construction
Analysis of a battery

R&D support

INSIDIX works in long term partnership on R&D projects, where INSIDIX will offer its deep knowledge in different analysis methods.



Tomography :
Complex layering process

SYSTEM SALES

INSIDIX offers a range of analyses and measurement systems for laboratories. Available services include the sale of the systems, the installation, the maintenance contracts as well as the training and support provided by the lab technologies experts.

TDM

Topography and Deformation Measurement under thermal profiles.
1 µm precision.
-65°C to +400 °C thermal range.

TDM by INSIDI









X-RAY TECHNOLOGIES

Nikon

Radiography and Tomography equipments.
From 160 kV to 450 kV.
Microfocus sources from 1µm resolution.

LASER SCANNING

Laser scanning systems with articulated arms, offering precision down to 50µm.
Possible retrofit on CMM systems.

Nikon









OPTICAL MICROSCOPY

Nikon

High resolution optical microscopy.
Embedded cameras.
Bright Field / Dark Field modules.
Down to 115 nm resolution.

SCANNING ELECTRON MICROSCOPY

EVO and SIGMA SEM Systems.
Standard or FEG columns for 1 nm resolution.
Fittable EDS and EBSD modules.

ZEISS









SAMPLES PREPARATION

PRESI

We provide turnkey sample preparation labs, including cutting, mounting, and polishing systems for all use cases.

SCANNING ACOUSTIC MICROSCOPY

Tailor-made systems.
Planar and non-planar geometries.
Accomodation of large samples.
kHz to GHz analysis.

PVA TePla OKOS









OCT SYSTEMS

PRECITEC

Submicron accuracy optical tomography for thickness and topography measurement.
Up to 70,000 measurements/second.