Fiber Optic Torque Sensor

A fiber optic sensor operates with an optical fiber cable connected to a dedicated light source. These sensors offer great mounting flexibility and can be used is in a variety of environments.

This work proposes a miniature and high-sensitivity torque sensor that mainly consists of a torque-sensitive flexure and one tightly suspended optic fiber with an inscribed Fiber Bragg Grating ...

To overcome these issues, we have proposed various compliant fiber-optic based force and torque sensors that have proved their capabilities to accurately measure force and torque in three and six ...

This paper presents a conceptual sensor design for planar force/torque measurement based on fiber optic sensing. The design includes two rigid bodies, one acting as a reference frame ...

This paper presents a nov el six-axis force/torque sensor based on optical fibre sensing for robotic applications in extreme environments with intense electromagnetic interference as well as explosive ...

This paper presents a fiber Bragg grating (FBG)-based six-dimensional (6-D) force/torque (F/T) sensor that can be mounted on robot joints for the detection of comprehensive force/torque...

The presented force-torque sensor makes use of fiber Bragg gratings (FBG) as optical strain sensors. These devices are written into the core of optical single-mode fibers.

In these configurations, conventional fiber-optic strain sensors (mostly FBGs) are applied to measure directly the shear stress at the surface of the measurement body, while this measured stress is then ...

This thesis presents the design, fabrication and characterization of various prototypes of multi-axis, compliant force and torque sensors based on fiber-optic sensing technology, the novel calibration ...

A self-decoupling six-dimensional force/torque sensor based on Fiber Bragg grating is described, which is designed based on a spherical rotor and a double-layer beam. 14 FBGs are ...

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