Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Fragmentation dynamics inside helium nanodroplets: new theoretical results NADINE HALBERSTADT[1], LCAR-IRSAMC, CNRS and Universite Toulouse, DAVID BONHOMMEAU[2], University of Minnesota, MARIUS LEWERENZ[3], Universite Paris Est, Laboratoire de Chimie Theorique — We present a theoretical study on the effect of a helium nanodroplet environment on the fragmentation dynamics of embedded rare gas cluster ions. The helium atoms are treated explicitly, with zero-point effects taken into account through an effective helium-helium interaction potential. All the nonadiabatic effects between electronic states of the ionized rare gas cluster are taken into account. Our results reveal new mechanisms for the cooling by helium, and show that the dopant can be ejected from the helium droplet. These results will be presented and discussed.

[1]118 route de Narbonne, 31062 Toulouse CEDEX 9, France
[2]207 Pleasant Street S.E., 230 Smith Hall, Minneapolis, MN 55455-0431, USA
[3]5 Bd Descartes, 77454 Marne la Vallee Cedex 2, France

Nadine Halberstadt
LCAR-IRSAMC, CNRS and Universite Toulouse

Date submitted: 16 Nov 2007 Electronic form version 1.4