

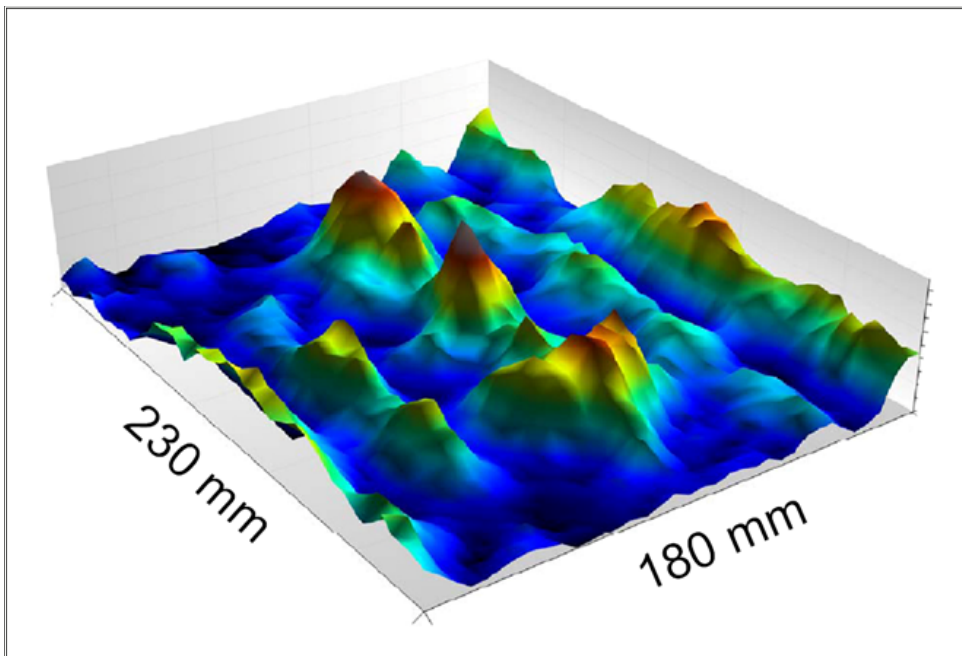
Cleaning Tank Hydrophone with Acoustic Meter

HCT-0200, MCT-1010

Despite the wide adoption of ultrasonic and megasonic cleaning, the acoustic characteristics are not well understood. The HCT hydrophone with MCT acoustic meter bridges this gap, offering a reliable solution to characterize and monitor the acoustic properties of ultrasonic and megasonic cleaners. Its unique single point sensing design allows measurements with high spatial resolution to offer true 3-dimensional mapping of the cleaning tank. The rugged construction allows routine mapping of the acoustic pressure and ultimately determination of the cleaning efficiency of the tank.

Applications

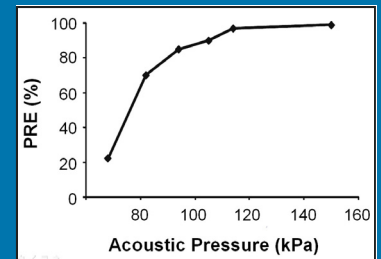
- Acquire acoustic maps to optimize cleaning efficiency of ultrasonic and megasonic baths
- Routinely spot check acoustic field of cleaning tank for process control monitoring
- Compare tank-to-tank performance to maintain matching in production environments
- Tune process recipes by characterizing the ultrasonic cleaner fully loaded with substrates
- Identify cleaning tank issues such as debonded or malfunctioning transducers
- Collect lower level acoustic information by connecting probe directly to an oscilloscope



Acoustic Pressure Plot of a 40 kHz Industrial Cleaning Tank



HCT Hydrophone with MCT Acoustic Meter



Effect of Acoustic Pressure on PRE for 520 nm particle size

[Courtesy of Seoul University, Kim, et al]

Technical Specifications

HCT-0200 Hydrophone

- *Useful Frequency Range:*
20 to 200 kHz
- *Nominal Sensitivity:* 1.0 V/MPa
- *Maximum Operating Temperature:* 70 °C
- *Chemical Compatibility:* Aqueous Solutions
(Stainless Steel)
- *Probe Dimensions:*
Shaft Length: 500 mm
Shaft Diameter: 6 mm
Handle Length: 165 mm
Handle Diameter: 25 mm
- *Cable:* 1.5 m coaxial (BNC)

MCT-1010 Acoustic Meter

- *Pressure Range:* 20 kPa to 20 MPa
- *Time Averaging Intervals:*
100 msec, 1 sec, 10 sec
- *Range Settings:*
20 kPa to 200 kPa
200 kPa to 2 MPa
2 MPa to 20 MPa
- 4 digit LCD display
- *Power:* 9 V battery (dual)
Low battery indicator
- *Output:* V_{RMS} with ref to display (BNC)
- *Dimensions (with display guard):*
111 mm (W) x 190 mm (L) x 57 mm (D)

Specifications are subject to change without notice.

Simple Measurement Set-up

