

Supplementary Material

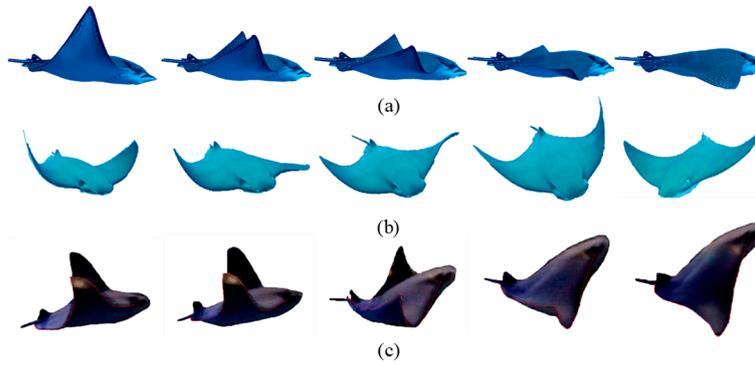


Figure S1. Free swimming of MPF model fish. (a) Eagle ray forward swimming, shot at Sanya Atlantis Aquarium. (b) Cownose ray turn swimming, shot at Sanya Atlantis Aquarium. (c) Cownose ray pitch swimming, shot at Beijing Aquarium. Adapted from the Ph.D. dissertation of Cao Yong (2015, Beihang University)[28].



Figure S2. The complete underwater robot.