

SYSTEM AND METHOD FOR TACTILE SENSING USING THIN FILM OPTICAL SENSING NETWORKS

ABSTRACT OF THE DISCLOSURE

A system and method for tactile sensing using thin film optical sensing networks is disclosed. A sensing network includes an array of optical pathways arranged in a flexible material. Each optical pathway has an input at a first end and an output at a second end. A light source is coupled to the input of each respective associated optical pathway. Each light source directs a light signal having a first predetermined frequency and characteristic into the associated optical pathway. A light detector is coupled to the output of each respective associated optical pathway. Each light detector receives a light signal from the associated optical pathway and generates an output signal corresponding to the magnitude of the received light signal at a second predetermined frequency. A processor receives the output signals from each light detector and determines an amount of pressure applied to the sensing network based on the received signals.

Fig. 1