

Title (en)
Method for controlling an acoustic cell

Title (de)
Verfahren zur Steuerung einer akustischen Zelle

Title (fr)
Procédé pour commander une cellule acoustique

Publication
EP 2796208 A1 20141029 (EN)

Application
EP 13164759 A 20130422

Priority
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Abstract (en)
The present invention is related to an iterative method for controlling an acoustic cell (1) separating dispersed particles in a liquid medium, said acoustic cell (1) comprising two opposed plates (5) delimiting a resonating cavity filled with said liquid medium, at least one of the opposed surfaces (4) comprising a piezoelectric transducer (4) coupled to an electrical power generator for producing ultrasonic waves in said resonating cavity, said method comprising the steps of: a. applying an ultrasonic sound field by applying a periodic electrical potential of initial resonant frequency f_i and initial power P_i to said piezoelectric transducer (5); b. measuring the cosine of the resulting phase shift ϕ ($\cos(\phi)$) between the electric current and the electric potential applied to the transducer (5); c. if the $\cos(\phi)$ is lower than a predetermined threshold, increasing the power P_i , else decreasing the power P_i ; d. determining the sign of the gradient of $\cos(\phi)$ as a function of the frequency; e. varying the frequency in the gradient direction thereby maximising $\cos(\phi)$; f. getting to step (b).

IPC 8 full level
B06B 1/02 (2006.01)

CPC (source: EP)
B06B 1/0246 (2013.01)

Citation (applicant)
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