

Abstract Submitted
for the TSF10 Meeting of
The American Physical Society

Shape-Controllable Synthesis of Gold Nanostructure and Their Application in Surface-Enhanced Raman Scattering (SERS)¹ JIANHUI YANG, DHIRAJ SARDAR, Department of Physics and Astronomy, University of Texas at San Antonio, San Antonio, Texas 78249 — Noble metal nanostructures have attracted considerable attentions because of their various applications such as imaging, catalysis, sensing, SERS, diagnosis, and therapy. Shape-control provides an important strategy for designing metallic nanostructures to tailor their physical and chemical properties. Ethylenediaminetetraacetic acid (EDTA), a chelating agent, was used for the controllable synthesis of coral-shaped gold nanostructures in aqueous solution. EDTA serves not only as a reducing agent but also as a particle capping agent in the formation of coral-shaped Au nanostructures. It is found that the concentration and reaction temperature play significant effects on the formation and growth of these novel nanostructures. Moreover, these Au nanostructures show excellent SERS enhancement ability, which could serve as highly sensitive and reproductive SERS substrates for chemical and biological detection.

¹This work was supported by the National Science Foundation Partnerships for Research and Education in Materials (PREM) Grant No. DMR-0934218.

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Date submitted: 17 Sep 2010

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