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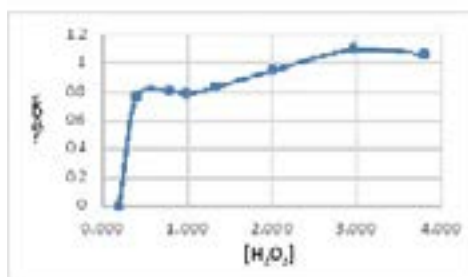
# ADVANCED MATERIALS & PROCESSING

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## Starch capped silver nanoparticles as colorimetric sensor for hydrogen peroxide recognition in aqueous medium

Abdelaziz Elgamouz and Baraa Hafez  
University of Sharjah, UAE

In the present study, starch capped silver nanoparticles (AgNP) were synthesized successfully and characterized by using Fourier transform infrared spectroscopy, scanning electron microscopy, dynamic light scattering and energy-dispersive X-ray Spectroscopy. The nanoparticles were used for the sensing of hydrogen peroxide based on a colorimetric technique. The nanoparticles were synthesized in a One pot reactor using  $\text{AgNO}_3$  as Ag source and sodium borohydride ( $\text{NaBH}_4$ ), as reducing agent. The silver catalytic ability for the decomposition of hydrogen peroxide was assessed using different concentration of AgNP, pH effect, temperature effect and different loads of hydrogen peroxide. The yellow-greenish color of the silver nanoparticles solution was found to change gradually to a transparent solution.



### Biography

Abdelaziz Elgamouz is an assistant Professor of bioanalytical Chemistry in the University of Sharjah. His research interest lies in coordination chemistry of macrocyclic ligands that has been a fascinating area of current research interest all over the world. The continued interest and quest in designing new macrocyclic ligands stem mainly from their use as models for protein-metal binding sites in a substantial array of metalloproteins in biological systems, as synthetic ionophores, as models to study the magnetic exchange phenomena, as therapeutic reagents in chelate therapy for the treatment of metal intoxication, as cyclic antibiotics that owe their antibiotic actions to specific metal complexation, to study the guest-host interactions, and in catalysis. Recognition of the importance of complexes containing macrocyclic ligands has led to a considerable effort being invested in developing reliable inexpensive synthetic routes for these compounds.

aelgamouz@sharjah.ac.ae

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