Broadband and Robust Gyroscopes

Tech ID: 33951 / UC Case 2008-503-0

BRIEF DESCRIPTION

This technology encompasses a suite of patents for developing gyroscopes that offer both broad bandwidth and high sensitivity, suitable for a variety of challenging environments.

FULL DESCRIPTION

UCI researchers have developed technology involving advanced gyroscopes and sensors that are designed to be less sensitive to environmental variations by incorporating a broad range of frequency responses, while still maintaining high sensitivity. This is achieved through innovative structural designs and signal processing software that allows for tuning between robustness and sensitivity based on the application needs. The gyroscopes utilize a unique design that includes single-axis sensor technology, multi-axis capabilities, and advanced signal processing techniques to improve operational robustness and sensitivity.

SUGGESTED USES

- Military equipment for navigation and targeting systems.
- Automotive industry, particularly in advanced braking systems for SUVs.
- Consumer electronics, including wearable technology like shoes with integrated shock detection.
- Aviation and UAVs, for enhanced inertial measurement units.
- Homeland Security applications, potentially in accelerometers and other monitoring devices.

ADVANTAGES

- Enhanced performance in environments with extreme shock and vibrations.
- Flexible tuning between robustness and sensitivity to meet specific application requirements.
- Improved sensitivity over conventional gyroscopes and sensors.
- Potential for application in a wide range of industries, including UAVs, automotive, and military.
- Advanced signal processing and machine learning techniques for optimal operation.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,656,776	02/25/2014	2008-503
United States Of America	Issued Patent	8,443,667	05/21/2013	2008-503
United States Of America	Issued Patent	8,113,050	02/14/2012	2006-309

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OTHER INFORMATION

CATEGORIZED AS

- **Sensors & Instrumentation**
  - Analytical
  - Other
  - Position sensors
- **Engineering**
  - Other

RELATED CASES

2008-503-0, 2006-309-0, 2005-199-0, 2004-542-0

United States Of America	Issued Patent	7,284,430	10/23/2007	2005-199
United States Of America	Issued Patent	7,279,761	10/09/2007	2004-542

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