

A close-up photograph of several industrial pipes. The pipes are dark and metallic, with a rough, textured surface. They are arranged in a row, and a thick, brownish, viscous liquid is flowing out of the open ends of the pipes. The liquid has a foamy, aerated appearance. The background is a dark, textured wall with some small holes or indentations.

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Developing an advanced
colloid charge sensor

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Our client needed a robust industrial colloid sensor suitable for in-line sensing in a harsh chemical environment, ruling out conventional electrochemistry and optical methods.

In the water processing industry, ensuring that suspended solids are coagulated and filtered is a time consuming and costly task, but with steep legislative penalties if the waste water is not treated correctly. Zeta potential measurements are critical to ensure the correct dosing of coagulant and flocculant.

We identified a number of physical properties of fluids which are closely correlated to zeta potential, and a preferred acoustic method for probing the physical properties. Our ultrasound method utilises a solid-state sensor, with no moving parts.

Our science and engineering teams have designed, built and tested the sensor in field conditions, showing a long sensor lifetime and high sensing accuracy.

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