



MEMS sensor for analyzing liquid and gas samples

Solution and its benefits

For micromechanically analyzing liquid samples in mechanical contact with semiconductor, useful for clinical, environmental and research purposes in the field of biology, biotechnology, chemistry and health-care, especially in immunology advances in liquid phase analysis; for bio-analyses; in medical diagnostic (e.g. rapid diagnostics tests at doctors office); for home tests (welfare and diagnostics); in test for screening drugs of abuse and doping; in detection of chemical and biological weapons and explosives; in environmental monitoring; for monitoring industrial processes; in detection of flavor compounds; and in drug development.

Competitive advantage

The sensitivity of micromechanical liquid sensors can be improved. The invention allows isolation of the liquid sample, easy liquid sample insertion, and easy preparation of the molecule-specific surfaces. The sensor can be manufactured using batch-fabrication methods. It allows the critical parts of the device to be hermetically encapsulated using existing industrial methods.

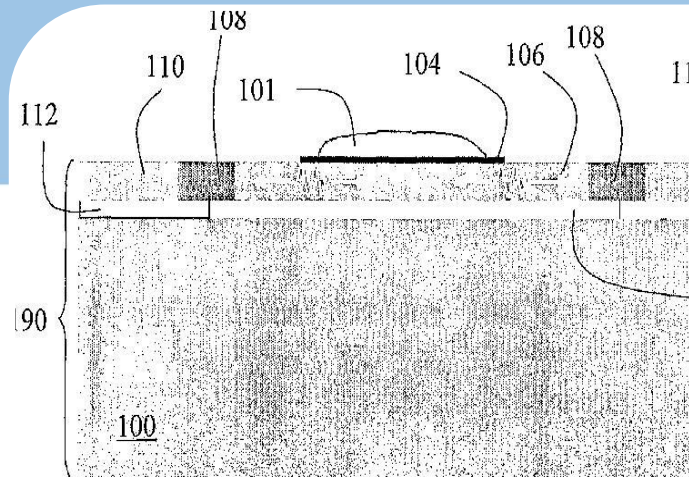
Technical description

A micromechanical sensor comprises a body (100), a planar wave guide portion (106) spaced from the body, at least one electro-mechanical transducer element (110) located on a lateral side of the wave guide portion for excitation of acoustic waves to the wave guide portion in response to electrical actuation, and a sample-receiving zone (104) on one surface of wave guide portion for receiving a sample (101). The transducer element is adapted to excite longitudinal bulk acoustic waves to the wave guide portion, and to convert longitudinal bulk acoustic waves into electrical signals.

Intellectual property rights

ALASTALO A; HELLE H; MATTILA T; OJA A; SEPPÄ H; TAPPURA K; TUPPURAINEN J: MICROMECHANICAL SENSOR, SENSOR ARRAY AND METHOD

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Why partner with VTT?

10 reasons for technology partnering with VTT

1. Key factor in Finland's success story with a track record to prove it
2. Licensing and co-venturing opportunities
3. Portfolio of more than 1,000 patents and inventions
4. New business and product concepts based on strong IP and world class research
5. Combined experience of more than 2,000 motivated researchers in eight focused areas of technology
6. Active member in hundreds of scientific & business communities
7. Excellent track record as coordinator and partner in EU projects
8. Collaboration with TOP 50 R&D companies in Finland
9. Global R&D partnership with 50 Fortune 500 companies
10. Market driven multi-disciplinary solutions

Additional information

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