

SUPPLEMENTARY MATERIALS

Design of an untethered magbot: mimicking fruit fly larvae using magnetothermal actuation

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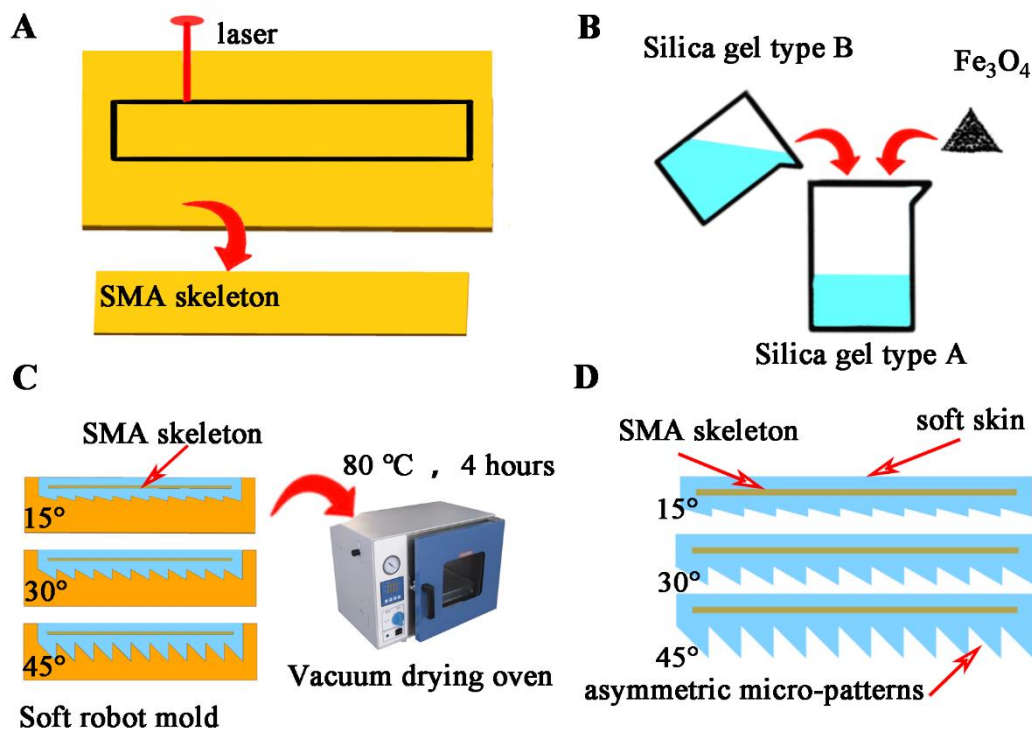


Fig. S1. Design and manufacture of magbot. (A) Fabrication of SMA skeleton. (B) Fabrication of magnetic silica gel. (C) magnetic skin with asymmetric micro-patterns. (D) Magbots with asymmetric micro-patterns of 15° , 30° and 45° .

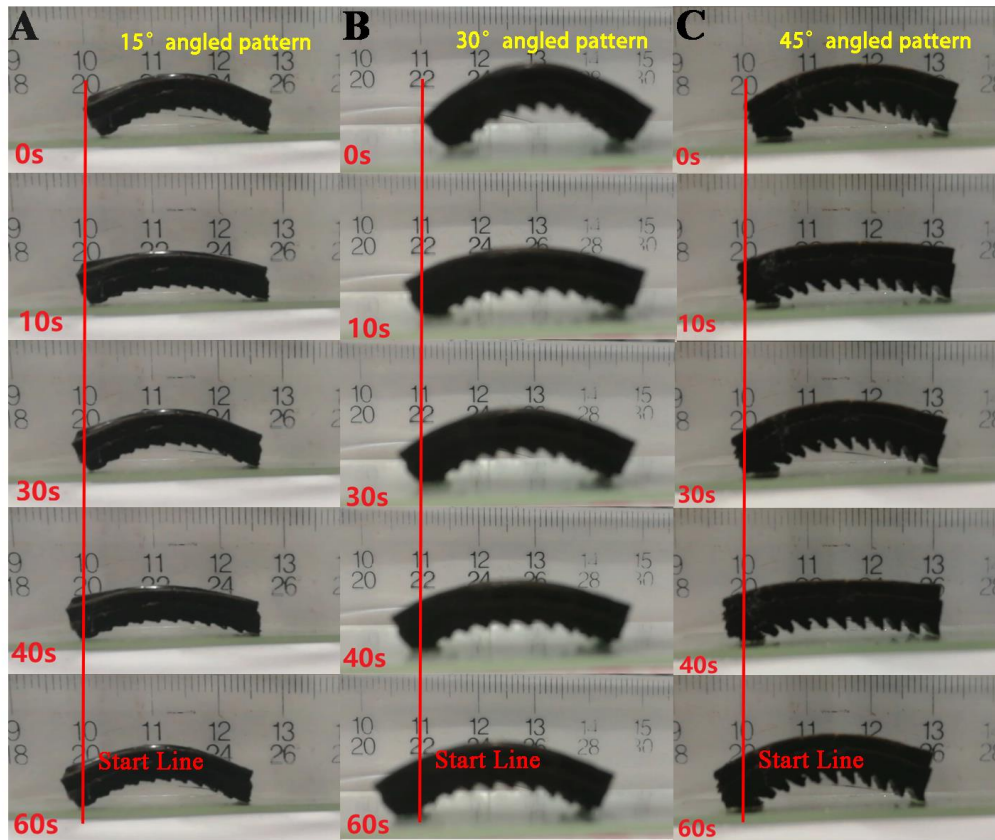


Fig. S2. (A) Actual motion state of 15° angled pattern magbot. (B) Actual motion state of 30° angled pattern magbot. (C) Actual motion state of 45° angled pattern magbot.

26 **Video Legend**

27 **Movie S1:** Unloaded magbot with 15° pattern angle exhibiting directional motion.

28 **Movie S2:** Unloaded magbot with 30° pattern angle exhibiting directional motion.

29 **Movie S3:** Unloaded magbot with 45° pattern angle exhibiting directional motion.

30 **Movie S4:** Magbot with 15° pattern carrying 1x bodyweight.

31 **Movie S5:** Magbot with 30° pattern carrying 1x bodyweight.

32 **Movie S6:** Magbot with 45° pattern carrying 1x bodyweight.

33 **Movie S7:** Magbot with 15° pattern carrying 2x bodyweight.

34 **Movie S8:** Magbot with 30° pattern angle carrying 2x bodyweight.

35 **Movie S9:** Magbot with 45° pattern angle carrying 2x bodyweight.

36 **Movie S10:** Magbot with 15° pattern angle carrying 3x bodyweight.

37 **Movie S11:** Magbot with 30° pattern angle carrying 3x bodyweight.

38 **Movie S12:** Magbot with 45° pattern angle carrying 3x bodyweight.