Micro-glassblowing for Gyroscope Fabrication

Tech ID: 20722 / UC Case 2010-231-0

BRIEF DESCRIPTION

Micro-glassblowing is a revolutionary technology for creating high-performance and durable gyroscopes through intricate glass shaping

FULL DESCRIPTION

Researchers at UCI have developed micro-glassblowing technology to fabricate complex three-dimensional structures, such as spherical or hemispherical shells, which are crucial for the resonator element in gyroscopes. It combines techniques like dual-shell architecture, wafer-level fabrication, high-temperature glassblowing, and integration with Micro-Electro-Mechanical Systems (MEMS) to produce gyroscopes that are robust, sensitive, and accurate.

SUGGESTED USES

- Aerospace and defense for navigation and guidance systems
- Consumer electronics for stabilization and orientation features
- Automotive industry for navigation and safety features
- Industrial applications in robotics and automation for precise movement control

ADVANTAGES

- Enhanced robustness against shock, vibration, and harsh environments
- High Q-factor leading to improved sensitivity and accuracy
- Capability for miniaturization, enabling compact gyroscope designs
- Batch fabrication allows for cost-effective mass production

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,296,133	03/29/2016	2010-231
United States Of America	Issued Patent	8,567,247	10/29/2013	2010-231

CONTACT

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Communications**
  - Other
- **Engineering**
  - Engineering
- **Sensors & Instrumentation**
  - Position sensors
- **Transportation**
  - Aerospace

RELATED CASES

2010-231-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Micromachined Gyroscope Design Allowing for Both Robust Wide-Bandwidth and Precision Mode-Matched Operation
- 3-D Folded MEMS Technology For Multi-Axis Sensor Systems
- Prioritizable IMU Array (Prio-IMU) for Enhanced Pedestrian Navigation

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