Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Slow beams of molecules with masses up to 6000 u HENDRIK ULBRICHT, SARAYUT DEACHAPUNYA, ANDRE STEFANOV, MARKUS ARNDT, Faculty of Physics, University of Vienna, Boltzmanngasse 5, 1090 Vienna, Austria — Slow molecules are desirable for various experiments, among them matter wave interferometry, precision metrology, collision studies and the improved control in the deposition of molecular nanopatterns. Here we report on effusive beams of intact per-fluorinated molecules with masses up to 6000 u and beyond. The molecules in these beams are observed to have a mean velocity of down to 30 m/s. And the mass selected signals of the post-ionized particles are so high that even molecules with a longitudinal velocity as low as 10 m/s and with a transverse velocities below 10 cm/s can still be detected. We discuss potential strategies and applications for further slowing, trapping and focusing of these molecules.

Hendrik Ulbricht
Faculty of Physics, University of Vienna, Boltzmanngasse 5, 1090 Vienna

Date submitted: 16 Nov 2006 Electronic form version 1.4