Non-invasive brain stimulation device based on ultrasound

Technology description

1. Technical overview

When tactile is produced by ultrasound through non-invasive brain stimulation, it corrects the characteristics of ultrasound by accurately considering the characteristics of the individual brain.

The technique provides an apparatus and method for accurately generating the desired sense of touch.

two。 The impact of technology

It can stimulate users by controlling ultrasound according to the characteristics of each user. It can also stimulate the exact position by predicting the reflection and refraction of ultrasound penetrating the user's skull. This allows the user to feel the desired touch accurately.

Because there is no separate device installed on the user's hand, it is possible to interact with each other while feeling the touch without being immersed in a virtual environment consisting of video and audio.

3. Technical content

Non-invasive tactile stimuli (10) include:

A) an ultrasonic transducer module (11) that performs a function of non-invasive input of ultrasound to the user to stimulate a particular part of the user's brain

B) a compensation module (12) for obtaining information about the range of the tactile region of the user's brain and correcting the characteristics of the ultrasonic wave to be input to the user by the ultrasonic transducer unit with reference to the obtained information.

C) an ultrasonic generating module (13) for generating an ultrasonic wave that will be input to the user through the ultrasonic transducer unit by referring to the correction value determined by the compensation module.

The compensation module (12) includes:

A) an ultrasonic transducer calibration module (121) for calibrating the characteristics of the ultrasonic wave or adjusting the physical position on the brain of the user of the ultrasonic transducer module

B) the skull feature estimation and compensation module (122) for correcting the ultrasonic features to be input to the user by referring to at least part of the thickness and thickness of the skull of the user's brain by the ultrasonic transducer module. Scalp or internal fat layer.

Application area

Manufacturing, tourism, sports, medicine, games, situational training, entertainment, performances/exhibitions, defence, education, etc

Institution

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