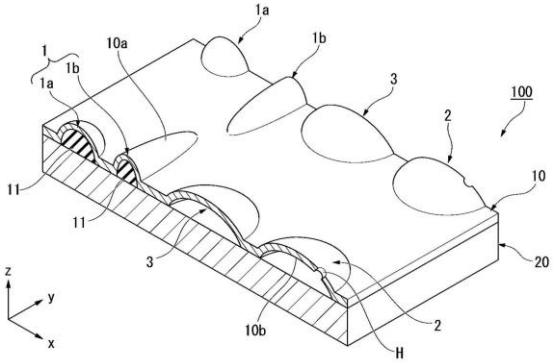
Tohoku Univ. Technology

Sensor unit and sensor

Integrated and multi modal sensor system



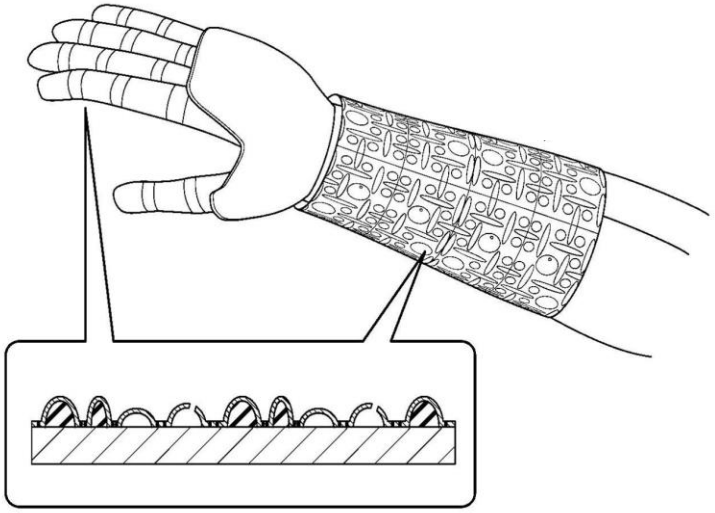
1. 1st convexity (tactile sensor)
2. 2nd convexity (acoustic sensor)
3. 3rd convexity (pressure sensor)
10. Magnetostrictive film
10a./b. Surface and back side of magnetostrictive film
11. Insulator
20. Substrate
100. Sensor unit

Overview

Currently, robots are being introduced in many industrial fields to solve the problem of the working population decrease. In order for robots to perform the same tasks as human in the future, it is important for them to have sensors for senses other than vision (force, pressure, temperature, cold, etc.). For this reason, the development of compact and high-sensitivity sensor using micro-electromechanical system technology is underway as sensor for force measurement acting on object. However, the current technology is unable to adequately detect the applied force depending on the direction of the external force.

This invention is able to provide a sensor unit and a sensor which detect externally applied force from various directions. It can also provide sensor unit that can obtain a variety of information with a single element. This invention uses a continuous magneto strictive film with many convex 3D shape sensors projecting in the 1st direction relative to the reference plane, which enable the force detection from various directions applied from the exterior.

Applicable to robot as a multi modal sensor



Product Application

- Medical, care, assistance
- Robot, robot arm

Related Works

No published paper available. Please contact us for more information on many improved technologies.

IP Data

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