

Soft robotics is a new area of research in the field of automation and robotics. Its goal is to create soft robotic systems such as grippers, moving robots that can perform advanced tasks which are not possible for robotics with rigid elements. In the presented project, magneto-active elastomers are investigated and their use in soft robotics. Magneto-active elastomers belong to the group of so-called intelligent materials, i.e. materials responsive to external stimuli. Magneto-active elastomers can be used as elements of actuators or sensors. Their magnetic and mechanical properties change under the influence of the electromagnetic field. They also react by changing shape under the influence of an electromagnetic field. In the presented project, the aim of the research is to design the geometry of soft robots using magneto-active elastomers. The possibilities of controlling and planning the motion of the above-mentioned robots will also be investigated.