Ultrasound stimulation system of an in vitro sample

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The invention

In addition to their widespread use in diagnostics, ultrasound is becoming increasingly important as a therapeutic tool. Thanks to their intrinsic non-invasiveness (they allow for no incisions and do not involve ionising radiation) and the possibility of localising the treatment with extreme precision (through the use of a focused beam), therapeutic ultrasound is raising growing interest in the medical community for the treatment of a wide range of pathologies. Indeed, ultrasound-based technologies are now a 'hot topic' in medical and surgical research, with many possible applications under investigation. However, a deep understanding of the mechanisms behind ultrasonic stimulation is lacking to date. This invention makes it possible to study in depth the phenomena involved in the ultrasonic stimulation of living materials and cells, thus paving the way for the optimisation of these stimulation processes in numerous areas

Images

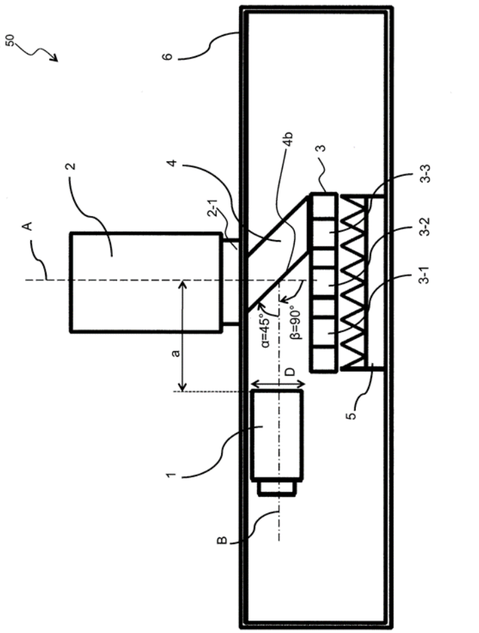

Fig. 2A

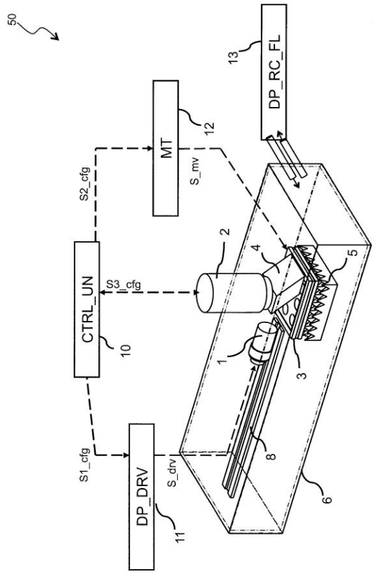

Fig. 2B

Industrial Use

- Controlled ultrasonic stimulation of biological samples to promote tissue regeneration/healing;
- Controlled ultrasonic stimulation of chemical substances and solutions for sonochemistry applications;
- Controlled ultrasonic stimulation of complex materials to induce drug release or other phenomena of interest.

Future application

The research group is interested in industrial partners interested in licensing the technology covered by this patent.

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