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Battelle Number(s):

13818-B

Patent(s) Issued

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Available Technologies

Fermentation Monitoring with Ultrasonic Backscattering

SUMMARY

In an experimental or production fermentation process, it is frequently necessary to monitor the growth of organisms within the fermentor. The typical method for doing this is a time-consuming and invasive process of collecting, diluting and counting a sample at periodic intervals.

Researchers at PNNL have developed an ultrasonic method for measuring organic growth within the fermentor and providing estimates of cell growth. By analyzing how ultrasonic signals are scattered and absorbed within the fermentor media as a function of time, information related to the organisms' size and population can be monitored during the fermentation process. This method may also provide online, real-time estimates to measure growth rates and help identify specific fermentation phases.

ADVANTAGES

- * Non-invasive, non-disruptive monitoring method
- * Saves time and reduces cost of fermentation monitoring



Patents & Intellectual Property

- » Patent #: 7,114,375

Technology Portfolio(s)

- » Ultrasonics
- » Physical Sensors

Potential Industry Applications

- » Chemicals
- » Food, Beverage & Tobacco
- » Healthcare, Pharma, Biotech & Medical

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