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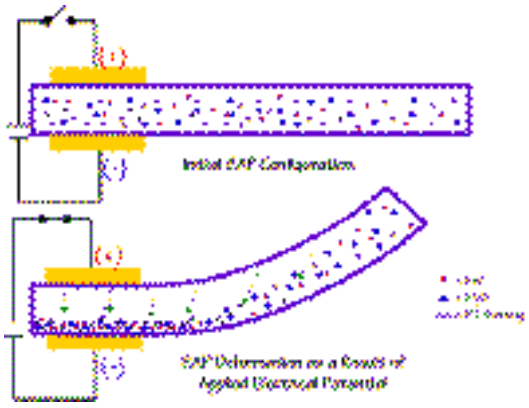
Artificial Muscle

The first artificial muscle was created in 1996 by Yoseph Bar-Cohen. The purpose of artificial muscle is to represent muscle for robots.

This muscle is created from Electroactive Polymers (EAP). There are 2 types of these polymers: electric and ionic. For creating more efficient prostheses scientists are using Ionic-Electrosctive Polymer because its usage of low voltages and low frequencies. At the same time there are problems with this kind of polymers. Their main disadvantage is that they are slow in replying to signals and low reaction force, also Ionic-EAP has to be wet all the time during usage.

On the other hand these are not problems with Electric-Electroactive Polymers. The problems with Electric-EAP are shocks on the body by high voltages of 2-5 KV.



Ionic EAP

Today artificial muscles can be applied in many areas of science, medicine, entertainment etc.

Robotic arm created from EAP

Devices that are created from EAP are not yet in full scale on sale market. But it is expected that they are going to be soon, since production of robotic arms started in 2003 by SRI International which is located in California.

Sources:

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