

Abstract Submitted
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Methods of measuring chitosan and gold interaction in the formation of biocompatible gold nanoparticles SAMANTHA FRANKLIN, KELLY NASH, ZANNATUL YASMIN, University of Texas at San Antonio — Chitosan, a macromolecule, taken from crustaceans, has been used to create biocompatible gold nanoparticles (AuNPs). In this study, the formation of the gold nanoparticles synthesized with the chitosan solution was measured using different UV methods. The UV light is used to reduce the Au ions in the solution into gold nanoparticles, in which the result is biocompatible nanoparticles upon reduction. Different molar concentrations of a monovalent salt, such as sodium chloride (NaCl), were added to the chitosan and gold solution, and the interactions of the chitosan and NaCl with the gold formation were also measured. This was done to study the influence of the chitosan on the shape and size of the nanoparticles that formed. In this study, two different types of UV light were used; a Spectrolinker XL-1500UV Crosslinker with a wavelength (λ) at 365nm and an Nd:YAG laser with λ at 355nm. Samples that were measured were dilute solutions and concentrations, which allow for measuring morphology with dependent optical response that can be observed with certain optical spectra systems. Formation of the particles were studied using scanning electron microscopy (SEM) and a dynamic light scattering system (DLS) that allowed for measurement of the zeta-potential (ζ).

Samantha Franklin
University of Texas at San Antonio

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