Supporting Information

High-resolution Identification of Chemical States in Individual Metal Clusters in an Insulating Amorphous Polymer

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TEM BF image observations. To overview cross-sections of the samples, TEM BF images were obtained using a microscope (H-9000NAR, Hitachi High-Technologies) operated with an acceleration voltage (V_{acc}) of 200 kV (Figures 2(a)–(d)). BF observations were performed under liquid nitrogen cooling (-70 °C) to reduce damage by electron irradiation.

Nanobeam electron diffraction. To identify particles diffusing in the PI layer, nanobeam electron diffraction was performed using a STEM microscope (HD-2000, Hitachi High-Technologies) (Figures 3(m) and 3(n)). The adopted V_{acc}, camera length, and beam diameter were 200 kV, 0.8 m, and approximately 30 nm diameter, respectively. Nanobeam electron diffraction was performed under liquid nitrogen cooling (-70 °C).