Pacific Northwest NATIONAL LABORATORY

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Battelle Number(s):

15640

Patent(s) Issued

Available for licensing in all fields

Available Technologies

Non-invasive Ultrasonic Fluid Processing Technology

SUMMARY

Battelle researchers at Pacific Northwest National Laboratory have developed a non-invasive technology that introduces intense, focused ultrasonic energy into a process stream to rapidly heat or treat fluids within process piping or vessels.

Whole or partial rings of acoustic transducer elements are attached to the outside surface of process tubing, piping, or vessels. The mounted transducers may operate at a variety of frequencies and modes depending on the process fluid and desired effect.

Several features of this technology overcome deficiencies commonly experienced in comparable, commercially available horn-based devices. In addition to being non-invasive, the technology is not susceptible to erosion and promises to be more efficient at high process fluid volumes.

ADVANTAGES

* Non-invasive introduction of ultrasonic energy for a variety of uses including heating, mass transfer, and chemical reaction.
* Wide range of frequencies and modes available allowing for tailoring to diverse applications.
* High volume sonication conveying energy to large volumes of process fluid.

U.S. DEPARTMENT OF ENERGY

Patents & Intellectual Property

- Published Patent Application: US2009-0038932

Technology Portfolio(s)

- Ultrasonics

Potential Industry Applications

- Chemicals
- Consumer Products
- Energy & Utilities
- Food, Beverage & Tobacco
- Oil & Gas
- Wood, Paper & Forestry

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