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Hyperspectral Imaging as a Facile and Non-Destructive Method for Size Analysis of Gold Nanoparticles Deposited on Porous Materials

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Herein, the feasibility of using hyperspectral imaging (HSI) for fast and non-destructive size estimation of supported gold nanoparticles (AuNPs) is demonstrated. NPs of different sizes in the range of 2–12 nm in diameter are deposited onto silica supports with various pore structure. The NPs sizes are determined on the basis of TEM images. Data from HSI and UV–vis spectra, i.e., the location of the reflectance minimum and absorption maximum, respectively, are compared, and good agreement is obtained. Thus, it is shown that the hyperspectral camera can be an effective tool to characterize the size of gold NPs deposited on a porous supports.

Metryczka

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