Abstract:
The development of biocompatible nanoparticles for in-vivo molecular imaging and targeted therapy is an area of considerable current interest across a number of science, engineering, and biomedical disciplines. Nanometer-sized particles have functional and structural properties that are not available from either discrete molecules or bulk materials. When conjugated with biomolecular targeting ligands such as monoclonal antibodies, peptides or small molecules, these nanoparticles can be used to target malignant tumors with high specificity and affinity. These SERS nanoparticles are considerably brighter than semiconductor quantum dots with light emission in the near-infrared window. When conjugated to tumor targeting ligands the conjugated nanoparticles are able to target tumor biomarkers.