

Abstract Submitted
for the DAMOP11 Meeting of
The American Physical Society

Trends in Positron Interactions with Bio-Molecules¹ J.R. MACHACEK, P. PALIHAWADANA, C. MAKOCHEKANWA, J.P. SULLIVAN, CAMS, Australian National University, Canberra, Australia, M.J. BRUNGER, CAMS, Flinders University, South Australia, S.J. BUCKMAN, CAMS, Australian National University, Canberra, Australia — We present new measurements of positron scattering from a series of biologically relevant molecules; Uracil ($C_4H_4N_2O_2$), Tetrahydrofuran or THF (C_4H_8O) and 3-hydroxy-THF ($C_4H_8O_2$). These measurements were taken using the high resolution, low energy positron beam at the Australian National University. The energy of the magnetically confined positron beam can be tuned between 1 and 200 eV, and the energy resolution of the beam is typically 60 to 100 meV. The measurements include absolute total scattering and positronium formation cross sections and have enabled us to assemble a set of cross sections which can be used to investigate positron transport in systems which contain these molecules, or for which these molecules serve as useful analogues, such as DNA and RNA. One of the ultimate aims of this work is to combine state-of-the-art measurements of positron interactions with bio-molecules, with models of positron transport in these systems.

¹This work is supported by the Australian Research Council and the Australian Government's ISL Program.

J. R. Machacek
CAMS, Australian National University, Canberra, Australia

Date submitted: 07 Feb 2011

Electronic form version 1.4