

Waterloo Symposium on Chemical Physics

October 25-27, 1991

at the University of Waterloo

REGISTRATION begins at 6:30 p.m., Davis Centre Room 1301

SESSION I: Friday October 25, 1991 - P.M.

Davis Centre 1302

Chair: John Hepburn

- 7:30 - 8:10 Takayoshi Amano (NRC, Ottawa)
The Dissociative Recombination Rate of H_3^+
- 8:10 - 8:30 Francis Markel (University of Rochester), N.S. Ferris (Eastman Kodak), I.R. Gould
(Eastman Kodak) and Ann B. Myers (University of Rochester)
Internal Reorganization Energies Accompanying Photoinduced Electron Transfer
- 8:30 - 8:50 Robert D.J. Froese and John D. Goddard (University of Guelph)
The Rejection of Oxygen Atoms with Carbon Disulfide: Potential Energy Surface
Features of a Preliminary Reaction for Carbon Monoxide Chemical Lasers.
- 8:50 - 9:10 Delmar N.S. Permann and Ian P. Hamilton (University of Ottawa)
Nonlinear Dynamics of Weakly Forced and Weakly Damped Oscillator Systems:
Complicated and Dissociative Dynamics for the Morse Oscillator and Self-similar and
Erratic Dynamics for the Simple Pendulum.

SESSION II: Saturday, October 26, 1991 - A.M.

Davis Centre 1302

Chair: Robert Le Roy

- 9:00 - 9:40 Tom Rizzo (University of Rochester)
Multiple Laser Probes of Intramolecular Dynamics.
- 9:40 - 10:00 Thomas L. Beck (University of Cincinnati)
Path Integral Quantum Generalization of Widom's Test Particle Method for Chemical
Potentials.
- 10:00 - 10:20 Yibing Fan and D.Jamie Donaldson (University of Toronto)
Laser-Induced Fluorescence Study of I_2 from $(CH_3I)_n$ Photodissociation.

- 39) Arno Mann (Université de Sherbrooke) and F. Linder, Universitat Kaiserslautern)
Mode-selective Vibrational Excitation in Low-energy Electron Scattering from Halomethanes
- 40) Chris Mathers, Alex Brown and Neil R. Isenor (University of Waterloo)
Fragmentation of Seed Molecules in Rare Gas Clusters
- 41) Steven Mitchell, Carl Brown, Mark Blitz and Peter Hackett (Steacie Institute for Molecular Science, NRC)
Non-adiabatic Effects in Association Reactions of Nickel Atoms with Alkenes
- 42) John Muentzer (University of Rochester)
An Intermolecular Potential Function Model for Small Van der Waals Complexes
- 43) Anthony Muscat, Abdelilah Rjeb and Denis Roy (Université Laval)
A Low Cost UHV Sample Holder That Achieves 10 K/s Cooling Rates Between 1000k and 100k
- 44) Guijuan Nan and Paul L. Houston (Cornell University)
Doppler Profile Study of Velocity Relaxation for $S(^1D)$ from 222nm Photodissociation of OCS
- 45) David W. Neyer, Scott H. Kable, Jean-Christophe Loisson, Evelyn M. Goldfield and Paul L. Houston (Cornell University) and Itamar Burak (University of Tel Aviv)
Product Distributions from the Visible Photodissociation of HCO
- 46) Bernadette I. Niefer, Henrik Kjaegaard and Bryan R. Henry (University of Guelph)
Measured and Calculated Overtone Intensities in the Overtone Spectra of Cyclopropylamine and Cyclohexane
- 47) Rick D. Lafleur and J. Mark Parnis (Trent University)
Chemical Quenching of Excited-State Ga Atoms (2S) by Methane in Argon Matrices: Vibrational Spectra of Methylgallium Hydride
- 48) Marco A. Pereira, John Deak and R.J. Dwayne Miller (University of Rochester)
Evidence for Collective Modes and the Energy Relaxation in Biological Systems
- 49) Gilles H. Peslherbe and William L. Hase (Wayne State University)
Difficulties of Following the Reaction Path for Association Reactions
- 50) David L. Phillips and Anne B. Myers (University of Rochester)
Vapor and Solution Phase Resonance Raman Spectra of Photodissociating Nitromethane: Solvation and Solvent Effects
- 51) Prasad Chintalapati and Peter F. Bernath (University of Waterloo), Corey Frum and R. Engleman Jr. (University of Arizona)
Fourier Transform Jet Emission Spectroscopy of CN and C_2 Molecules
- 52) Charles X.W. Qian, M. Vasseur, David M. Rayner and Peter Hackett (Steacie Institute for Molecular Science, NRC)
Photofragment Translational Spectroscopy of Cl Atom

- 53) Gomathi Ramachandran and Gregory S. Ezra (Cornell University)
Vibrational Deactivation in Kr/O_2^+ Collisions: The Role of Complex Formation
- 54) Jon-Marc Rodier, David Phillips and Anne B. Myers (University of Rochester)
Ultrafast Spectroscopic Studies of Trans-Hexatriene and Alkyl Iodides
- 55) G. Kim, L.M. Hitchcock, G.P. Reck and Erhard Rothe (Wayne State University)
Imaging of Total Densities, and of State Specific Densities, via LIF and Rayleigh Scattering of 193nm Light
- 56) Tom A. Seckel, Xin Luo and Tom R. Rizzo (University of Rochester)
Double Resonance Vibrational Overtone Spectroscopy of HN_3
- 57) Rebecca D.F. Settle and Tom Rizzo (University of Rochester)
 CO_2 Laser Assisted Vibrational Overtone Spectroscopy of Methanol
- 58) Vladimir Shalaev and Martin Moskovits (University of Toronto)
Optical Properties of Fractal Clusters
- 59) Benoit Simard, Andrew James and Peter Hackett (Steacie Institute for Molecular Science, NRC) and Walter Balfour (University of Victoria)
Optical Spectroscopy of Jet Cooled Yttrium Containing Compounds: Recent Progress on Yttrium Monohydride and Yttrium Monocarbide
- 60) Petra Swiderek and M. Michaud (Université de Sherbrooke), G. Hohlneicher (Universität zu Köln) and Leon Sanche (Université de Sherbrooke)
Electron Energy Loss Spectroscopy of Solid Phenanthrene: Search for the Low-lying Triplet States
- 61) Jan E. Szulejko and Terry B. McMahon (University of Waterloo)
A High Pressure Mass Spectrometric Determination of Proton Affinities of Compounds of Low Gas Phase Basicity Ranging from Nitrogen to Benzene (118 to 181 kcal mol⁻¹)
- 62) Daniel Tremblay (Université Laval), P.A. Thiry and J.J. Pireaux (FUNDP, Belgium)
Excitation Probability for Intramolecular Vibrations in a Uniform Dielectric Film Supported by a Metal Substrate. A Calculation in the Framework of the Dielectric Theory of Electron Energy Loss
- 63) John Tromp, Didier Lemoine and Gregory Corey (Université de Montréal)
Fourier Transform Wave Packet Propagation in Spherical Coordinates: In Search of the Holy Grail
- 64) D.P. Tsai and Martin Moskovits (University of Toronto)
Artifacts of STM Images
- 65) Peter J.M. van der Burgt and James W. McConkey (University of Windsor)
Time-of-flight Study of Electron-Impact Dissociation of SO_2
- 66) Kaley A. Walker, Hartmut G. Hedderich and Peter F. Bernath (University of Waterloo)
High Resolution Infrared Spectroscopy of BiH , BiD and BaH
- 67) WenGe Wang and Howard R. Mayne (University of New Hampshire)
A New Representation for Reactive Potential Energy Surfaces

- 68) Tzyy-Schiuan Yang and Anne B. Myers (University of Rochester)
Solvation Effects on the C^1B_2 and X^1A_1 States of SO_2 in Hexane Studied by Spontaneous Resonance Raman Scattering
- 69) Xiaobe Yang and Chifure Noda (University of New Hampshire)
Photoacoustic Detection of CO_2 and N_2O Overtone Transitions in the Near-IR Range
- 70) James Ying, Chris Mathers and K. Tong Leung (University of Waterloo)
K-dependent Electron Energy Loss Spectroscopy of SF_6 Molecules
- 71) Zhong Chen Zhang, Richard J. Wheatley, William J. Meath and A.R. Allnatt (University of Western Ontario)
Non-additive 3-body Interaction Energies for Closed Shell Atoms Using H_3 (Quartet Spin State) as a Model
- 72) Leegeng Zhao, William S. Neil and James J. Sloan (University of Waterloo)
Observation of HCN Chemiluminescence in Acrylonitrile Photodissociation at 193nm
- 73) Ling Zhu and William L. Hase (Wayne State University)
Study of Energy Transfer Pathways for $Li^+ + H_2O \rightarrow Li^+(H_2O)$ Association
- 74) Aaron W. Garrett, Daniel L. Severance and Timothy S. Zwier (Purdue University)
Immiscibility and Ion Chemistry in Molecular Clusters: $C_6H_6-(H_2O)_n$ and $C_6H_6-(CH_3OH)_n$