Electronic Supplementary Information

NIR Electrochromism of Plasmonic Au Nanoporous Structures Based on Surface Oxidation and Reduction Reactions

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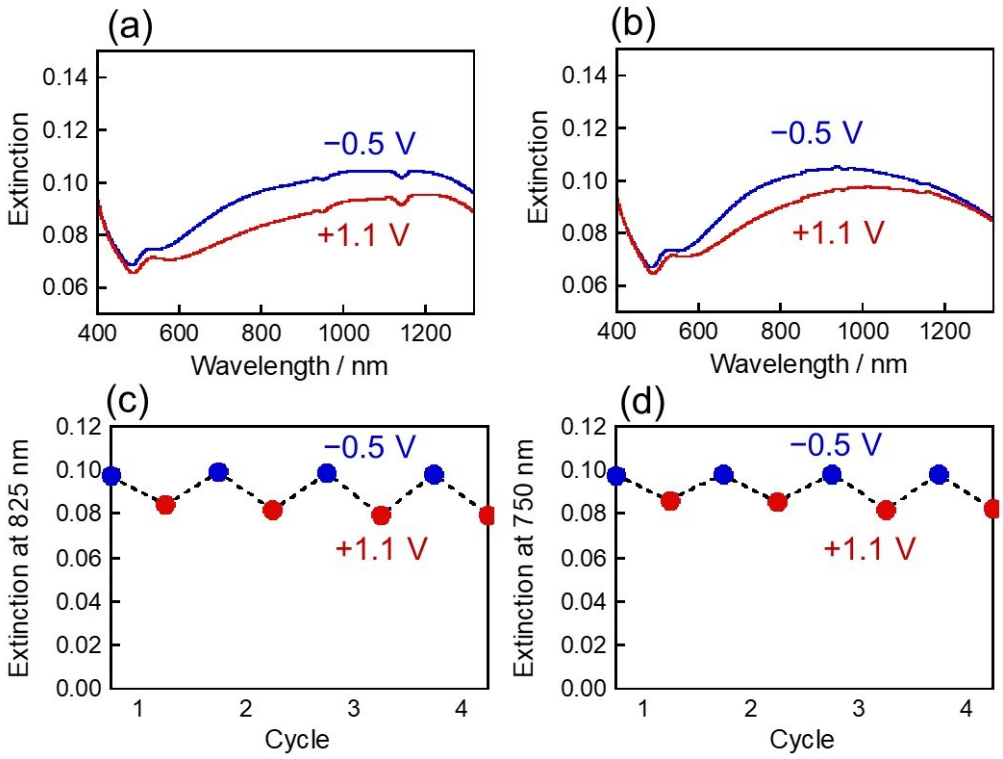

Fig. S1 Extinction spectra at −0.5 V and +1.1 V in 0.01 M potassium nitrate and extinction changes over 4 cycles between the reduced state (−0.5 V) and the oxidized state (+1.1 V). The data are for the nanoporous structures fabricated with (a, c) 0.4 mM and (b, d) 0.1 mM of L-cysteine.

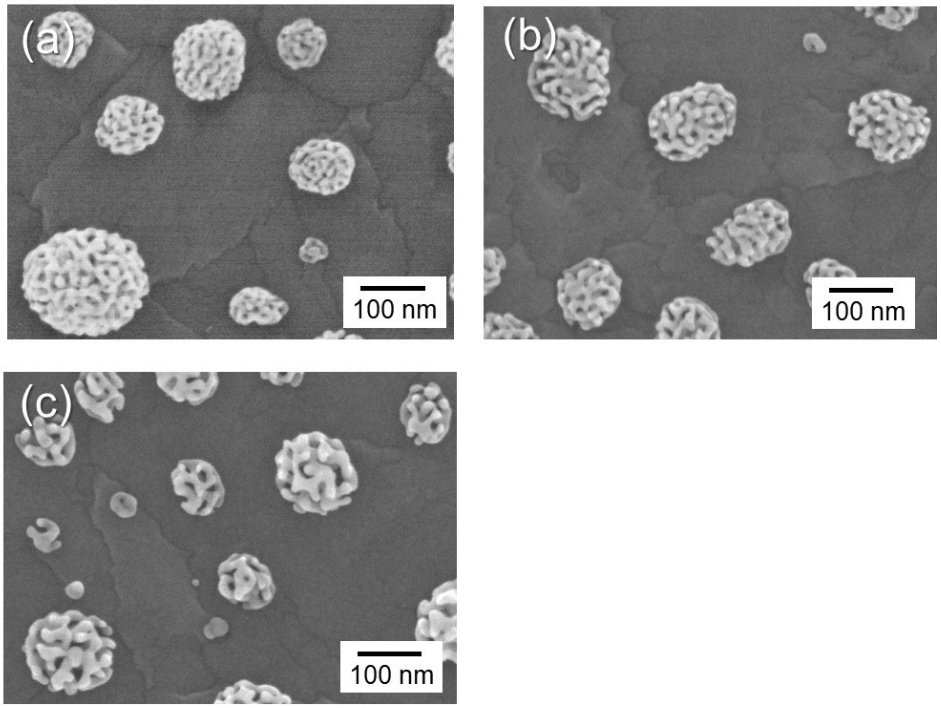

Fig. S2 SEM images of nanoporous structures fabricated by dealloying in dilute nitric acid containing (a) 0.8, (b) 0.4, and (c) 0.1 mM of L-cysteine after spectroelectrochemical measurements.

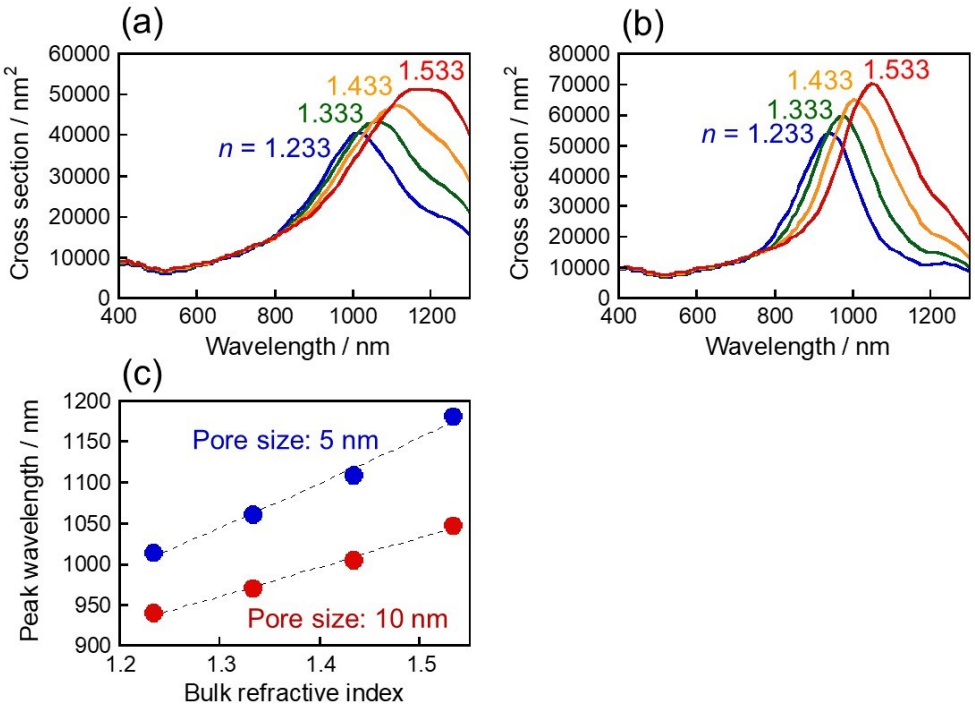

Fig. S3 Calculated extinction spectra of nanoporous structures with pore sizes of (a) 5 nm and (b) 10 nm in different bulk refractive indices (*n*). (c) Relationship between bulk refractive index and peak wavelength.

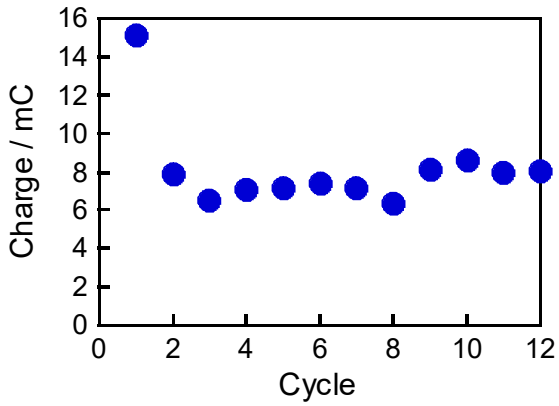

Fig. S4 Charge passed during the oxidation process over 12 cycles between the reduced state (−0.5 V) and the oxidized state (+1.1 V).