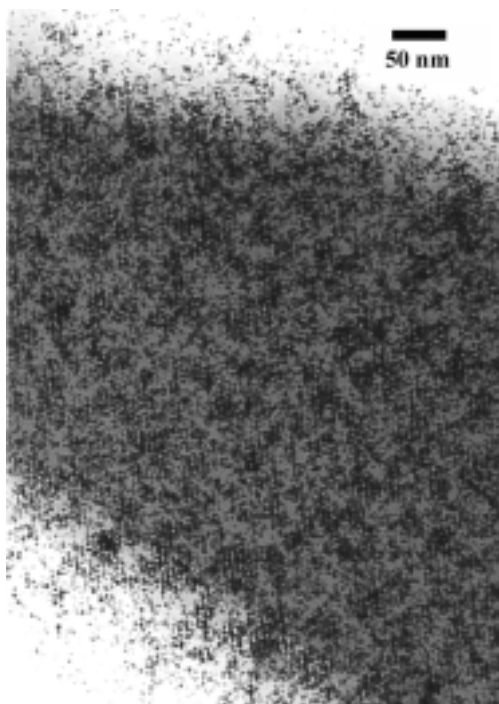


# Supporting Information

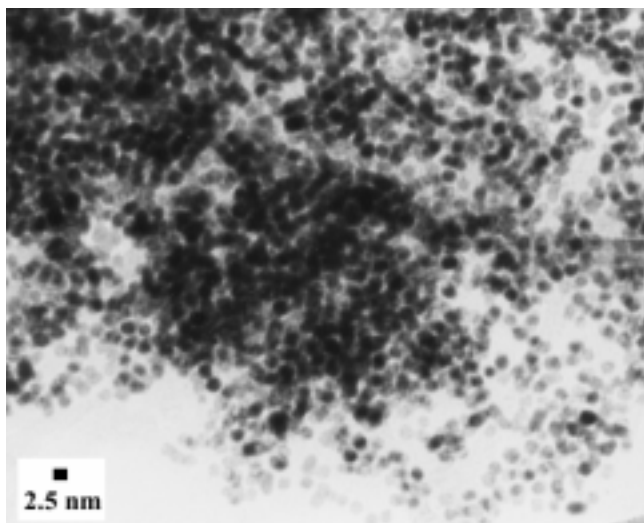
## Template Synthesis of Nanoparticle-Arrays of Gold and Platinum in Mesoporous Silica Films

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Yoko Kumai,<sup>‡</sup> Yusuke Akimoto,<sup>‡</sup> and Masaru Ichikawa<sup>\*,†</sup>

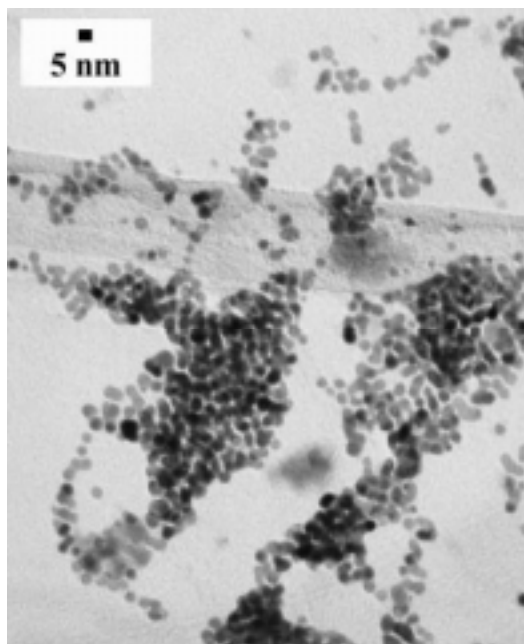
Catalysis Research Center and Division of Chemistry, Graduate School of Science, Hokkaido University, Sapporo 060-0811, Japan, and Toyota Central R&D Labs, Inc., Nagakute, Aichi 480-1192, Japan



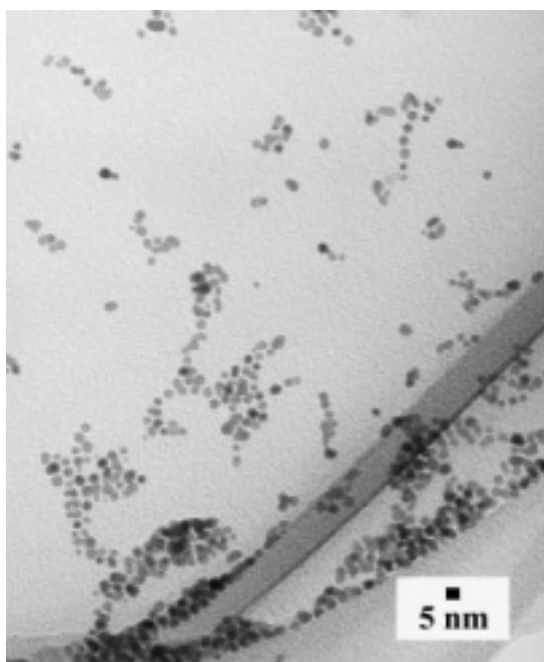
**Figure S1.** A TEM image of Pt nanoparticles in mesoporous silica film. A  $\text{CH}_2\text{Cl}_2$  solution of  $\text{Cp}^*\text{Pt}(\text{CH}_3)_3$  was used as a Pt precursor to impregnate in the film, and the impregnation is repeated three times. Then the sample was reduced in  $\text{H}_2$  at 573 K for 2 h.



**Figure S2.** A TEM image of unsupported Au nanoparticles with  $\text{PPh}_3$ .



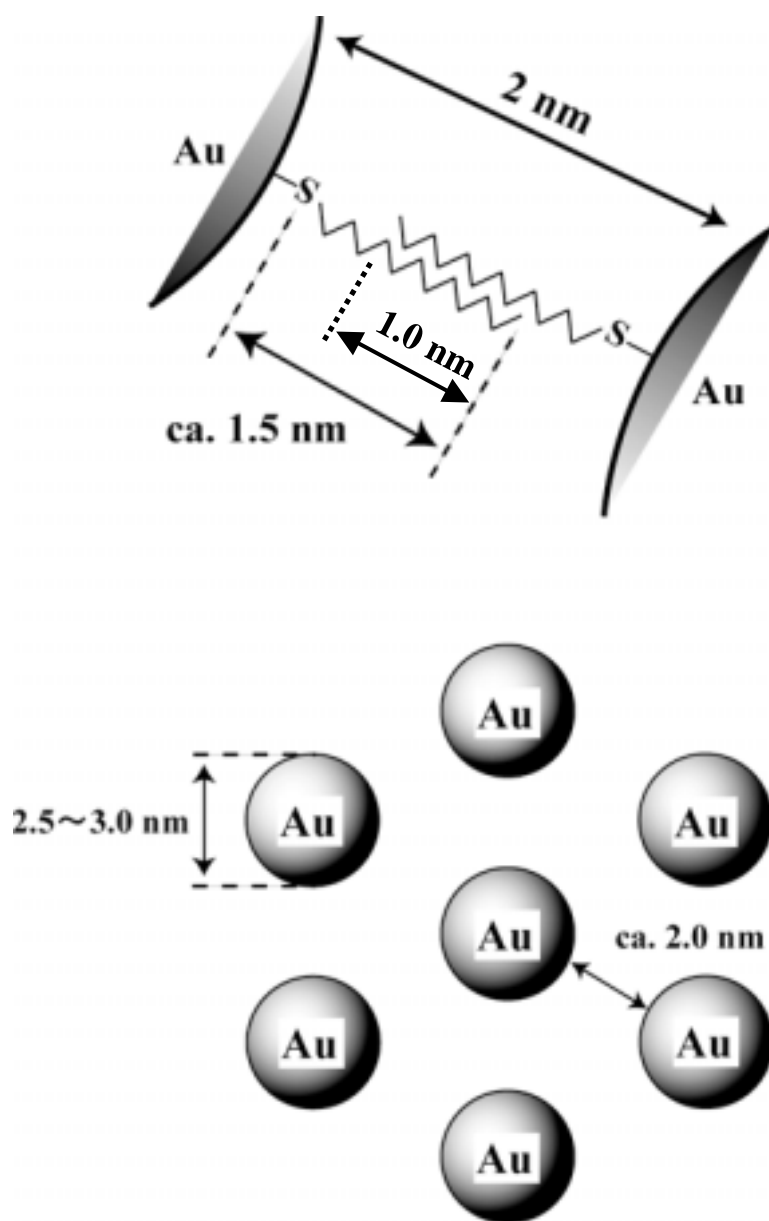
**Figure S3.** A TEM image of unsupported Au nanoparticles with 1-hexanethiol ( $\text{C}_6\text{H}_{13}\text{SH}$ ).



**Figure S4.** A TEM image of unsupported Au nanoparticles with 1,10-decanedithiol ( $\text{HS}(\text{CH}_2)_{10}\text{SH}$ ).



**Figure S5.** A TEM image of unsupported Au nanoparticles with 1-octadecanethiol ( $\text{C}_{18}\text{H}_{37}\text{SH}$ ).



**Figure S6.** A proposed structure of unsupported Au nanoparticles with 1-dodecanethiol (C<sub>12</sub>H<sub>25</sub>SH).