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**Greenwood et al.**

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(54) **SYSTEM AND TECHNIQUE FOR  
ULTRASONIC CHARACTERIZATION OF  
SETTLING SUSPENSIONS**

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**73/61.62; 73/61.65; 73/61.66; 73/61.71; 73/61.75;**  
**73/61.42**

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See application file for complete search history.

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(57) **ABSTRACT**

A system for determining properties of settling suspensions  
includes a settling container, a mixer, and devices for  
ultrasonic interrogation transverse to the settling direction. A  
computer system controls operation of the mixer and the  
interrogation devices and records the response to the inter-  
rogating as a function of settling time, which is then used to  
determine suspension properties. Attenuation versus settling  
time for dilute suspensions, such as dilute wood pulp sus-  
pension, exhibits a peak at different settling times for  
suspensions having different properties, and the location of  
this peak is used as one mechanism for characterizing  
suspensions. Alternatively or in addition, a plurality of  
ultrasound receivers are arranged at different angles to a  
common transmitter to receive scattering responses at a  
variety of angles during particle settling. Angular differences  
in scattering as a function of settling time are also used to  
characterize the suspension.

**12 Claims, 8 Drawing Sheets**

