

Supporting Information: Spatiotemporally programmable metasurfaces via viscoelastic shell snapping

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Abstract

Supplementary Text 1: Material modeling and characterization We used the following incompressible neo-Hookean material model to define the instantaneous constitutive behavior of the shells, $= tr - 3$, (S1) where W is the strain energy density function, μ is the shear modulus, F is the deformation gradient tensor. To describe the viscoelastic behavior of the shells, Prony series were used and the shear modulus μ can be expressed as $= 1 - [?] 1 - / ,$ (S2) where μ_0 is the instantaneous shear modulus, n is the number of the series terms, α is the dimensionless relaxation modulus, t is the time, and τ_i is the relaxation time constant. Here we characterize the viscoelastic properties of the silicone rubber (Dragon SkinTM30) and urethane rubber (VyttaFlexTM 20). We modeled their viscou

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