ROBOTIC FISH WITH MACRO FIBER COMPOSITE PROPULSION SYSTEM

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The main objective of this project is to build and test a robotic fish with its propulsion system based on Macro Fiber Composites (MFC). These state-of-the-art actuators based on active materials offer several potential advantages for robotic fish applications compared to traditional servo motors. One important benefit is that smart actuators are lightweight and can be embedded directly into the structure of a fish torso or control surface. In addition, they are eco-friendly. Our goal is therefore to fabricate a robotic fish motion using biometric fish locomotion using MFCs.

Obstacles:
- Rigidity of tail which decreases MFC deflection
- Limited maximum voltage lowers maximum MFC deflection
- Water-proofing the systems inside the fish
- Controlling the depth of the fish underwater using a ballast system

References: