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**Ultrasound high resolution imaging of research reactor fuel cladding
thickness**

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ABSTRACT

Nuclear research reactors include dispersion fuels corresponding to fissile material dispersed in an aluminium matrix embedded in an alloy cladding. The cladding alloy seals the fissile material and is the first safety barrier. Thus, its thickness measurement is an important parameter of the fuel safety. In AREVA NP, it is nowadays performed through a destructive process where the plate is cut and the cladding thickness measured by optical microscopy.

The aim of the developments is to replace the destructive analysis by a non-destructive analysis. Due to the fuel grains dimensions, a high-frequency scanning acoustic microscope already implemented in the nuclear domain is proposed to acquire surface in-depth images. The present paper will then focus on the experimental set-up and preliminary results, which allow a high-resolution ultrasonic imaging of the cladding thickness.