A design strategy for magneto-active elastomer for biomedical applications

Smart materials have demonstrated great potential to be applied in biomedical industries with their shape-morphing capabilities under external driving mode. Among them, magneto-active elastomer (MAE) is a class of smart materials that can contactless exhibit large deformation subjected to a magnetic field, which can be implemented on specific biomedical applications like actuators and sensors. We propose a systematic design strategy here to realize customized performances such as shape programming and force thresholding by varying the local property and geometry of MAE targeting different biomedical applications.