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Bimetallic core-shell nanocomposites using weak reducing agent and their transformation to alloy nanostructures

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![XPS spectrum of Au(I) intermediate](image)

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![UV-visible spectrum](image1)

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In the XPS spectra we noted that a small intense peak at higher binding energy (370.4 eV and 376.3 eV) along with the peak due to Ag(0). This could be attributed to the oxidation of Ag nanoparticles during sample preparation. In a similar manner a small peak appeared in the lower binding energy (336 eV and 341.3 eV) in Pd 3d spectrum which could be assigned to Pd(0). The origin of the Pd(0) could be due to the reduction of Pd(II) ions by TMAB in the solid state during sample preparation.
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![XRD pattern](image)

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![HAADF image and EDS spectrum](image)
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![UV-visible absorption spectra](image)

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![Ag@Au core-shell nanoparticles](image)