

Non-Contact EM Turbulence Sensor

TECHNICAL REVIEW & DUE DILIGENCE

PROBLEM

A broad non-contact turbulence-sensing concept spanned fluid classes with radically different conductivity, signal magnitude, and noise constraints.

WORK

The diligence review worked from motional-induction physics through expected signal magnitude, instrumentation limits, noise sources, and commercial beachhead selection.

OUTCOME

The concept closes for a molten-metal beachhead; seawater, blood-flow, and ordinary industrial-electrolyte cases do not close as standalone products under normal sensor constraints.

REPRESENTATIVE CONTENT

- Separates physical realizability from commercial viability by fluid class.
- Uses signal-to-noise closure rather than qualitative mechanism plausibility as the decision criterion.
- Converts a broad sensing claim into a narrower product regime with an executable validation path.