



Heavy Element Research at Texas A&M University

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Texas A&M University has a vibrant research program in the areas of online chemistry and nuclear reactions. Recently, our group has been developing organic self-assembled monolayers (SAMs) as surfaces for the adsorption of single atoms. Straight-chain thiols with carefully chosen terminal groups have been self-assembled onto Au-coated Si detectors, which creates a new interaction surface. We have measured the adsorption of Er, Ir, and At on two different SAM surfaces, Au-coated Si, and bare Si in an online experiment. Our group is also studying the influence of deformation on compound nucleus survival in fusion-evaporation reactions. We have measured cross sections for the $^{44}\text{Ca} + ^{154,156,157,160}\text{Gd}$ reactions, and the results suggest that collective effects are reducing the survival of the compound nucleus. Finally, our group has worked to install and characterize the gas-filled separator that was previously known as SASSY II. Along with some improvements in the intensity of beams from the Texas A&M K150 cyclotron, these efforts have increased the sensitivity of our accelerator-based experiments. This talk will discuss the most recent results of these experiments and future plans.