

Status of the Frankfurt low energy electrostatic storage ring (FLSR)

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The Frankfurt Low Energy Storage Ring (FLSR)[1] is an electrostatic storage ring at Institut für Kernphysik, Goethe Universität, Frankfurt am Main, Germany. It has been installed as a novel tool for experiments of the reaction dynamics of vibrational cool molecular ions. First beam was stored in 2013. Since then a number of ions/molecules has been stored. First experiments on dissociative recombination of vibrational cold HeH have been carried out after installation of an electron gun at one of the four interaction points (IP) of the ring (points of enhanced ion density). A large, position sensitive MCP detector has been installed at the 180° port of the ring to detect neutral fragments. In order to determine the kinetic energy loss from reactions of molecules with residual gas ions, this set up has recently been extended by a spectrometer for recoil ions from the residual gas as a first stage of an upgrade to a full reaction microscope, which is planned in the next future. In this contribution results from the experiments above will be presented and design considerations will be discussed.

[1] K.E. Stiebing, V. Alexandrov, R. Dörner, S. Enz, T. Kruppi, A. Schempp, H. Schmidt Böcking, M. Völz, P. Ziel, M. Dworak, W. Dilfer; Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment; 614(1):10-16, 2010

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