Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Proton-assisted Low-temperature Sintering of Cu Fine Particles Stabilized by a Proton-initiating Degradable Polymer

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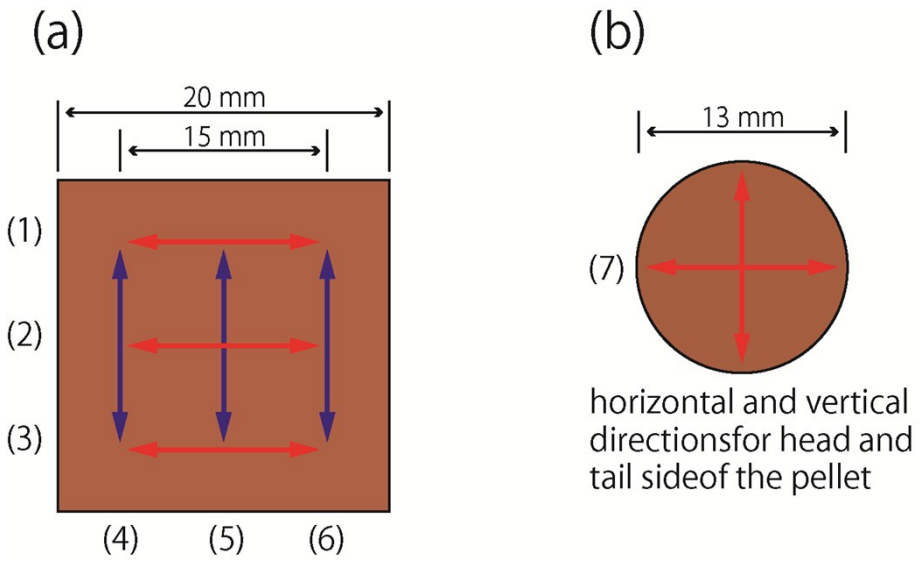

Figure S1. Schematic of (a) the six measured points of the Cu film and (b) the four measured points (horizontal and vertical directions for head and tail side of pellet) of the Cu pellet for resistivity measurements. Resistivity Correction Factors were 2.244 for the measured points of (1), (3), (4), and (6), 3.168 for those of (2) and (5) and 4.064 for that of (7).

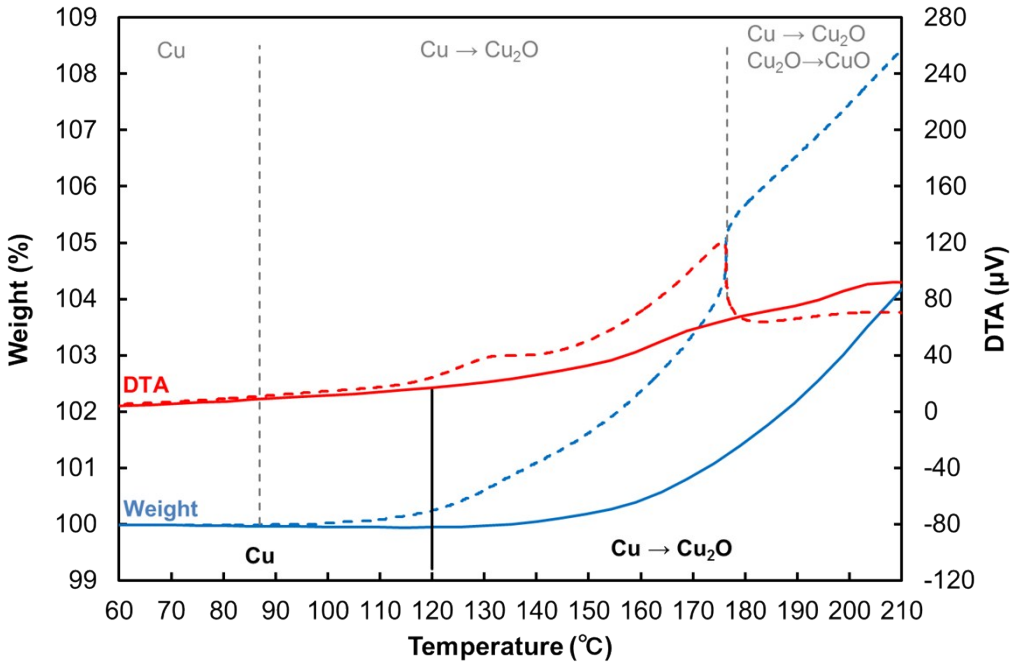

Figure S2. Expanded TGA-DTA curves in the range between 60 °C and 210 °C of the BDVE-stabilized Cu fine particles and the hot pressed BDVE-stabilized Cu fine particles at 100 °C. The measurement was performed under air flow and its heating rate was fixed to 5 °C min^{-1}. The mass in the TG thermogram of BDVE-stabilized Cu fine particles begins to increase at ca. 87 °C and at higher than 177 °C, Cu_2O change into CuO. The hot pressed sample shows better anti-oxidation ability. The oxidation from Cu to Cu_2O begins at ca. 120 °C.

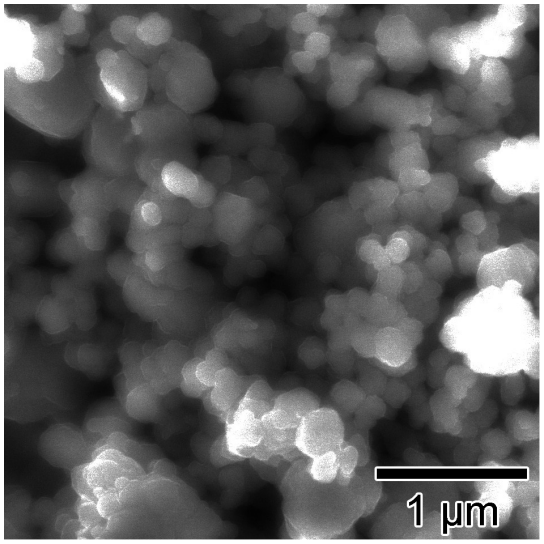

Figure S3. SEM image of the Cu pellets obtained by hot-pressing at 100 °C.