

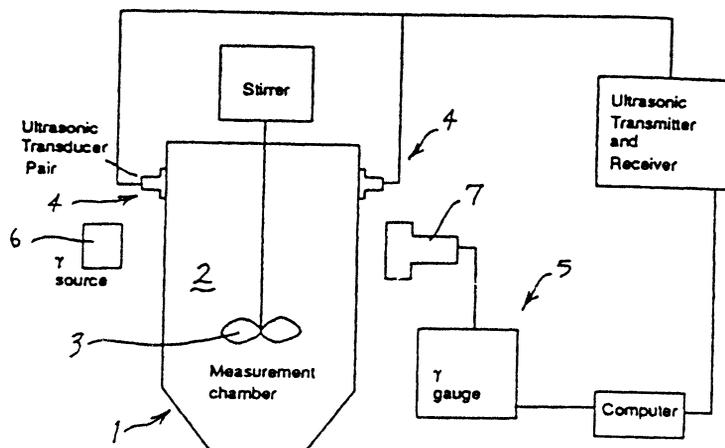
New Inventions

A METHOD AND APPARATUS FOR DETERMINING THE SIZE DISTRIBUTION OF PARTICLES IN A FLUID

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In this embodiment, the size distribution of particles in a fluid is determined by performing the following steps:

- (a) Passing a plurality of ultrasonic beams through the fluid, wherein the beams have respective frequencies f_1, f_2, \dots, f_n .
- (b) Obtaining a velocity measure of the beams in the fluid
- (c) Obtaining an ultrasonic velocity spectrum as a function of particle size for the fluid
- (d) Determining from the attenuation of gamma-rays the density of the fluid; and
- (e) Calculating the particle size distribution for the fluid from the velocity measure, the velocity spectrum, and the suspension density which were respectively obtained in steps (b), (c) and (d).



A METHOD AND APPARATUS FOR ELECTROSTATIC SEPARATION

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 Applicant: Separation Technologies Ltd.
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A belt-type counter-current separator for separating a mixture of particles, including conductive particles, includes a voltage gradient assembly having a plurality of conductive elements interdisposed with a plurality of dielectric elements. The plurality of conductive elements are coupled to respective nodes of a voltage dividing circuit for dividing a voltage between a high potential electrode, of the electrostatic separator, and a reference potential. The plurality of conductive elements and dielectric elements in combination with the voltage dividing circuit limit a voltage potential between any adjacent conductive elements to a maximum potential so as to prevent sparking due to the presence of conductive particles in the separator. In one embodiment of the separator, the voltage gradient assembly is an extruded plastic material having both conductive and non-conductive elements and pieces of alumina are disposed between the conductive elements to provide a durable voltage gradient surface.

