

Obtaining of gold nanoparticles in presence of chitosan. A process thermally assisted

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In recent years, metal nanoparticles have been the subject of many studies. Nanoparticles composed of noble metals, particularly gold, are exceptional due to their special properties, e.g., optical, magnetic, electronic and optoelectronic properties. Polymers have been broadly used to develop metallic nanoparticles taking advantage of their capabilities, either, as stabilizers or simultaneously as reductants and stabilizers. [1,2]

In this work, we show the results of a simple method for obtaining gold nanoparticles in presence of chitosan. The synthesis was developed by thermal assistance, in pyrolysis reactors and in small crucibles during the essays of thermal analysis.

The study include thermal analysis TGA and DSC. The obtained nanoparticles were characterized by UV-Vis spectroscopy, transmission and scanning electron microscopy TEM and SEM.

Acknowledgement

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References

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- [2] A. Leiva, S. Bonarrrd, M. Pino, C. Saldías, G. Kortaberria, D. Radic, *European Polymer Journal* 68 (2015) 419–431

Figures

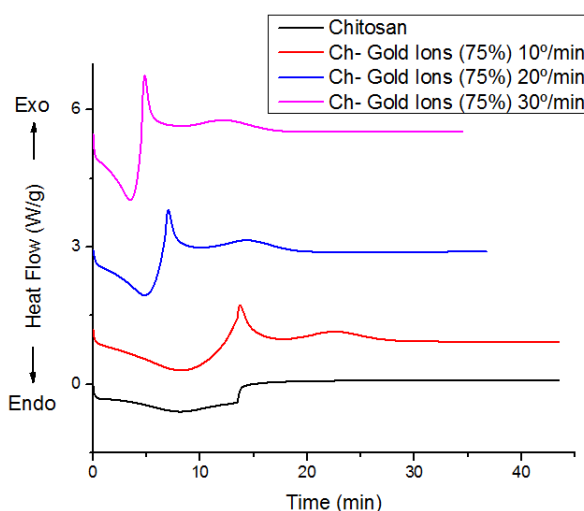


Figure 1. DSC thermograms of chitosan and chitosan with Au III.

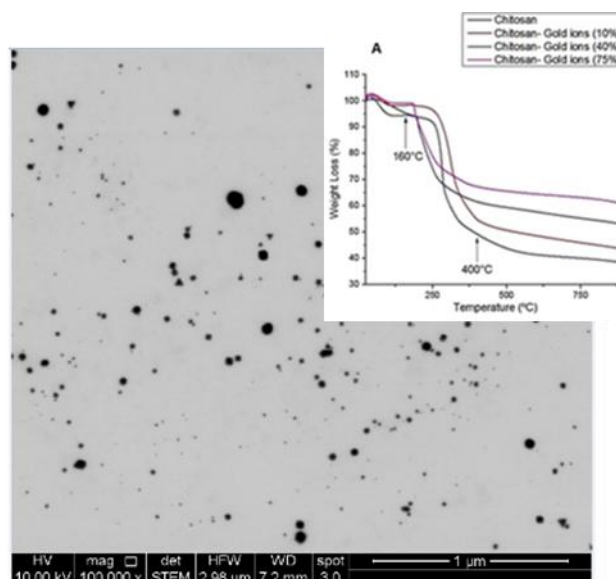


Figure 2. TEM image of gold nanoparticles obtained by chitosan/Au(III) blend heating, and thermal degradation profiles of chitosan/Au(III) blends (insert).