

### Formation of gold nanoparticle array by self-assembled supramolecule template

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Gold nanoparticle array was fabricated by thermotropic supramolecule template at room temperature under air condition. Supramolecule was used form an inverted hexagonal phase with several micrometer length. Supramolecule dissolved in THF and added NaOH aqueous solution to exchange  $H^+$  with  $Na^+$ . After mixing supramolecule and NaOH by stirring, the solution was mixed hydrogen tetrachloroaurate(III) trihydrate ( $HAuCl_4 \cdot 3H_2O$ ) by stirring to exchange  $Na^+$  with  $Au^{3+}$ . Then, deposits were arised in the solution. Gold nanoparticles were prepared by reduction of  $HAuCl_4$  using UV irradiation. TEM images show the fabrication of gold nanoparticle array.