

Abstract Submitted  
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**Electrically Responsive Soft Photonic BCP Films** ATSUSHI NORO, MAHO OHNO, YUSHU MATSUSHITA, Nagoya University — We report electro-responsive soft photonic films composed of lamellar-forming block copolymer/nonvolatile protic solvent/metal salt. Thin films of polystyrene-*b*-poly(2-vinylpyridine) (SP,  $M_n=153k$ ,  $\varphi_S=0.57$ , PDI=1.18) were prepared by spin-coating of the solutions on ITO glass substrates, then mixture of glycol-based solvent and lithium bis(trifluoro methanesulfonyl)imide (LiTFSI) was added to the thin films, producing soft photonic films. If needed, the spin-coated SP thin films were ionized by iodomethane before addition of the mixture of glycol-based solvent and LiTFSI. TEM observations and U-SAXS measurements revealed that these photonic films kept lamellar structures after addition of the solvent, that is, the P phase was swollen selectively with the solvent. Systematic electro-responsiveness of photonic properties of the films was also confirmed by applying voltages to the films.

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