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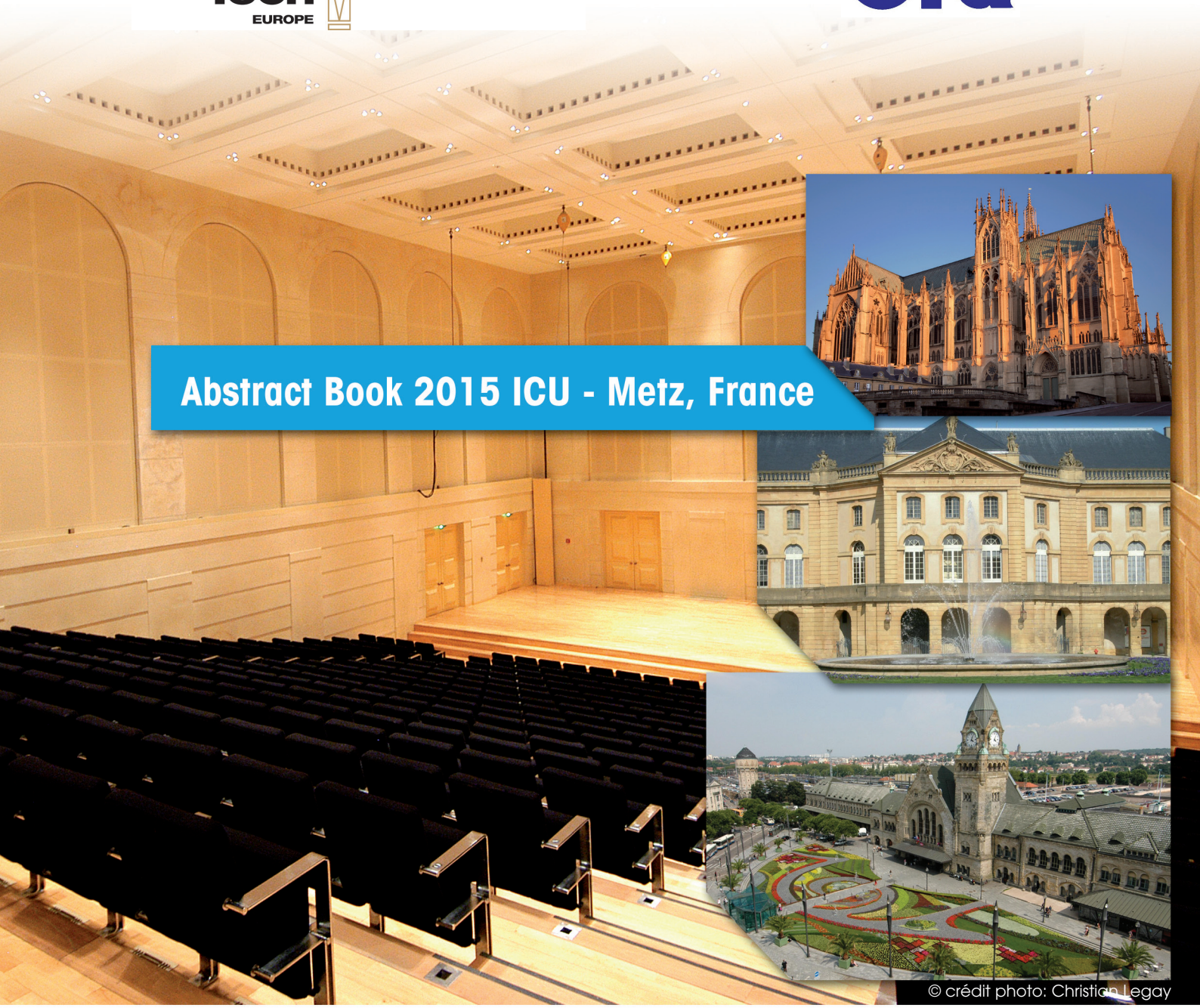

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eter) fabricated on the backside of the substrate on which the solid/liquid interface is characterized. These transducers are used as emitters and receivers and connected to a Vector Network Analyzer used to achieve electrical characterization of Sij scattering parameters. The very sensitive (2.10-4) evaluation of the reflection coefficients at the interface makes it possible to determine the properties of the reflected acoustic echoes in time domain using inverse Fourier Transform. This sensitivity has also made it possible to follow, in a first step, evaporation kinetics of drops of some water/alcohol mixtures at the solid/liquid interface from the tracking of the concentration evolution. Therefore, this method also presents potentialities to track drying kinetics.

Wed 14:30 Main Hall Physical acoustics (poster)

Ultrasonic Loading Effects on Silicon-based Schottky Diodes – (Contributed, 000122)

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Motivation
Ultrasound is established to affect various properties of semiconductors. The ultrasonic wave - defect interaction is a main reason of acoustically induced effects in non-piezoelectric semiconductors. Unfortunately, the experimental data that focus on acousto-defect interaction in silicon are insufficient. This study is devoted to an experimental investigation of the modification of silicon Schottky structure properties by the ultrasonic loading at the varied conditions.
Methods
Mo/n-n^+-Si structures have been used in our experiments. The current-voltage characteristics were measured for the samples under ultrasonic loading conditions. The longitudinal waves excited in the samples were 4.1, 8.4, 13.6, 27.8 MHz in frequency and had the intensity of $W_{US} < 0.3$ W/cm^2. The ultrasonic loading temperature was varied from 150 to 330 K.
Results
The acoustically induced reversible both decrease of the Schottky barrier height and increase of the ideality factor have been observed. It was found, that (i) the US influence efficiency increased with the ultrasound intensity increasing and the dependence was close to a linear; (ii) the increase in ultrasound frequency led to the intensification of the acoustically induced parameter variation; (iii) the maximum ultrasound effect was observed at ∼210 K.
The obtained results has been analyzed on account of the inhomogeneous Schottky barrier model. The ultrasonic loading has been shown to increase the effective density of patches, and to broaden the patch parameter distribution.

Wed 14:30 Main Hall Physical acoustics (poster)

A nondestructive imaging method for detecting defect in mortal sample by high-intensity aerial ultrasonic wave – (Contributed, 000230)

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Recently, developments have improved methods employing aerial ultrasonic waves for contactless inspection of internal defects in solid materials such as metals, pipe walls, and fiber-reinforced plastics. Specially, this method is noncontact way differ from conventional ultrasonic inspection that is necessary to contact probe to object. Therefore, the object which cannot contact can also be inspected. We proposed an imaging method in non-destructive and non-contact way by high-intensity aerial ultrasonic wave. This method detects to image the defect area from vibration velocity distribution on the surface of object which is excited continuously in noncontact way by irradiated an aerial ultrasonic wave. In previous study, we exam to detect for imaging the defect in acryl plate by this method. In this report, we attempted to detect defect in mortal sample by this method.

Wed 14:30 Main Hall Physical acoustics (poster)

Focalization of Acoustic Vortices Using Phased Array Systems – (Contributed, 000275)

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