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Time effect on the red shift of surface plasmon resonance of gold nanoparticles by using hydrogen chloride solution

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Abstract : The solutions of sodium chloride and hydrogen chloride have a high effect on shifting the peak of surface plasmon resonance of gold nanoparticles to the near infra-red region. The gold nanoparticles were synthesized by chemical technique. sodium chloride and hydrogen chloride solutions were added to the colloidal gold nanoparticles. sodium chloride solution has a high effect on shifting the peak absorbance of surface plasmon resonance of gold nanoparticles to the near infra-red region from 524nm to 715nm while hydrogen choride solution has much less effect on shifting the peak absorbance from 715nm to 725nm. The results showed no stability in the peak absorbance of surface plasmon resonance of gold nanoparticles when adding hydrogen chloride solution but more shifting in near infra-red region and more broadening in the absorbance when the time pass.

Keywords : Red shift, SPR, NaCl, HCl, NIR, AuNPs.

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