

Soft Robotic Automation

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Abstract

This presentation describes industrial automation based on soft robotics approach. Recently, research on soft robotics, which focuses on robotic systems composed of soft materials, have been studied extensively. Such soft robotics approach will be effective to manufacturing processes with large uncertainties. Conventional automation technology has assumed that manufacturing processes have small uncertainties, that is, the shape, size, and position of parts, products, and environment have small deviations. Unfortunately, conventional automation cannot be applied to manufacturing processes with large uncertainties, for example, food and clothing industries. Soft robotics approach can cope with large uncertainties, resulting that automation based on soft robotics will be applied to food and clothing industries. We are conducting research on soft robot hands for food handling. This presentation will introduce pneumatically driven soft grippers, binding hands, and fiber/fabric sensors for soft robot hands for food material handling.

Keywords: (soft robotics, automation, handling)

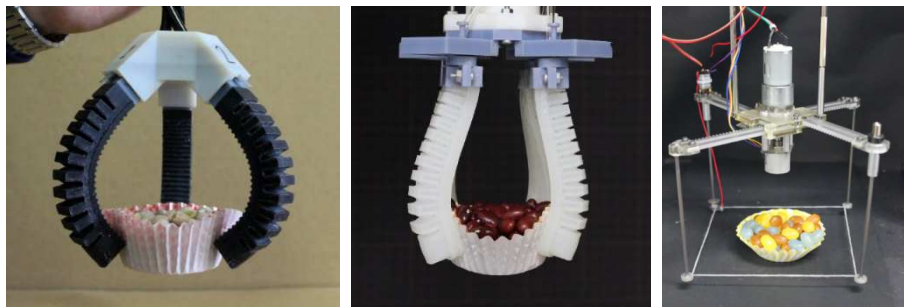


Fig. 1. Soft Grippers for Food Handling.