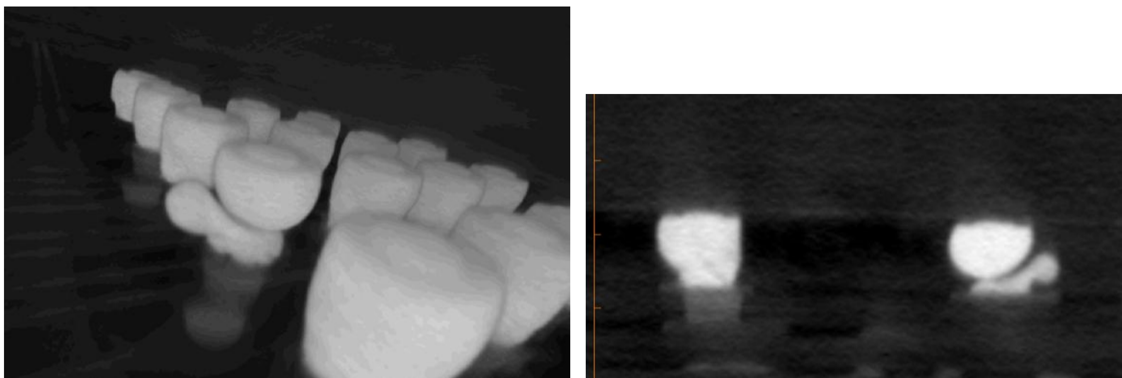
C2MI Centre de Collaboration MiQro Innovation

X-RAY TOMOGRAPHY: SEE INSIDE YOUR PRODUCT IN 3D

Analytical Services

X-Ray imaging is a standard non-destructive technique to visualize inside an electronic product, especially the different metallic objects that are part of it (wire bonds, solder interconnects, substrate layers, etc.). Multiple X-Ray pictures, at different angles of the sample make it possible when using tomography algorithms to create high resolution 3D representations of your object and then do advanced characterization of it.

One advantage of X-Ray tomography is to visualize only the layer of interest and to hide the masking or noisy ones that are typically overlaid on a standard X-Ray inspection. Multiple virtual Z-sections and X-sections can be done in any direction on the model, replacing destructive techniques like mechanical sections. Many defects normally difficult to identify like solder cracks and micro-solder voids can easily be imaged by this technique. As it is a non-destructive, it is possible to see how defects evolve during aging or stress.



3D view and virtual X-section of a non-wet flip chip bump

Such a specialized high resolution tool available at C2MI allows micrometer range resolutions on a region of interest on full size electronic modules with minimal sample preparation. Depending on the required quality and magnification, scans can be done in a few hours, although low resolution scans can be done very quickly in less than one hour. Metrology data can therefore be extracted from the model reconstructed from this non-destructive technique.

For more information, please contact:

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