

## **Description of Additional Supplementary Files**

File Name: Supplementary Movie 1

Description: FFE behavior of zig-zag samples in 15 °C water.

File Name: Supplementary Movie 2

Description: Twisting and untwisting morphing of the twisted sample in 15 °C water. In order to enhance the visual effect, we fixed a small fan blade at the bottom of the spline.

File Name: Supplementary Movie 3

Description: Video showing the eight-arm device shrinking, dropping and expanding in 15 °C water.