

Supporting Information for “Ring Origami: Snap-folding of Rings with Different Geometries”

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Abstract

Through experiment and simulation, we study a kind of deployable thin circular ring that can be folded into three small loops. Parametric study is conducted on the ring to study the geometric parameters that can influence ring's buckling. We also explore the rings with other shapes, such as elliptical rings, rectangular rings. Some applications basing on these studies are shown in this paper.

Rich media available at https://youtu.be/I9Ug_R_RDwg

Rich media available at <https://youtu.be/-7f5n4LBIWA>

Rich media available at <https://youtu.be/368awSu9ziE>

Rich media available at <https://youtu.be/lfpBAGgtYus>

Rich media available at <https://youtu.be/OHbcDf0gr80>



Figure 1: Snapping point of foldable circular ring



Figure 2: Final state of foldable circular ring



Figure 3: Snapping point of foldable elliptical ring



Figure 4: Final state of foldable elliptical ring



Figure 5: Snapping point of foldable rounded rectangular ring



Figure 6: Final state of foldable rounded rectangular ring



Figure 7: Snapping point of foldable rounded triangular ring



Figure 8: Final state of foldable rounded traingular ring