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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

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|--------------------------|---------------|-----------|------------|----------|
| 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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