Compact Atomic Magnetometer and Gyroscope

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BACKGROUND

Magnetometers are used for sensing magnetic fields. Applications include geophysical surveying, nuclear magnetic resonance imaging (MRI), magneto-encephalography and perimeter surveillance. Gyroscopes sense rotation. Together, these instruments are used in inertial navigation and platform stabilization such as anti-roll systems in cars. A variety of commercial magnetometers exist with various application areas. Superconducting quantum interference devices (SQUIDS) are highly sensitive but require cryogenic cooling. Atomic magnetometers are even more sensitive but run approximately $10,000 per unit. Commercially available gyroscopes run a similar gamut.

TECHNOLOGY DESCRIPTION

This invention consists of a compact, inexpensive and highly sensitive gyroscope/magnetometer that runs on very low power (eg battery power) and is even suitable for remote deployment or even handheld portable systems. Simple fabrication further enhances the low cost approach of this design.

APPLICATIONS

Magnetic field sensing, anti-roll device, inertial navigation, MRI, perimeter surveillance (security).

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	7,872,473	01/18/2011	2008-002

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OTHER INFORMATION

CATEGORIZED AS

- **Imaging**
  - Medical
  - Other
- **Nanotechnology**
  - Electronics
  - Tools and Devices
- **Optics and Photonics**
  - All Optics and Photonics
- **Sensors & Instrumentation**
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