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Korea develops artificial muscle device to invoke various movements

January 24, 2024 | News

Soft fluidic switch using an ionic polymer artificial muscle



Researchers at Korea Advanced Institute of Science and Technology (KAIST) have developed a fluid switch using ionic polymer artificial muscles that operates at ultra-low power and produces a force 34 times greater than its weight. Fluid switches control fluid flow, causing the fluid to flow in a specific direction to invoke various movements.

Artificial muscles imitate human muscles and provide flexible and natural movements compared to traditional motors, making them one of the basic elements used in soft robots, medical devices, and wearable devices.

These artificial muscles create movements in response to external stimuli such as electricity, air pressure, and temperature changes, and in order to utilise artificial muscles, it is important to control these movements precisely.

"From smart fibers to biomedical devices, this technology has the potential to be immediately put to use in a variety of industrial settings as it can be easily applied to ultra-small electronic systems in our daily lives", said the researchers.