

Abstract Submitted
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A low and hyperthermal energy UHV ion beamline for surface scattering spectroscopies M.P. RAY, S.A. MOODY, C.E. SOSOLIK, Clemson University Department of Physics and Astronomy — We are using a differentially pumped beamline to provide well- collimated, monoenergetic beams of noble gas and alkali-metal ions that range in energy from $<10\text{eV}$ to 10keV . These ion beams are scattered from a surface (e.g. $\text{Cu}(001)$) to study charge transfer effects, energy loss, and the excitation of surface phonons and excitons. The ion beam is focused into a UHV scattering chamber that possesses capabilities for studying and characterizing samples using LEED, Auger spectroscopy, and a Kelvin probe for work function measurements. Recent additions to this setup include replacing diffusion pumps with turbo pumps as well as the addition of a fast entry load-lock sample exchange system. Our current research is focused on developing a source to produce an ion beam of C_{60} as well as studying charge transfer and energy loss effects at the low and hyperthermal energy range. Also, we are investigating chemicurrents associated with Schottky diodes in this energy regime.

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