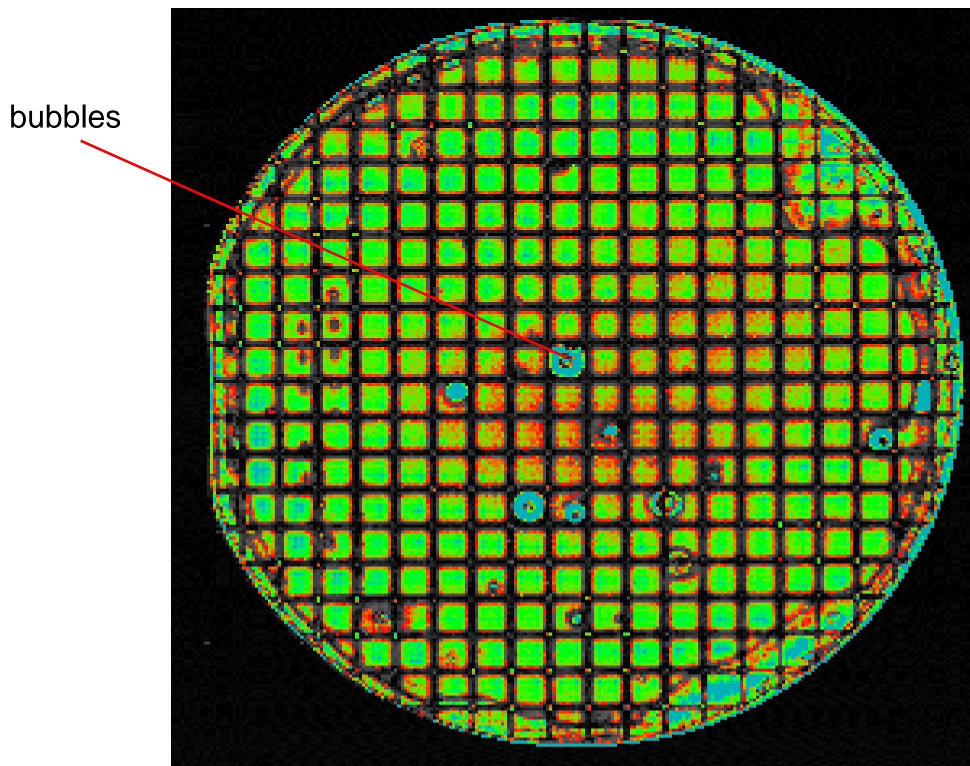
acoustic microscopy

SAM interface evaluation of a optically polished bonded silicon wafer pair

Ultrasonic frequencies ranging from 10 MHz to 400 MHz are routinely used to nondestructively characterize the homogeneity and bonding quality of materials.At these frequencies , ultrasound is extremely sensitive to elastic properies and will not transmit through air. It is an ideal tool to locate internal defects like bubbles,voids,cracks or delaminations , to display the internal features and to measure the bond quality between two or more interfaces.



Evaluation of the bonding interface with color coding. Delaminated area in blue color, the red color is showing non uniformity in the interface due to modifications of the acoustic impedance in the interface.