Supporting Information

Metal-vapor deposition modulation on polymer surfaces prepared by the coffee-ring effect

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Figure S1 shows the metal deposition modulation for Pb, Zn and Mn on polystyrene (PS) coffee-ring films. The polymer coffee-ring films were prepared by an analogous process in the main text. The deposited metal thickness was regulated to 40-90 nm on a glass substrate. Metal undeposition on the ring was obtained at a different metal deposition rate (Rd) depending on the metal species. We could not observed the metal deposition modulation for Au and Ag.

Figure S2 shows Mg deposition modulation on the coffee-ring films with various polymer species. The polymer coffee-ring films were prepared by an analogous process in the main text. The deposited Mg thickness was regulated to 110-120 nm on a glass substrate. Identical metal undeposition on the ring was obtained for poly(methyl methacrylate), poly(ethyl methacrylate), and polycarbonate.

Figure S3 shows the microscopic Raman spectroscopy characterization of the polymer coffee-ring surface before and after vacuum-storage. The peak around 1710 cm^{-1} indicates >C=O of cyclohexanone and two other peaks around 1600 cm^{-1} are attributed to PS. The residual cyclohexanone solvent in the film was decreased by

vacuum-storage; these results are consistent with the microscopic FT-IR ATR characterization described in the main text.

Fig. S1 Metal deposition modulation for Pb, Zn and Mn on polystyrene (PS) coffee-ring films. (Scale bar: 5 mm)

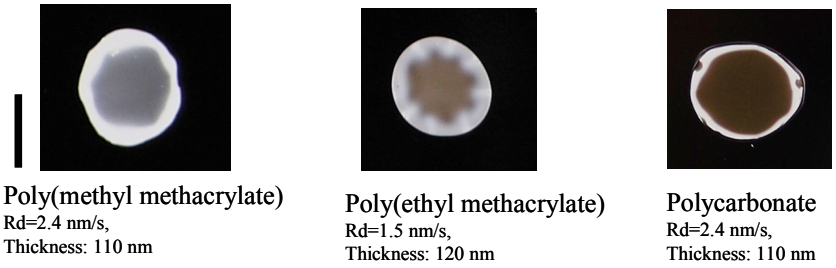

Fig. S2 Mg deposition modulation on coffee-ring films with various polymer species. (Scale bar: 5 mm)

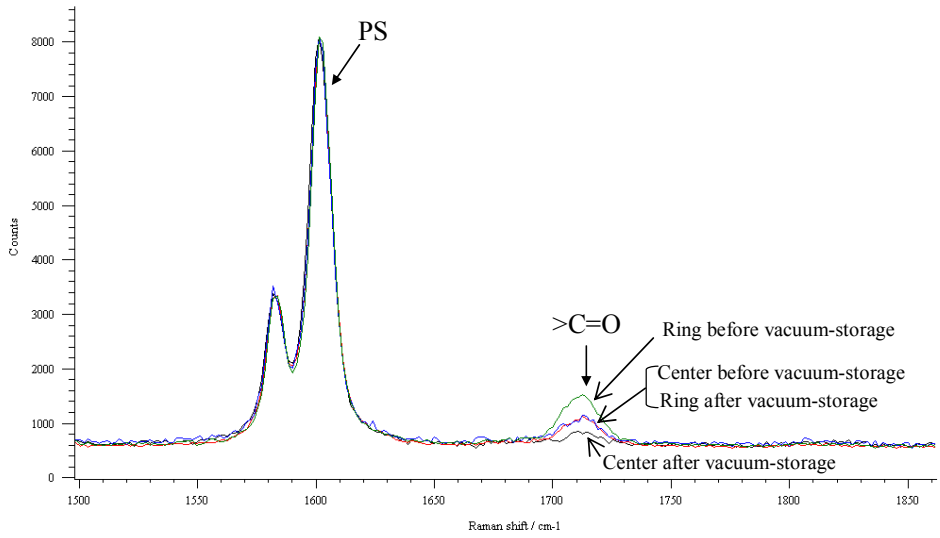

Fig. S3 Microscopic Raman spectroscopy characterization of the polymer coffee-ring surfaces before and after vacuum-storage.