

## **Nanomechanically Nonlinear Photonic Metamaterials**

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By coupling near-infrared electromagnetic and MHz-frequency flexural resonances one can dramatically enhance the magnitude of actuation and optical response in dynamically reconfigurable nanostructures. We review recent work on metamaterials driven by ponderomotive optical forces at microwatt power levels and by low-intensity acoustic vibrations, which manifest strong opto-mechanical nonlinearity, asymmetry and bistability.