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**Photonic Block Polymer Films Prepared by Enthalpy-Driven Swelling** ATSUSHI NORO, YUSUKE TOMITA, YUSHU MATSUSHITA, Nagoya University, EDWIN THOMAS, Rice University — We report nearly nonvolatile, soft photonic films prepared by enthalpy-driven swelling of lamellar-forming polystyrene-*b*-poly(2-vinylpyridine) (PS-P2VP) block copolymer thin films with neat tetraethylene glycol or liquid mixture of tetraethylene glycol/small amount of nonvolatile acid. Transmission electron microscopy and ultra-small angle X-ray scattering (U-SAXS) revealed that the interdomain distance of the PS-P2VP photonic film swollen with neat tetraethylene glycol was almost twice as large as that of neat PS-P2VP film. The experimental wavelength of the reflection light from the photonic film was in good agreement with the wavelength estimated from the Bragg condition with using the interdomain distance obtained by U-SAXS. Moreover, the wavelength of reflected light from photonic films was found to be tunable by varying the acid concentration of the solutions used for swelling of the films.

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