

## عنوان مقاله:

APPLICATION OF TACTILE SENSING IN DETERMINING THE CHARACTERISTICS OF BIOLOGICAL TISSUES

## محل انتشار:

پانزدهمین کنفرانس سالانه مهندسی مکانیک (سال: 1386)

تعداد صفحات اصل مقاله: 18

## نویسنده:

Siamak Najarian - Professor, Amirkabir University of Technology Tehran, Iran, Artificial Tactile Sensing and Robotic Surgery Laboratory, Faculty of Biomedical Engineering

## خلاصه مقاله:

In this study, the design, fabrication, and testing of different piezoelectric and piezoresistive tactile sensors used in endoscopic tools for detecting compliance and softness of the biological tissues are being presented. In the comparison made between the experimental data and the results obtained from the finite element analysis of the systems, it was found that there is a reasonable correspondence between these two methods for every sensor. Also, we propose and test a novel method to investigate the effects of the tumor existence that appear on the surface of a biological tissue. Finite element analysis provided properties such as the shape, depth, and location of the tumor which are all important parameters for physicians to pinpoint the correct condition of the patients. We obtained good agreements between the numerical and experimental results received from various artificial tactile sensing systems.

## کلمات کلیدی:

Tactile sensing, finite element analysis, membrane, polyvinylidene fluoride (PVDF), grasper

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/29227>

