

Supplementary Information

Efficient hydrogen production from formic acid using TiO₂-supported AgPd@Pd nanocatalysts

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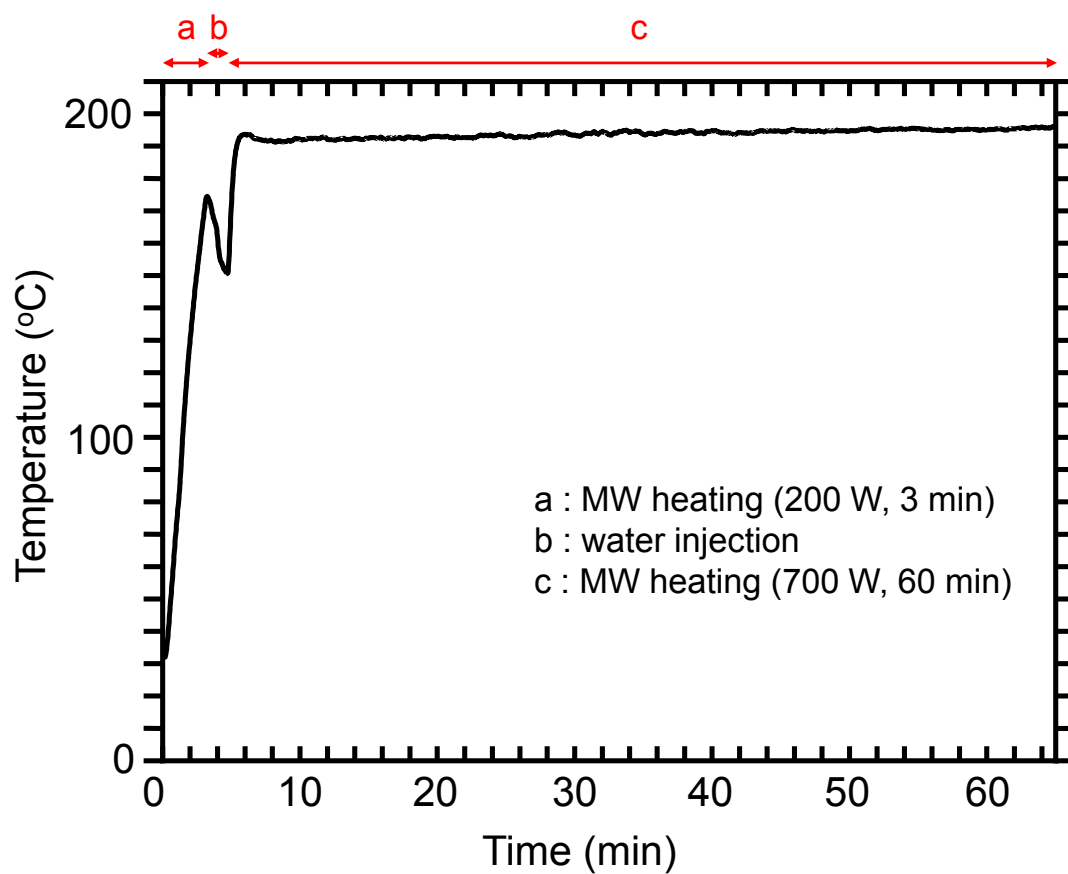


Fig. S1 Temperature profile of microwave heating process when TiO₂ nanoparticles were formed.

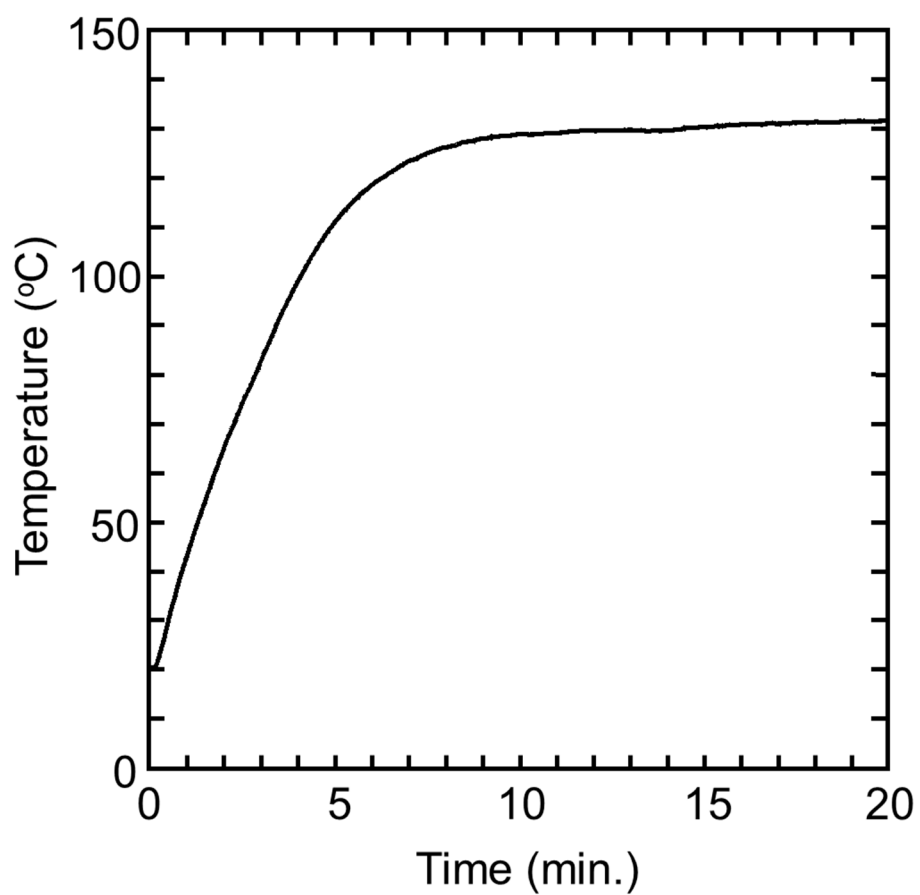


Fig. S2 Temperature profile of microwave heating process when Ag nanoparticles were formed.

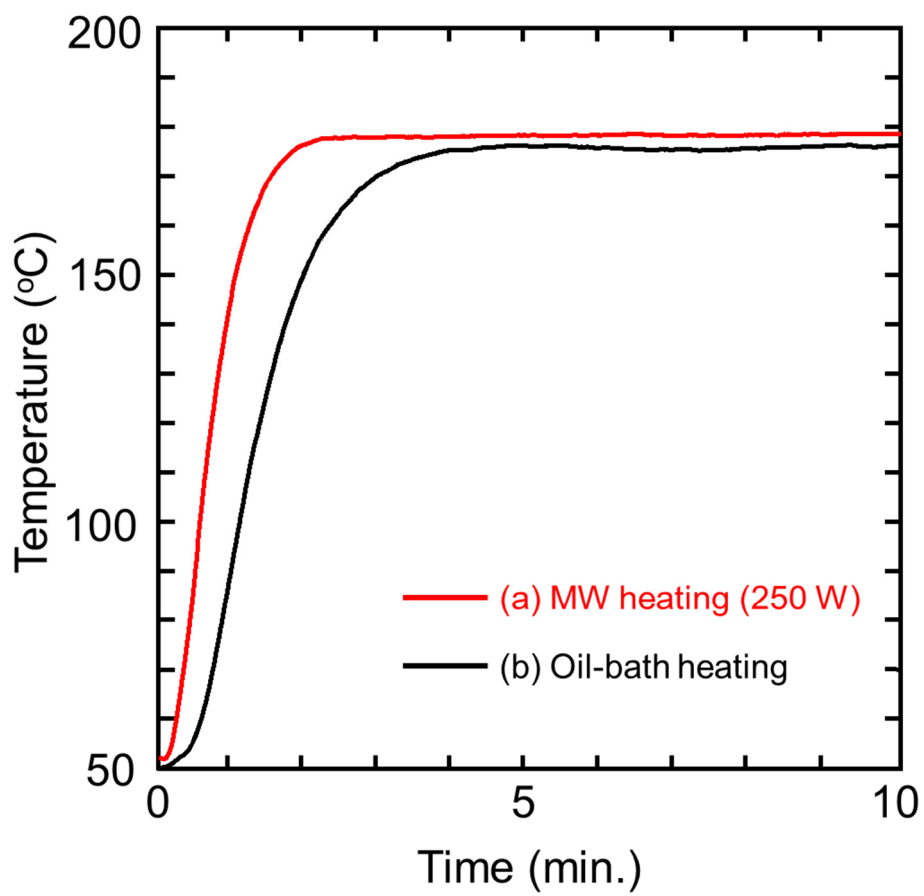


Fig. S3 Temperature profile of Pd shell reduction process using (a) MW heating (250 W) at 178 °C and (b) oil-bath heating at 176 °C.

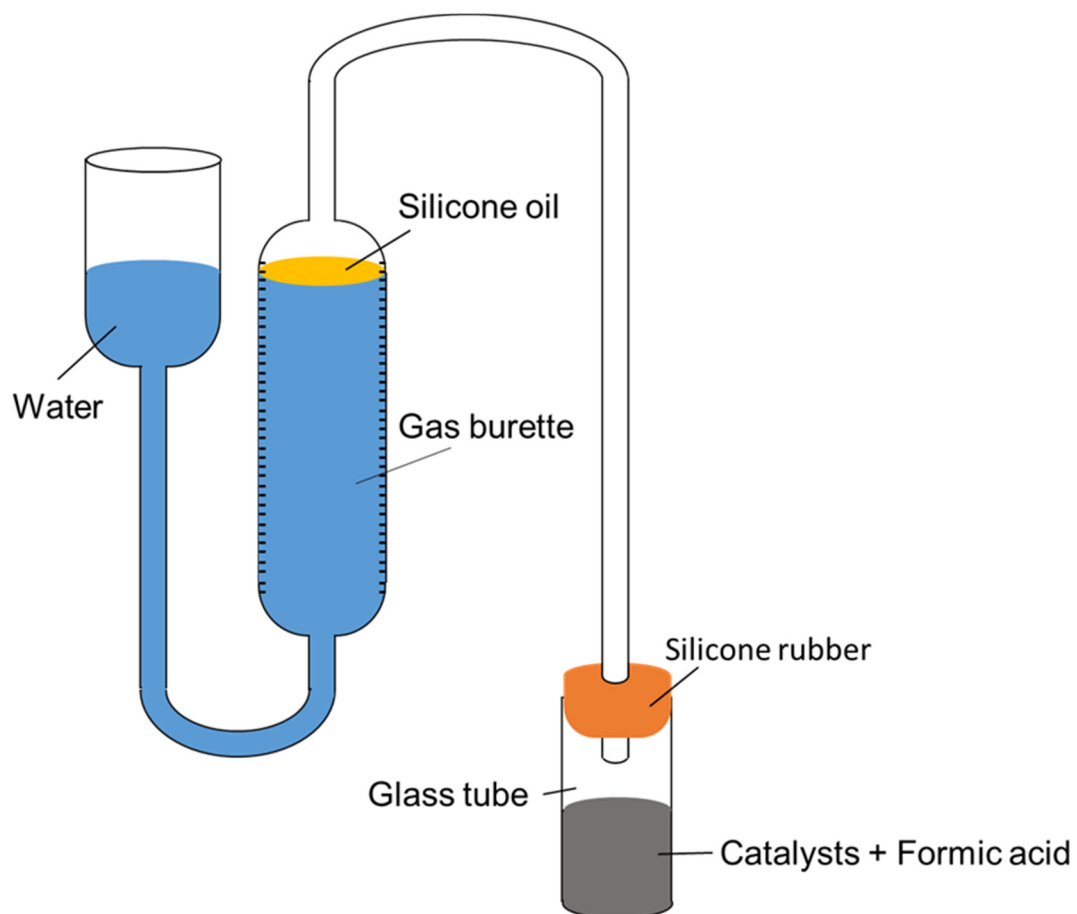


Fig. S4 The schematic view of hydrogen production activity measurement system. 1ml silicon oil was added on surface of water in the gas burette to keep out dissolution of H_2 to water. Before measurement, the glass tube was filled with Ar gas. All measurement had be carried out at normal pressure.

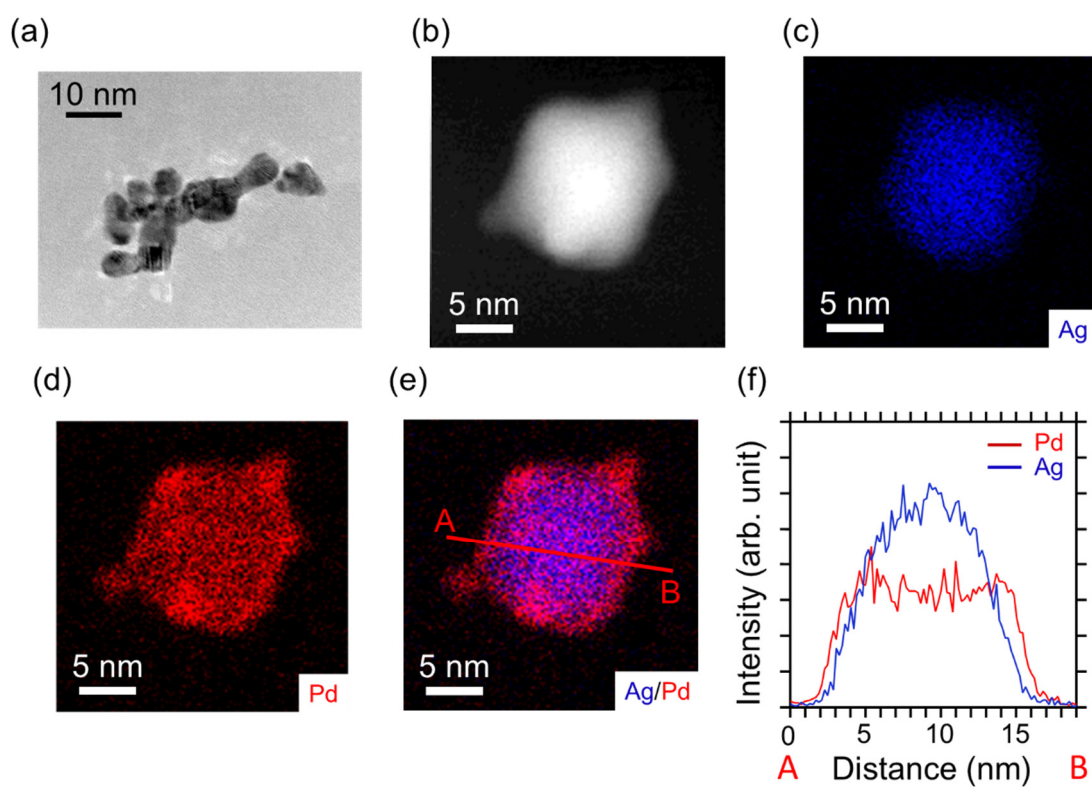


Fig. S5 TEM, STEM, and STEM-EDS images of the bare AgPd@Pd nanocatalysts reduced by MW (250 W) (a) TEM image, (b) STEM image, (c) Ag component, (d) Pd component, (e) Ag and Pd components, and (f) line analysis data along the red line shown in Fig. S4(e).