

Synthesis of the platinum particle with the pH variation for the particle size control

Platinum is a precious metal widely used in the jewelry industry due to its property and intrinsic value. The different particle sizes of platinum can be applied in various applications, especially for jewelry production. In the present article, submicron, and nano platinum particle sizes were synthesized through simple chemical reduction methods and the effect of pH variation was revealed. The Scanning Electron Microscope (SEM) morphological study shows that the particle size of synthesized platinum was affected by the pH value. The size of the obtained particle was decreased from the submicron to the nano one while the pH was increased. The UV-Vis spectra indicate the maximum absorption at 202 and 237 nm confirming the spherical shape of the platinum particle. The FT-IR spectroscopy was used to analyze the residual of the synthesis. The result shows that there is no indication of those in the synthesized particle. Additionally, this synthesis can provide stability in terms of size and shape, as well as high production yield.

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