

Title: Construction of Ag micro-hemisphere nanostructures for Surface Enhanced Raman spectroscopy

Abstract: The silver micro-hemisphere nanostructures are fabricated by the constant electric current system in ITO substrates. As regularly Ag hemispherenanoparticles(HNPs) grow in the aqueous solution of AgNO₃ and sodium citrate, the micro-flowers consist of nano-sheets which formation of many Raman "hot spots" in the deep gaps between them. Confirm by XRD,UV-vis and SEM characterization measures, the Ag micro-hemisphere films were orderly synthesized on the ITO substrates. Furthermore, Different current densities were selected to investigate the growth of Ag microspheres and R6G molecule was used as the probe molecule to reflect the SERS performance. The experiment results prove that this simply methods prepared the substrates with high-performance Raman effect.