Supporting Information

for

Molecular Approach to Enhance Thermal Conductivity in Electrically Conductive Adhesives

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Figure S-1. The characterization of the as-synthesized AgEH. (a) The XRD patterns of the prepared AgEH correspond well to the database signals. (b) The IR spectra of AgEH completely match with commercial standards.

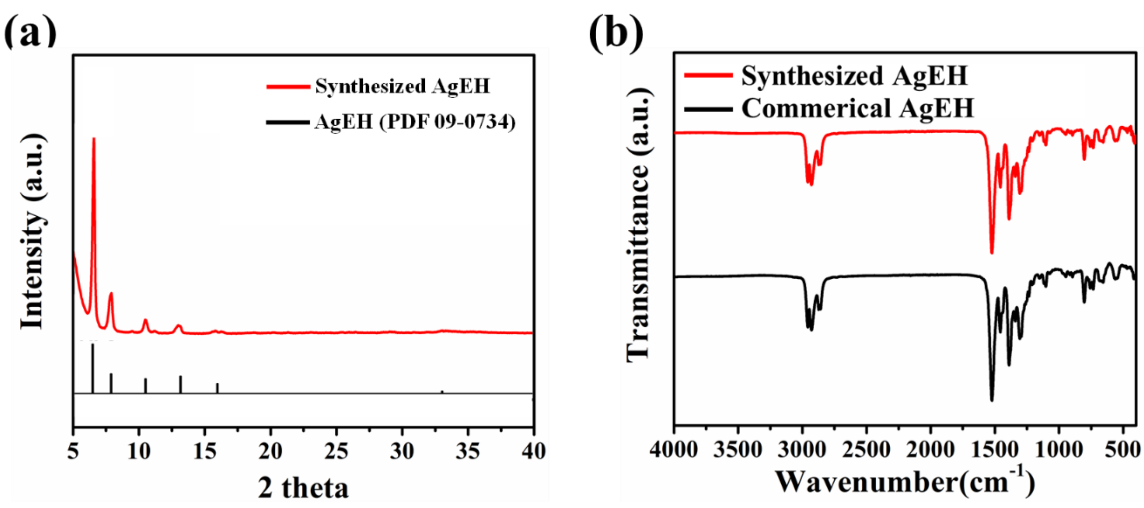

Figure S-2. The SEM images of the dendrite-like Ag aggregates.

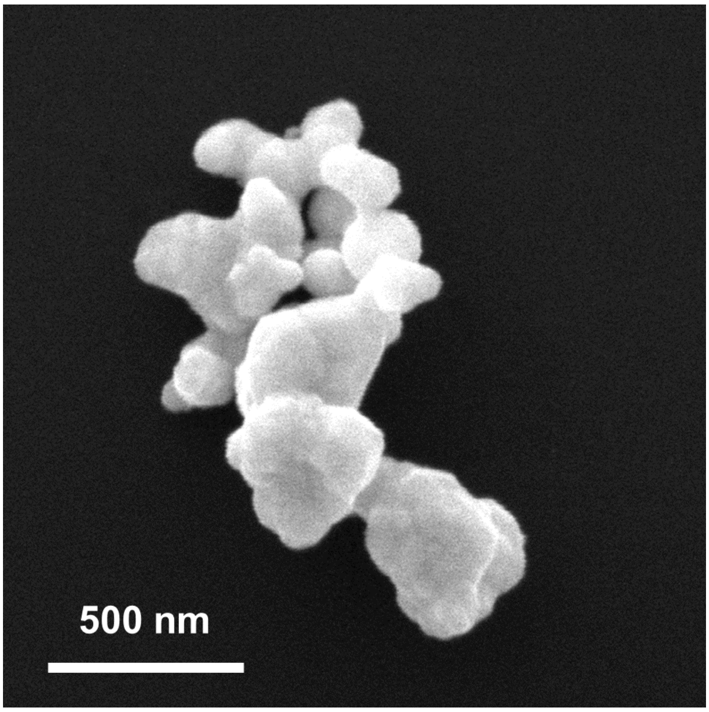

Figure S-3. The DSC results of mixing the epoxy and curing agents only. The data show exothermic peak of epoxy curing around 120°C.

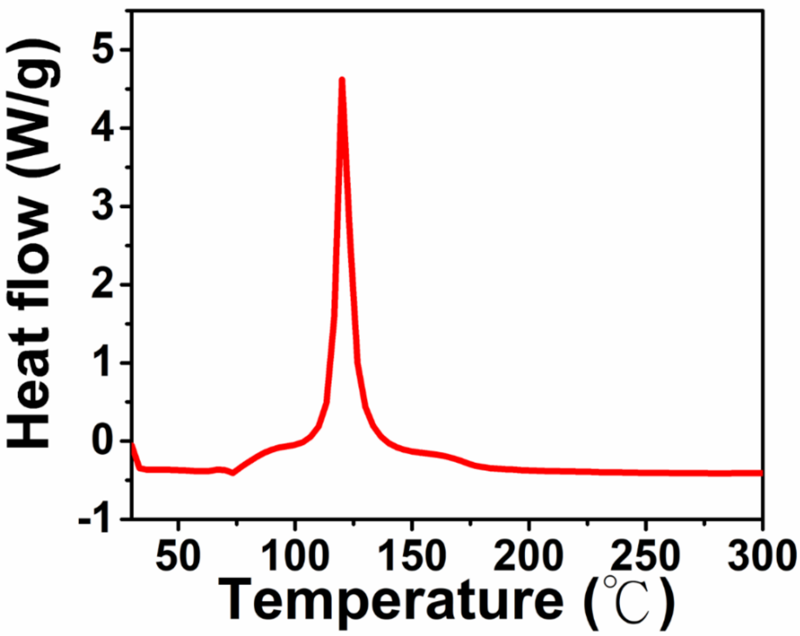

Figure S-4. Size distribution based on the SEM images of AgEH-yielded particles with the varied AgEH addition. The SEM images of each samples are identical to Fig. 4. (a) The 1.75 wt% samples showing the average diameter of 13.3±2.9 nm; (b) the 3.5 wt% samples for 15.9±4.4 nm; (c) the 7 wt% samples for 46.5±30.8 nm.

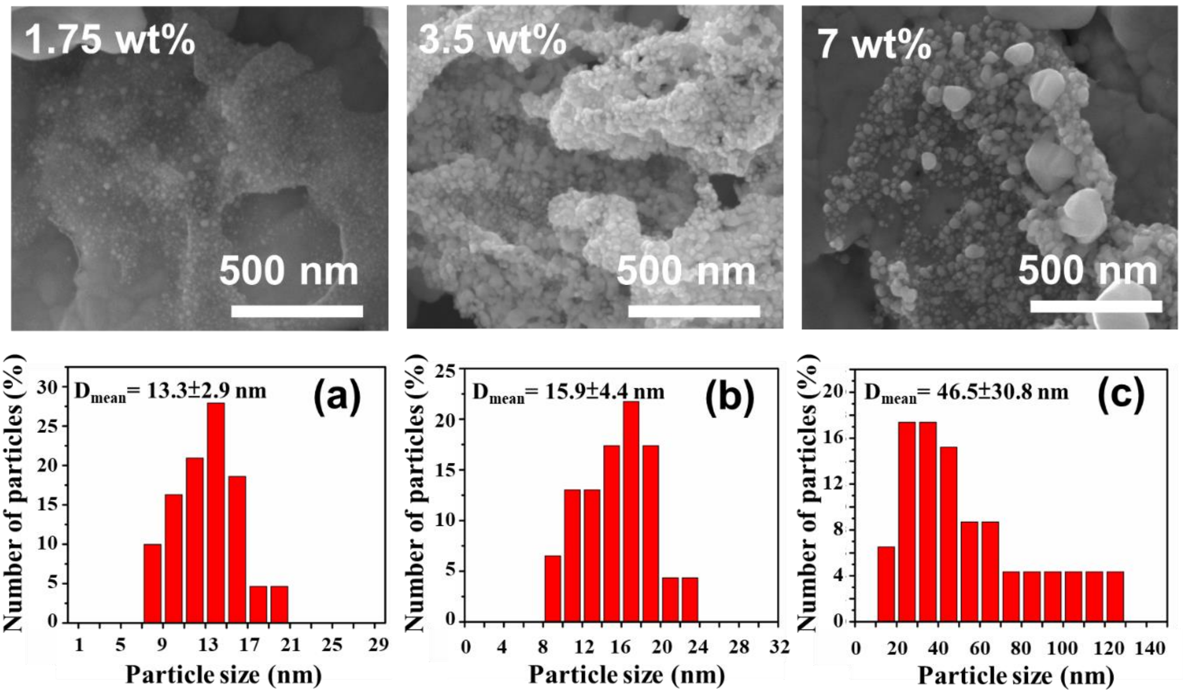

Figure S-5. The SEM images show the ultrafine Ag nanoparticles are mainly embedded in the resin matrix.

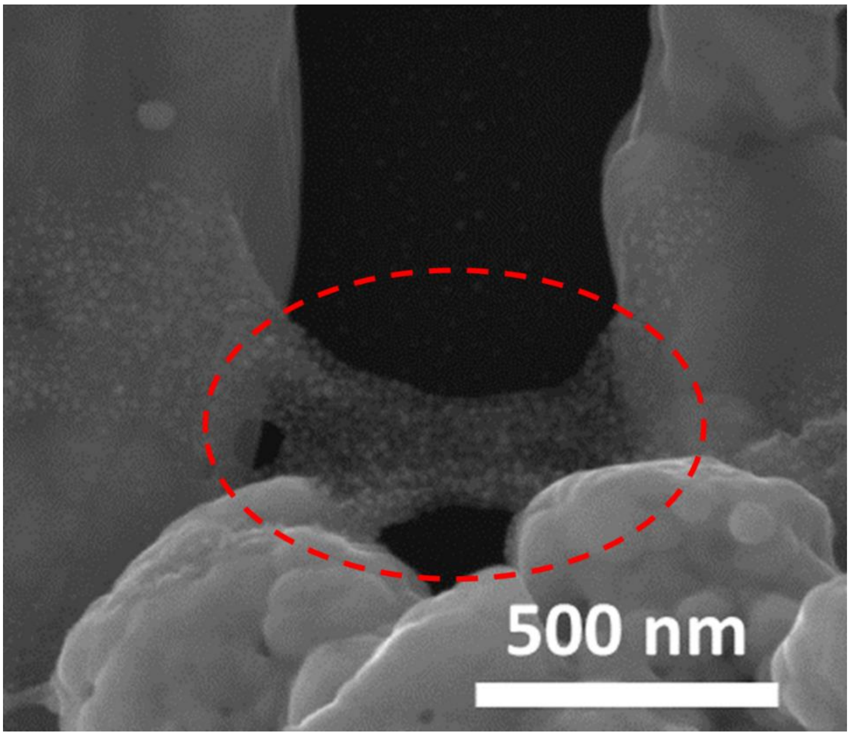

Figure S-6: The typical EDXS results of AgEH-yielded nanoparticles. The spectra of point 1 demonstrate that the as-observed particles are comprised of Ag with the background signals of Si substrates; point 2 shows only the background signals without Ag.

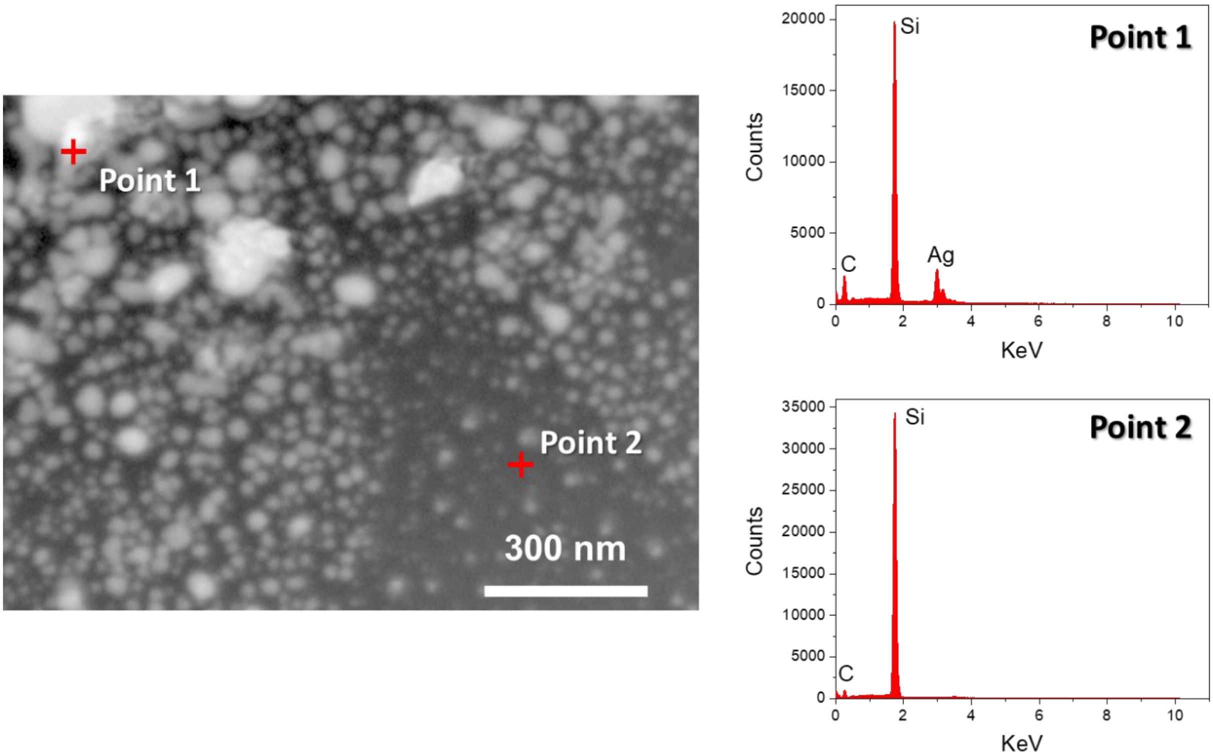

Fig. S-7. The TPD-MS of AgEH thermal decomposition in Ar. The intense m/z 44 corresponds to CO2 release.