

# AN EXPERIMENTAL STUDY BY X-RAY MICROFOCUS RADIOSCOPY SYSTEM FOR NON DESTRUCTIVE TESTING (NDT)

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**Abstract :** Non Destructive Testing (NDT) is an integral part of the methods used in the field of industry to ensure the manufacturing quality of a sample, then its integrity during its life. The most important part of the NDT is related to the quality control of the objects and the search for defects. In front of a given problem, it is thus necessary to choose the techniques to be used. In this work we used the microfocus radiography system for the quality control of the metallization step of silicon solar cells, therefore, the manufacturing characteristics of the electronic components, and with this NDT system, we also carried out an inspection of welding defects of metals. This technique of imagery in real time is based on the transmission of X-rays resulting from a micrometric focus tube ( $\approx 10 \mu\text{m}^2$ ) in Molybdenum and without filtering allows to detect the classes of micrometric geometry defects on surface and inside the volume, the attenuation difference of X-rays according to the nature of the crossed medium makes it possible to obtain an image for the samples, this analysis helps us to ensure their quality of manufacture.

**Keywords :** Non Destructive Testing (NDT), solar cells, electronic components, imagery in real time, X-rays