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SANS Studies of DNA-Templated Silver Nanoclusters HONGYU GUO, SUNIL SINHA, University of California, San Diego, JASWINDER SHARMA, JENNIFER MARTINEZ, ANDREW SHREVE, Los Alamos National Laboratory — DNA-templated silver nanoclusters have received significant attention due to their useful properties, including high molar absorptivities, good quantum yields and photostability, and small size. Their potential use may range from biology to nanoscience. For example, they are promising biological fluorescence probes due to their fluorescence properties dependence to DNA template sequence. However, some basic features, like the structure of the DNA/Ag complex, are still unclear. We have conducted Small Angle Neutron Scattering (SANS) experiments to investigate the formation of the Nanoclusters. By comparing the SANS data from conjugated samples, pure DNA and DNA/Ag complex, we can characterize the size and position of the Ag clusters along the DNA strand. The time evolution of the DNA/Ag complex can also be studied since such aging process is kind slow. We found that the formation and aging of the Ag Nanoclusters are also strongly dependent on the DNA template sequence.

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