

# Use of Laboratory Data to Model Interstellar Chemistry

Vidali, G.\*    J.E. Roser\*    E. Congiu\*<sup>†</sup>    G. Manico'<sup>‡</sup>  
Pirronello, V.<sup>‡</sup>

February 3, 2006

## Abstract

We show that experiments conducted in the laboratory under simulated astrophysical conditions have yielded quantitative information on molecule formation on and ejection from dust grain analogues. Data on processes leading to the formation of molecular hydrogen on different surfaces of dust grain analogues will be presented. We then illustrate how, in close collaboration with theoretical groups, these results are used in models of the chemical evolution of ISM environments. As the result of these studies, a new picture of the formation of molecular hydrogen on dust grains is emerging.

This work was supported by NASA through grants NAG5-9093, NAG5-11438, and NNG05 GF 07G (G.V) and by the Italian Ministry for University and Scientific Research through grant 21043088 (V.P).

---

\*Syracuse University, 201 Physics Bldg., Syracuse, NY13244-1130 USA, email: gvidali@syr.edu, jeroser@syr.edu

<sup>†</sup>Università di Cagliari, Department of Physics, S. P. Monserrato, 09042 Cagliari, Italy

<sup>‡</sup>DMFCI, University of Catania, Viale A.Doria 6, Catania CF3 5QL, UK, email: gmanico@dmfci.unict.it, valerio@femto.dmfci.unict.it