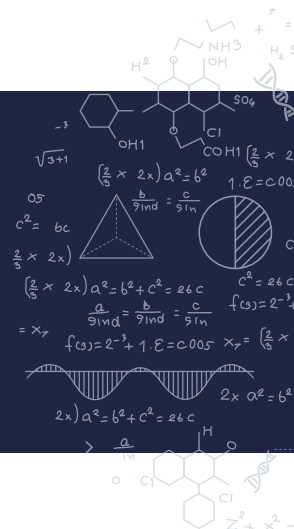


# LICENSING OPPORTUNITY: ATOMIC MAGNETOMETER AND METHOD OF SENSING MAGNETIC FIELDS

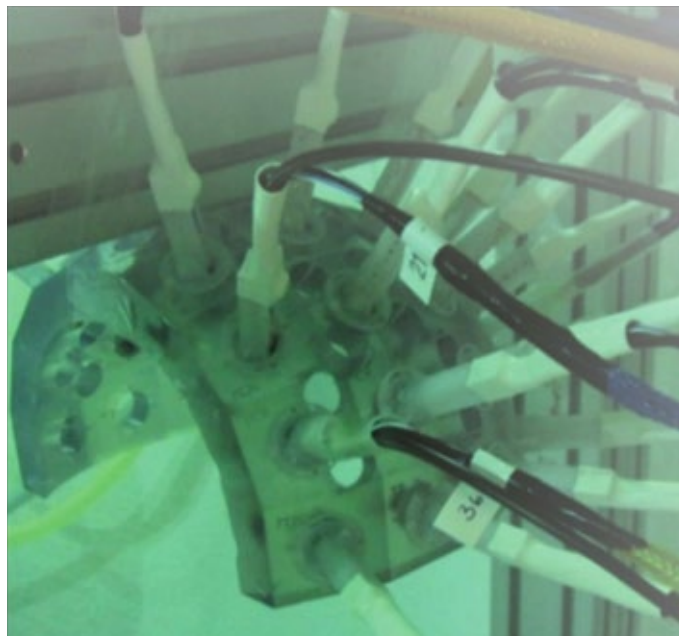


## DESCRIPTION

### Invention

NIST has made long awaited advances in the creation of magnetometers and detecting magnetic fields.

The chip size NIST atomic magnetometer has at least one sensor head void of extraneous metallic components, electrical contacts or electrically conducting pathways. This novel sensor contains an active material vapor, such as an alkali vapor, that alters at least one measurement parameter of light passing through, when in a magnetic field. The sensor has an absorptive material configured to absorb laser light and thereby activate or heat the active material vapor.



Chip-scale atomic magnetometers arranged in an array around a human head to detect brain magnetic fields.

## BENEFITS

### Commercial Application

- Measurement of magnetic fields from living systems
- Detection of magnetic anomalies such as submarines and ships for defense purposes
- Measurement of geomagnetic fields, which are useful for oil and mineral exploration
- Geophysical mapping
- Measurement of geomagnetic fields for positioning and navigation
- Underground deposit detection
- Navigation
- Nuclear magnetic resonance
- Space science
- CubeSeats
- Physiological mapping (e.g., human heart and brain)

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