

## **Presentations by staff members at the network nodes**

### **Southampton**

J.M. Dyke

Studies of radicals with synchrotron radiation.

19th International Symposium on Molecular Beams, Rome, Italy, 3-8 June 2001.

J.M. Dyke

Simulation of photoelectron and electronic spectra of small molecules.

5th Iberian Joint Meeting on Atomic and Molecular Physics (IBER 2002), Lisbon, Portugal, 23-26 March 2002.

J.M. Dyke

Photoionisation of reactive intermediates.

University of Stockholm, Sweden, 12 November 2001.

J.M. Dyke

Photoionisation of reactive intermediates.

University of Bologna, Italy, 12 February 2002.

J.M. Dyke

Probing the Electronic Structure of Reactive Intermediates with Photoionization.

Mediterranean Conference on Computational Chemistry of Complex Systems, Palermo, Italy, plenary lecture, 4-7 October 2002.

J.M. Dyke

Spectroscopic Studies of the Atmospherically Relevant Reactions Cl/Cl<sub>2</sub> with DMS.

Molecular Spectroscopy Meeting, Rutherford and Appleton Laboratory, UK, June 2003

J.M. Dyke

Photoionization of Reactive Intermediates.

Iberian Conference on Atomic and Molecular Physics, invited talk, Lisbon, Portugal, 13 April 2004.

J.M. Dyke

Kinetics of the atmospherically important Cl<sub>2</sub> + DMS Reaction

International Conference on Gas-Kinetics, Bristol, UK, August 7-12<sup>th</sup>, 2004

J.M. Dyke

Photoionization study of atmospherically important Reactions

COSMAS meeting, Bristol, UK, August 12-14<sup>th</sup>, 2004.

J.M. Dyke

Studies of Radicals of importance in Atmospheric Chemistry and Combustion

Portuguese Conference on Atomic and Molecular Physics, April 3-7<sup>th</sup>, 2004.

J.M. Dyke

Use of XUV Radiation to study problems in Atmospheric Chemistry

NPL Conference on Generation and use of XUV Radiation, Teddington, UK, June 2<sup>nd</sup> 2004.

J.M. Dyke

Techniques and methods to study radicals and their reactions in flames

Hong Kong University, July 12-15<sup>th</sup> 2004.

## **Orsay**

Ph. Bréchignac

Various aspects of cluster evaporation.

The James Franck Symposium 2001, "From Clusters To Nanosystems", Jerusalem, Israel, February 2001.

Ph. Bréchignac, T. Pino, N. Boudin

Electronic spectroscopy of cold gas phase polycyclic aromatic hydrocarbons cations.

Symposium "Spectroscopy in the 21st Century", Hayama, Japan, March 2001.

Ph. Bréchignac

Spectroscopy and dynamics of PAHs cations in a molecular beam.

XIXth International Symposium on Molecular Beams, Rome, Italy, June 2001.

Ph. Bréchignac

About the signatures of evaporating clusters, and what can we learn from them ?

Gordon Research Conference on Molecular and Ionic Clusters, Ventura, CA, USA, January 2002.

D. Gauyacq

Photodynamics of small hydrocarbons of astrophysical interest.

Second International Meeting on Photodynamics, La Habana, Cuba, February 2002.

D. Gauyacq

Structure and relaxation dynamics of Rydberg Molecules studied by Multiphoton or VUV Spectroscopy.

17th International Conference on High Resolution Molecular Spectroscopy, Praha, Tjech Republic, September 2002.

Ph. Bréchignac

Evaporation of Clusters.

Institut für Experimentalphysik, Freie Universität, Berlin, Germany, 20 April 2001.

Ph. Bréchignac

Can PAH cations be responsible for diffuse interstellar absorption ?

Space Science Division, NASA-Ames Research Center, Moffett Field, USA, 15 January 2002.

Ph. Bréchnignac

Electronic spectroscopy of gas phase PAH cations in a molecular beam.

Department of Chemistry, University of Georgia, Athens, Georgia, USA, 11 March 2002.

D. Gauyacq

Photolyse VUV de petits hydrocarbures d'intérêt astrophysique.

Laboratoire PHLAM, Université de Lille, France, March 2002.

Van Oanh Nguyen Thi, P. Parneix, Ph. Bréchnignac

Poster entitled: Vibrational dynamics of the neutral naphthalene from a tight-binding approach.

XIX International Symposium on Molecular Beams, Rome, Italy, June 2001.

N. Boudin, T. Pino, F. Boulanger and Ph. Bréchnignac

Poster entitled: Visible spectroscopy of polycyclic aromatic hydrocarbons ionic derivatives: application to astrophysics.

26th International Symposium on Free Radicals, Assisi, Italy, September 2001.

S. Boyé, A. Campos, S. Douin, C. Fellows, N. Shafizadeh, Ph. Halvick, D. Gauyacq

Poster entitled: Formation of vibrationally hot ethynyl radical from the VUV photolysis of acetylene; application to astrochemistry.

26th International Symposium on Free Radicals, Assisi, Italy, September 2001.

Van Oanh Nguyen Thi, P. Parneix, Ph. Bréchnignac

Poster entitled: Estimation of the anharmonic quantum density of states in large systems.

Gordon Research Conference on Molecular and Ionic Clusters, Ventura, CA, USA, January 2002.

Ph. Bréchnignac

Electronic spectra and photophysics of cold gas phase PAH cations.

Symposium "Spectroscopy of astrophysically relevant molecules and grains"

Leipzig, Germany, October 2002.

Ph. Bréchnignac

How to use lasers and mass spectrometry to interrogate the dynamics of large polyatomic cations?

Sixth International Workshop on Laser Physics and its Applications, LAM6,

Tunis, Tunisia, December 2002.

Ph. Bréchnignac, Van Oanh Nguyen Thi, P. Parneix

Simulation of the infrared spectra of large carbonaceous molecules: influence of the Charge state and of Temperature.

Workshop on "Gas phase formation and destruction of carbon-based nanoparticles",

St Jacut de la Mer, January 2003.

Ph. Bréchnignac

Spectroscopy and Photostability of PAH cations.

6<sup>th</sup> meeting of the TMR Network “Reactive Intermediates”,  
Bremen, Germany, March 2003.

Ph. Bréchignac

Photostability of PAH cations: Measurement of fragmentation rates as a function of internal energy.

German-Chinese Symposium on Clusters and Nanoparticles,  
Nanjing, China, April 2003.

Nguyen Thi Van Oanh, P. Parneix, Ph. Bréchignac

Poster entitled: “Simulation des spectres d’absorption infrarouge des PAHs. Effets de l’ionisation et de la température”.

PAMO, Bourges, July 2002.

P. Parneix, G.S. Fanourgakis, Ph. Bréchignac

Poster entitled: “Probing the liquid-gas like phase transition in the mixed  $\text{Ar}_x\text{Ne}_{13-x}$  clusters”.

ISSPIC11, Strasbourg, September 2002.

P. Parneix, Ph. Bréchignac

Poster entitled: “Evaporation dynamics of mixed Lennard-Jones clusters: an enhanced access to the melting transition”.

International Symposium “Atomic Cluster Collisions”,  
Saint Petersburg, Russia, July 2003.

T. Pino, Ph. Bréchignac

Poster entitled: “On the participation of hydrocarbons to the visible part of the interstellar extinction curve”.

International Symposium on Astrophysics of Dust,  
Estes Park, Colorado, USA, May 2003.

T. Pino, S. Douin, N. Boudin, Ph. Bréchignac

Poster entitled: “Near infrared photodissociation spectra of the aniline+-argon<sub>1,2</sub> ionic complexes”.

SASP2004, La Thuile, Aosta, Italy, February 2004.

T. Pino, P. Parneix, S. Douin, Ph. Bréchignac

Poster entitled: “Solvation dynamics of large van der Waals aniline-argon<sub>N</sub> clusters: experiment and theory”.

SASP2004, La Thuile, Aosta, Italy, February 2004.

## Garching

Björn M. Reinhard, Brigitte S. Fox, Martin K. Beyer, Vladimir E. Bondybey

Poster entitled: Wet electrons and how to dry them.

Gordon Research Conference on: "Gaseous Ions: Structures, Energetics, and Reactions",  
Ventura, California, USA, February 25 - March 2, 2001.

Brigitte S. Fox, Uwe Achatz, Martin K. Beyer, Vladimir E. Bondybey  
Poster entitled: Nanodroplets as aqueous reaction media.  
Gordon Research Conference on : "Gaseous Ions: Structures, Energetics, and Reactions",  
Ventura, California, USA, February 25 - March 2, 2001.

B. S. Fox, U. Achatz, M. K. Beyer, V. E. Bondybey  
Poster entitled: Nanodroplets as aqueous reaction media.  
DGMS\_2001: Deutsche Gesellschaft für Massenspektrometrie, München, Germany, March 4-7,  
2001.

E.V. Savchenko, V.V. Rudenkov, A.M. Smith-Gicklhorn, M. Lorenz, M. Frankowski, V.E.  
Bondybey  
Thermally and photostimulated exoelectron emission from doped rare-gas matrices.  
Euroconference: Matrix 2001, The Chemistry and Physics of Matrix Isolated Species, Szklarska  
Poręba, Poland, 7-13 June 2001.

E. Savchenko, O. Grigorashchenko, A. Ogurtsov, V. Rudenkov, M. Frankowski, M. Lorenz, A.  
Smith, V.E. Bondybey  
Poster entitled: Photo- and thermally stimulated emission of electrons from rare gas solids.  
20th European Conference on Surface Science, Krakow, Poland, September 4-7, 2001.

Martin Beyer  
Effects of solvation and hydration in gas phase cluster studies.  
6th European Workshop on Fourier Transform Ion Cyclotron Resonance Mass Spectrometry,  
Rolduc Monastery, Kerkrade, The Netherlands, 16-19 October 2001.

Brigitte S. Fox, O. Petru Balaj, Iulia Balteanu, Martin K. Beyer, Vladimir E. Bondybey  
Poster entitled: Cluster reactions and entropy: Competing reaction pathways in hydrated  
transition metals and solvated electrons.  
Gordon Research Conference on: "Molecular and Ionic Clusters", Ventura, California, USA,  
January 6-11, 2002.

Martin K. Beyer, Brigitte S. Fox, Vladimir E. Bondybey  
Poster entitled: Cluster reactions and DFT calculations: salt-bridge transition states, silver  
coordination, and infrared absorption.  
Gordon Research Conference on: "Molecular and Ionic Clusters", Ventura, California, USA,  
January 6-11, 2002.

M. K. Beyer, B. S. Fox, O. P. Balaj, I. Balteanu, V. E. Bondybey  
Poster entitled: Reactive intermediates of transition metal ions in water clusters.  
XIII Symposium on Atomic and Surface Physics and Related Topics, Going/Kitzbühel, Austria,  
February 17-23, 2002.

Brigitte S. Fox, O. Petru Balaj, Iulia Balteanu, Martin K. Beyer, Vladimir E. Bondybey  
Poster entitled: Single-molecule precipitation of transition metal(I) chlorides in water clusters.

DGMS\_2002: Deutsche Gesellschaft für Massenspektrometrie, Deutsches Krebsforschungszentrum Heidelberg, Germany, 3-6 March 2002.

Martin K. Beyer

Salt-bridge transition states for charge separation in hydrated, doubly charged metal ions.  
Frühjahrstagung der Deutschen Physikalischen Gesellschaft, Osnabrück, Germany, 4-8 March 2002.

Martin K. Beyer, Brigitte S. Fox, Iulia Balteanu, O. Petru Balaj, Haichuan Liu, Vladimir E. Bondybey

Kinetik konkurrierender Intraclusterreaktionen am Beispiel hydratisierter Vanadiumionen  $V(H_2O)_n^+$ .

101. Hauptversammlung der Deutschen Bunsen-Gesellschaft für Physikalische Chemie e. V., Potsdam, Germany, 9-11 May 2002.

V.E. Bondybey.

Water Nanodroplets as a Reaction Medium: FT-ICR Studies of the Stability, Structure and Reactivity of Hydrated Ions and Ionic Water Clusters.

Seminar talk at the Universidad Autonoma, Madrid, Spain, November 17, 2000.

V.E. Bondybey.

Spectroscopic Studies of Clusters in Matrices.

Seminar talk at the J. Heyrovsky Institute of Physical Chemistry and Electrochemistry, Prague, Czech Republic, January 8, 2001.

V.E. Bondybey.

Water Nanodroplets as a Reaction Medium: FT-ICR Studies of the Stability, Structure and Reactivity of Hydrated Ions and Ionic Water Clusters.

Invited lecture at the March Meeting of the American Physical Society, Seattle, Washington, USA, March 12-16, 2001.

V.E. Bondybey.

Matrix Isolation Studies of Ions and Molecules of Astrophysical Interest.

Invited lecture at the Euroconference 2001 on "The Chemistry and Physics of Matrix-Isolated Species", Szklarska Poreba, Poland, July 7-13, 2001.

V.E. Bondybey.

Session Chair: "Metal Ion Coordination Chemistry"

50th ASMS Conference, Orlando, Florida, USA, June 2-6, 2002.

V.E. Bondybey.

Exploring Solution Reactions in the Gas Phase: FT-ICR Studies of Chemistry and Stability of Solvated Ions.

Network Meeting on "Reactive Intermediates", Southampton, United Kingdom, September 7-11, 2002.

V.E. Bondybey.  
Solvated Electrons, their Stability and Reactions.  
Seminar talk at the Institute of Fluid-Flow Machinery, Gdansk, Poland, July 8, 2003.

V.E. Bondybey.  
Charged Species and Charge Recombination in Rare Gas Solids.  
Invited Lecture at the Gordon Research Conference on the Physics and Chemistry of Matrix-Isolated Species, Lewiston, Maine, USA, July 20-25, 2003.

V.E. Bondybey, I. Balteanu, O.P. Balaj, B.S. Fox, M.K. Beyer, Z. Bastl  
Anionic Gold Clusters, and their Reactivity.  
Invited Lecture at the 226<sup>th</sup> ACS National Meeting,  
New York, USA, September 7-11, 2003.

V.E. Bondybey  
Free Electrons: The Simplest Free Radicals of them All.  
Invited lecture at the 27<sup>th</sup> International Symposium on Free Radicals  
Taipei, Taiwan, July 25 – 30, 2004.

V.E. Bondybey  
The Smallest Free Radicals of them All: an FTICR-MS Study of Free Electrons in Aqueous Clusters  
Invited lecture at the 228<sup>th</sup> ACS National Meeting,  
Philadelphia, PA, USA, August 22 – 26, 2004.

M. K. Beyer.  
Reactivity and Electronic Structure: CO-Adsorption by Transition Metal Cluster Cations and Anions.  
50th Annual Conference of the American Society for Mass Spectrometry, June 2-6, 2002,  
Orlando, U.S.A.

M. K. Beyer, E. V. Savchenko, V. E. Bondybey.  
Proton Diffusion and H<sub>3</sub><sup>+</sup> Formation in Rare Gas Solids.  
International Conference on Cryocrystals and Quantum Crystals 2002, October 27-31, 2002  
Freising, Germany

M. K. Beyer.  
Die Salzbrücke als Übergangszustand der Deprotonierung im Elektrosprayprozess.  
36. Diskussionstagung der Deutschen Gesellschaft für Massenspektrometrie, March 9-12, 2003,  
Münster, Germany

M. K. Beyer.  
Chemie in Nanotröpfchen und mechanische Aktivierung chemischer Bindungen.  
Universität Bielefeld, May 12, 2003, Bielefeld, Germany

M. K. Beyer

Mass spectrometric studies of size-dependent cluster reactivity.

Invited talk at the coordination workshop for the new priority program “Chemical Reactivity of size selected clusters and matter with reduced dimensions”, 12. - 14. June 2003, Berlin.

B. S. Fox, O. P. Balaj, I. Balteanu, M. K. Beyer, V. E. Bondybey.

Poster entitled: Single-molecule Precipitation of Transition Metal(I) Chlorides in Water Clusters.

DGMS 2002: Deutsche Gesellschaft für Massenspektrometrie, March 3-6, 2002, Deutsches Krebsforschungszentrum, Heidelberg, Germany.

M. K. Beyer.

Poster entitled: Salt-bridge Transition States of Deprotonation Reactions in the Electrospray Process.

EURESCO Conference on "Molecules of Biological Interest in the Gas Phase", July 21-26, 2002 Wildbad Kreuth, Germany.

I. Balteanu, O. P. Balaj, B. S. Fox, M. K. Beyer, V. E. Bondybey.

Poster entitled: Charge- and Size Dependent Reactivity of Transition Metal Clusters.

Gordon Research Conference “Gaseous Ions: Structures, Energetics, and Reactions”, March 2-7, 2003, Ventura, U.S.A.

O. P. Balaj, I. Balteanu, B. S. Fox, M. K. Beyer, V. E. Bondybey.

Poster entitled: Reactions of Wet Electrons with HCl, CO<sub>2</sub>, and Acetonitrile.

Gordon Research Conference “Gaseous Ions: Structures, Energetics, and Reactions”, March 2-7, 2003, Ventura, U.S.A.

M. K. Beyer, B. S. Fox, V. E. Bondybey.

Poster entitled: Coordination Chemistry of Silver Cations.

102. Hauptversammlung der Deutschen Bunsen-Gesellschaft für Physikalische Chemie e. V., May 29-31, 2003, Kiel, Germany.

M. K. Beyer

Mass spectrometric studies of size-dependent cluster reactivity.

Invited talk at the coordination workshop for the new priority program “Chemical Reactivity of size selected clusters and matter with reduced dimensions”, 12. - 14. June 2003, Berlin.

M. K. Beyer

Nanochemie und Mechanochemie: Von der wissenschaftlichen Entdeckung zur technologischen Innovation.

Invited talk in the series “Herausforderung Zukunft” at the “Vertretung des Freistaates Bayern in Berlin”, 13. November 2003, Berlin.

M. K. Beyer

Chemie in Wasserclustern. Mechanische Aktivierung chemischer Bindungen.

Seminar talk, TU Berlin, 6. January 2004, Berlin.

M. K. Beyer

Chemie in Wasserclustern. Mechanische Aktivierung chemischer Bindungen.  
Seminar talk, FU Berlin, 7. January 2004, Berlin.

M. K. Beyer

The effect of cluster size and charge in gas phase reactivity studies.  
Seminar talk, University of Warwick, 24. February 2004, Coventry.

M. K. Beyer

Größeneffekte in der chemischen Funktionalität von Übergangsmetallclustern.  
Seminar talk, TU Bergakademie Freiberg, 22. April 2004, Freiberg.

M. K. Beyer, O. P. Balaj, I. Balteanu, B. S. Fox-Beyer, V. E. Bondybey

Reaction mechanisms of hydrated electrons  $(\text{H}_2\text{O})_n^-$  in the gas phase.

103. Hauptversammlung der Deutschen Bunsen\_Gesellschaft für Physikalische Chemie e. V.,  
20. \_ 22. Mai 2004, Dresden.

O. P. Balaj, I. Balteanu, B. S. Fox-Beyer, M. K. Beyer, V. E. Bondybey

Poster entitled: Reaction mechanisms of hydrated electrons  $(\text{H}_2\text{O})_n^-$  in the gas phase.

DGMS 2004: Deutsche Gesellschaft für Massenspektrometrie, 7. - 10. März 2004,  
UFZ\_Umweltforschungszentrum Leipzig\_Halle.

I. Balteanu, O. P. Balaj, B. Fox, M. Beyer, V. Bondybey

Cluster size and charge dependence reactions of the highly exothermic azidoacetonitrile on  
anionic and cationic rhodium clusters.

Frühjahrstagung der Deutschen Physikalischen Gesellschaft, München, Germany, 22.-26. March  
2004.

O. P. Balaj, I. Balteanu, B. Fox-Beyer, M. Beyer, V. E. Bondybey

Addition of a Hydrogen Atom to Acetonitrile by Hydrated Electron Nanodroplets.

Frühjahrstagung der Deutschen Physikalischen Gesellschaft, München, Germany, 22.-26. March  
2004.

A.M. Smith-Gicklhorn, M. Frankowski, V.E. Bondybey

Infrared spectroscopy of the  $\text{XeC}_2$  molecule in solid Xe, Ar and Kr.

Frühjahrstagung der Deutschen Physikalischen Gesellschaft, München, Germany, 22-26. March  
2004.

O. P. Balaj, I. Balteanu, B. S. Fox-Beyer, M. K. Beyer, V. E. Bondybey

Poster entitled: The Development of a Temperature Controlled ICR-Infinity Cell.

EFTMS 2004: Seventh European Workshop on FTMS, 28. März - 1. April 2004, Konstanz.

O. P. Balaj, I. Balteanu, B. S. Fox-Beyer, M. K. Beyer, V. E. Bondybey

Poster entitled: Reaction mechanisms of hydrated electrons  $(\text{H}_2\text{O})_n^-$  in the gas phase.

EFTMS 2004: Seventh European Workshop on FTMS, 28. März - 1. April 2004, Konstanz.

I. Balteanu, O. P. Balaj, B. S. Fox-Beyer, M. K. Beyer, V. E. Bondybey  
Use of Isotopically Enriched Material in Gas Phase Cluster Studies.  
EFTMS 2004: Seventh European Workshop on FTMS, 28. März - 1. April 2004, Konstanz.

A.M. Smith-Gicklhorn, M. Frankowski, V.E. Bondybey  
Poster and talk entitled: Spectroscopy of the  $\text{XeC}_2$  molecule in xenon, argon and krypton matrices.  
Gordon Research Conference on Physics & Chemistry of Matrix Isolated Species, July 20-25, 2003 Lewiston, ME, USA.

A.M. Smith-Gicklhorn, M. Frankowski, V.E. Bondybey  
Infrared spectroscopy of the  $\text{XeC}_2$  molecule in solid Xe, Ar and Kr.  
Frühjahrstagung der Deutschen Physikalischen Gesellschaft, München, Germany, 22-26. March 2004.

M. Frankowski, A.M. Smith-Gicklhorn, Z.Sun, A.N. Ponomaryov, V.E. Bondybey  
Poster entitled: Protonated and Fragment Ions of Acetonitrile Mass-Selective Matrix-Isolation Study  
LTC5: Fifth International Conference on Low Temperature Chemistry, 7-10 September 2004, Berlin-Dahlem, Germany

A.M. Smith-Gicklhorn, Marcin Frankowski, A.N. Ponomaryow, Vladimir E. Bondybey  
Poster entitled: Predictions of Novel Xe Compounds with BN  
LTC5: Fifth International Conference on Low Temperature Chemistry, 7-10 September 2004, Berlin-Dahlem, Germany

E.V. Savchenko, O.N. Grigorashchenko, G.B. Gumenchuk, I.V. Khyznyi, M. Frankowski, M.K. Beyer, A.M. Smith-Gicklhorn, V.E. Bondybey  
Poster entitled: Elementary Stages of Relaxation Processes in Ion-Containing Cryomatrices as Probed by Activation Spectroscopy  
LTC5: Fifth International Conference on Low Temperature Chemistry, 7-10 September 2004, Berlin-Dahlem, Germany

I.V. Khyznyi, E.V. Savchenko, A.G. Belov, E.M. Yurtaeva, M. Frankowski, M.K. Beyer, A.M. Smith-Gicklhorn, V.E. Bondybey  
Poster entitled: Electron-Trap Related Low Temperature Relaxation in Preirradiated Ne Matrix  
LTC5: Fifth International Conference on Low Temperature Chemistry, 7-10 September 2004, Berlin-Dahlem, Germany

## **Amsterdam**

C.A. de Lange  
Laser photoelectron spectroscopy: photofragmentation and atmospherically relevant species.  
Department of Chemistry, University of British Columbia, Vancouver, Canada, 8 December 2000.

C.A. de Lange

Rotationally resolved laser photoelectron spectroscopy of hot diatomic fragments formed in the photofragmentation of  $N_2$ , OCS and  $CS_2$ .

221st National Meeting of the American Chemical Society, San Diego, CA, USA, 1-5 April 2001.

C.A. de Lange

Rotationally resolved laser photoelectron spectroscopy of hot diatomic fragments formed in the photofragmentation of  $N_2$ , OCS and  $CS_2$ .

Mini-Symposium on Photoionization Dynamics, Institute of Molecular Science, Okazaki, Japan, 14 May 2001.

C.A. de Lange

Laser photoelectron spectroscopy: spectroscopy and dynamics of excited states in small and medium-sized molecules.

17th Symposium on Chemical Kinetics and Dynamics, Kyushu University, Fukuoka, Japan, 22-25 May 2001.

C.A. de Lange

Laser photoelectron spectroscopy: spectroscopy and photoionization dynamics of fragments produced in photodissociation processes.

Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan, 5 July 2001.

C.A. de Lange

Laser photoelectron spectroscopy: spectroscopy and photoionization dynamics of fragments produced in photodissociation processes.

Department of Chemistry, Tokyo University, Tokyo, Japan, 10 July 2001.

C.A. de Lange

Rotationally resolved laser photoelectron spectroscopy of hot diatomic fragments formed in the photofragmentation of  $N_2$ , OCS and  $CS_2$ .

Nano-Molecule Photonics Facility, National Communication Research Laboratory, Shidami Science Park, 2268-1 Anagahora, Nagoya 463-0003, Japan, 18 July 2001.

C.A. de Lange

Laser photoelectron spectroscopy of stable and unstable photofragments.

Institute of Molecular Science, Okazaki, Japan, 31 July 2001.

C.A. de Lange

Rotationally resolved laser photoelectron spectroscopy of hot diatomic fragments produced in the photodissociation of  $N_2O$ , OCS and  $CS_2$ .

5th Iberian Joint Meeting on Atomic and Molecular Physics (IBER 2002), Lisbon, Portugal, 23-26 March 2002.

C.A. de Lange

Laser photoelectron spectroscopy: mixed traits of electronic states.

Departamento de Física / Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa,  
Lisboa, Portugal, 27 March 2002.

C.A. de Lange

Rotationally resolved laser photoelectron spectroscopy of hot diatomic fragments produced in the photodissociation of N<sub>2</sub>O, OCS and CS<sub>2</sub>.

The Third Informal Conference on Reaction Kinetics and Atmospheric Chemistry, LO-Skolen Conference Center, Helsingør, Danmark, 7-9 June 2002.

M. Smits, M. Schmitt, C.A. de Lange, D. Rayner, A. Stolow

Poster entitled: Strong Field Ionization of Niobium Clusters: Multielectron Dynamics.

Gordon Research Conference on Multiphoton Processes, Tilton, NH, USA, 30 June-5 July 2002.

C.A. de Lange

Laser photoelectron spectroscopy: the surprising world of excited electronic states.

5<sup>th</sup> Network Meeting on "Reactive Intermediates", Southampton, UK, 7-11 September 2002.

C.A. de Lange

Laser photoelectron spectroscopy: the confusing world of superexcited states.

Institute for Molecular Science, Okazaki, Japan, 29 October 2002.

C.A. de Lange

Laser photoelectron spectroscopy: the confusing world of superexcited states.

Tokyo University, Tokyo, Japan, 30 October 2002.

E. Witkowicz, J. Mes, H. Linnartz, S. Stolte, C.A. de Lange, W. Ubachs

Poster entitled: Cavity Ringdown Spectroscopy of Molecular Ions.

27<sup>th</sup> Fall Meeting of the NNV Section Atomic, Molecular and Optical Physics (AMO), Lunteren, Netherlands, 14-15 November 2002.

J. Philip, Th. Pielage, J.P. Sprengers, E. Reinhold, C.A. de Lange, W. Ubachs

Poster entitled: Highly accurate transition frequencies in the H<sub>2</sub> Lyman and Werner bands. 27<sup>th</sup>

Fall Meeting of the NNV Section Atomic, Molecular and Optical Physics (AMO), Lunteren, Netherlands, 14-15 November 2002.

E. Witkowicz, J. Mes, H. Linnartz, S. Stolte, C.A. de Lange, W. Ubachs

Poster entitled: Cavity Ringdown Spectroscopy of Molecular Ions.

CW Studygroup Spectroscopy and Theory,

Lunteren, Netherlands, 27-28 January 2003.

C.A. de Lange

The prediction of solute orientational order in uniaxial liquid crystals from molecular shape.

9<sup>th</sup> Annual Symposium of the National Magnetic Resonance Society (NMRS) of India,

Bangalore, India, 3-6 February 2003.

C.A. de Lange

Charged-particle imaging studies with nanosecond and femtosecond lasers:  
the CO molecule and the NO dimer.  
Fysisch Chemisch Colloquium, Vrije Universiteit, Amsterdam, 24 February 2003.

C.A. de Lange  
Charged-particle imaging studies with nanosecond and femtosecond lasers: the CO molecule and  
the NO dimer.  
ETH, Zürich, Zwitserland, 18 March 2003.

C.A. de Lange  
Charged-particle imaging studies with femtosecond lasers: the NO dimer.  
6<sup>th</sup> Network Meeting on "Reactive Intermediates", Bremen, Germany, 26-30 March 2003.

E. Witkowicz, J. Mes, H. Linnartz, C.A. de Lange, W. Ubachs, A. Sfounis, M. Massaouti, M.  
Velegarakis  
Poster entitled: Reactive species in a planar plasma expansion studied by CRD spectroscopy and  
TOF mass spectrometry.  
6th Network Meeting on "Reactive Intermediates", Bremen, Germany, 26-30 March 2003.

J. Philip, J.P. Sprengers, C.A. de Lange, W. Ubachs  
Poster entitled: Narrowband XUV laser source for the study of predissociation in N<sub>2</sub>. 6<sup>th</sup> Network  
Meeting on "Reactive Intermediates", Bremen, Germany, 26-30 March 2003.

C.A. de Lange  
The prediction of solute orientational order in uniaxial liquid crystals from molecular shape.  
AMPERE XI NMR SCHOOL, Zakopane, Poland, 1-6 June 2003.

M. Smits, C.A. de Lange, D.M. Rayner, A. Stolow  
Poster entitled: Strong field ionisation of small niobium clusters.  
Femtochemistry VI, Paris, France, 6-10 July 2003.

C.A. de Lange  
Charged-particle imaging of molecules of atmospheric interest.  
Department of Chemistry, University of Southampton, UK, 24 October 2003.

C.A. de Lange  
Ultrafast dissociation processes in the NO dimer studied with time-resolved  
photoelectron imaging (invited lecture).  
Gordon Research Conference on Multiphoton Processes, Tilton, NH, USA, 12-18 June 2004.

Wim Ubachs  
H<sub>2</sub>, a century after Lyman (invited lecture)  
59th International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA, 25-29 June  
2004.

Wim Ubachs

Deep-UV cavity Ring Down spectroscopy  
59th International Symposium on Molecular Spectroscopy, Columbus, Ohio, USA, 25-29 June 2004.

Wim Ubachs

High resolution molecular physics studies using a laser-based XUV source at  $10^7$  resolving power (invited lecture)

XIV International Conference on Vacuum Ultraviolet Radiation Physics, Cairns, Australia, 19-23 July 2004.

Wim Ubachs

Molecular hydrogen and a possible variation of the proton mass on a cosmological time scale.  
MOLEC XV International Conference on Dynamics of Molecular systems, Nunspeet, The Netherlands, 5-10 September 2004.

## **Porton Down**

P. Watts

BW Agent Detection; from the Laboratory to the Field,  
Second Mass Spectrometry Conference applied to Chemical and Biological Warfare Agents,  
University of Warwick, UK, 14-17 April 2002.

A.J. Bell

Ion Mobility Spectrometry  
Leicester University, UK, 17 May 2004.

## **Lisbon**

A.A. Dias, C.C. Vaz de Carvalho, J.P. Santos, M.L. Costa, P. Rodrigues, M.T. Barros, M.H. Cabral, A.M.C. Moutinho

Thermal decomposition study of azido esters by UVPES

II Congresso Ibérico de Espectroscopia, XVIII Reunión Nacional de Espectroscopía, 16-21 September 2002, Coimbra, Portugal.

M.L. Costa, A.A. Dias, M. Algarra, C.C. Vaz de Carvalho, M.T. Barros, P. Rodrigues, M.N.D.S. Cordeiro, J.P. Santos, J.M. Dyke, A. Morris, J.S. Ogden, F. Parente, M.H. Cabral, A.M.C. Moutinho

Estudo de moléculas de elevada energia por espectroscopia de fotoelectrões de ultravioleta e espectroscopia de infravermelho de matriz arrefecida

13ª Conferência Nacional de Física - Física 2002, September 2002, Évora, Portugal.

M. Algarra, A.A. Dias, M.L. Costa, P. Rodrigues, M.T. Barros, M.N.D.S. Cordeiro, V.H.C. Lopes, G. Levita, J.M. Dyke, A. Morris, J.S. Ogden

Experimental and theoretical study of the thermal decomposition of azidoacetonitrile

XXVI European Congress on Molecular Spectroscopy - EUCMOS XXVI, September 2002, Lille, France.

M. Algarra, A.A. Dias, M.L. Costa, P. Rodrigues, M.T. Barros, M.N.D.S. Cordeiro, J.M Dyke, A. Morris, J. S. Ogden  
Thermal decomposition of azides studied by ultraviolet photoelectron spectroscopy and infrared matrix isolation spectroscopy  
5<sup>th</sup> Iberian Joint Meeting on Atomic and Molecular Physics - IBER 2002, 23-26 March 2002, Lisboa, Portugal.

A.A. Dias, M.L. Costa, M.T. Barros, M.H. Cabral, A.M.C. Moutinho, N. Hooper, L.J. Beeching, J.M Dyke, A. Morris, J. S. Ogden  
Thermal Decomposition of 2-Azidoethanol by Ultraviolet Photoelectron Spectroscopy and Matrix Isolation Spectroscopy  
5<sup>th</sup> Iberian Joint Meeting on Atomic and Molecular Physics - IBER 2002, 23-26 March 2002, Lisboa, Portugal.

A.A. Dias, V. Vassilenko, R. Carrapa, M. . Barros, O.M.N.D. Teodoro, M.L. Costa, M.H. Vasconcelos Cabral, A.M.C. Moutinho  
Secondary Ion Emission of Azidoacetic Acid Ni Covered Surfaces  
5<sup>th</sup> Iberian Joint Meeting on Atomic and Molecular Physics - IBER 2002, 23-26 March 2002, Lisboa, Portugal.

A.A. Dias, V. Vassilenko, R. Carrapa, M.T. Barros  
Secondary ion emission of azidoacetic acid Ni covered surfaces  
5th Iberian Joint Meeting on Atomic and Molecular Physics (IBER 2002), 23-26 March, Lisboa, Portugal.

A.A. Dias, V. Vassilenko, M. Duarte Naia, M.T. Barros, O.M.N.D. Teodoro, M.L. Costa, M.H. Vasconcelos Cabral, A.M.C. Moutinho  
Ion stimulated emission from azidoacetic acid Ni covered surfaces  
7th Int. Conf. on Nanometer-scale Science and Technology (NANO-7) and 21st European Conf. on Surface Science (ECOSS-21), 24-28 June 2002, Malmo (Sweden) TU-P-075

J.M. Dyke, M.L. Costa, L. Zuin, A.A. Dias, F. Innocenti, A. Paiva, L.J. Beeching, A. Morris, S. Stranges, J.B. West, N. Zema  
Estudo de átomos e de radicais por espectroscopia de foto-electrões usando o sincrotrão Elettra  
Oral presentation, Workshop Physics and Technology –Future Challenges, Convento da Arrábida, April 14-16, 2003.

A.A. Dias, C.V. Carvalho, M.L. Costa, J.P. Santos, M.T. Barros, P. Rodrigues, G. Levita, J.M. Dyke, A. Morris, J. S. Ogden.  
Thermal Decomposition of Azido Esthers by Ultraviolet Photoelectron Spectroscopy and Matrix Isolation Spectroscopy  
Oral presentation, Workshop Physics and Technology –Future Challenges, Convento da Arrábida, April 14-16, 2003.

A. A. Dias, C. V. Carvalho, M. L. Costa, J. P. Santos, M. T. Barros, P. Rodrigues, G. Levita, J. M. Dyke, A. Morris, J. S. Ogden  
Thermal Decomposition of Azido Esters by Ultraviolet Photoelectron Spectroscopy and Matrix Isolation Spectroscopy  
IBER 2003, Iberian Conference on Atomic and Molecular Physics, 7-11 July 2003, Madrid (oral presentation).

J. P. Santos, M. L. Costa, F. Parente  
Theoretical Study of the Molecular Properties of Methyl Azidoformate and Ethyl Azidoformate  
IBER 2003, Iberian Conference on Atomic and Molecular Physics, 7-11 July 2003, Madrid.

A.S. Paiva (plenary session)  
Studying Fragmentation Mechanisms in Molecules with Lasers  
IBER 2003, Iberian Conference on Atomic and Molecular Physics, July 2003, Madrid.

M. L. Costa  
RTN Reactive Intermediates Mid-Term Review Meeting (plenary session) Studies of Azides- An Overview  
Orsay, França, Setembro 2003

Filipa Martins, M. Tereza Fernandez, G. John Langley, Paula Rodrigues, M. Teresa Barros, M. Lourdes Costa, Martin K. Beyer, M. Filomena Duarte  
A Mass Spectrometric Study of Azidonitriles  
16ª Conferência Internacional de Espectrometria de Massa, poster ThL-023, Edimburgo (UK), Agosto/Setembro de 2003

Jorge Lameiras, Filipa Martins, M. Tereza Fernandez, Paula Rodrigues, M. Teresa Barros, M. Lourdes Costa, M. Filomena Duarte  
A Mass Spectrometric Study of Aromatic Azides,  
16ª Conferência Internacional de Espectrometria de Massa, poster ThL-024, Edimburgo (UK), Agosto/Setembro de 2003

Vítor S. Pinto, M. Filomena Duarte, Paula Rodrigues, M. Teresa Barros, M. Lourdes Costa, M. Tereza Fernandez  
An Electrospray Study of metal complexation by azidoacetic acid  
16ª Conferência Internacional de Espectrometria de Massa, poster ThL-009, Edimburgo (UK), Agosto/Setembro de 2003.

V. Vassilenko, R. Martins, O.M.N.D. Teodoro, P. Rodrigues, M.T. Barros, M.L. Costa, M.H. Vasconcelos Cabral, A.M.C. Moutinho  
Positive and negative ion emission from Ni/azide covered surfaces  
1st Int. Meeting on Applied Physics, APHYS 2003, p741, Oct, Badajoz, Spain.

V. Vassilenko, O.M.N.D. Teodoro, M. Duarte Naia, P. Rodrigues, M.T. Barros, M.L. Costa, M.H. Vasconcelos Cabral, A.M.C. Moutinho

Adsorption of some aliphatic azides on metal surfaces: a multitechnique approach study  
22nd European Conf. on Surface Science (ECOSS-22), Sept 2003, Prague (Czech Republic).

A.A. Dias, M.L. Costa, M. Algarra, J.P. Santos, M.T. Barros, P. Rodrigues, G. Levita, J.M. Dyke, A. Morris, J. S. Ogden

Estudo da decomposição térmica da azidoacetamida por espectroscopia de fotoelectrões de ultravioleta e espectroscopia de infravermelho numa matriz de azoto

Apresentação oral, 1º Encontro Nacional de Física Atómica e Molecular, 13-14 April 2004, Lisboa, Portugal.

A.C.S. Paiva, A.A. Dias, M.L. Costa, L. Zuin, F. Innocenti, S. Stranges A. Morris, J.B. West, J.M. Dyke

Photoionization of the S and SH in the gas-phase using synchrotron radiation

Oral presentation, 1º Encontro Nacional de Física Atómica e Molecular, 13-14 April 2004, Lisboa, Portugal.

A.A. Dias, M.L. Costa, M. Algarra, J.P. Santos, M.T. Barros, P. Rodrigues, G. Levita, J.M. Dyke, A. Morris, J.S. Ogden

Estudo da Decomposição Térmica da Azidoacetamida por Espectroscopia de Fotoelectrões de Ultravioleta e Espectroscopia de Infravermelho numa Matriz de Azoto, FAMA 2004 –

1º Encontro Nacional de Física Atómica e Molecular, 13-14 April 2004, Lisboa, Portugal.

J.P. Santos, M.L. Costa, F. Parente, G. Levita, J. M. Dyke,

A Theoretical Study of the Thermal Decomposition of Dimethylazidoacetamide

The Eighth European Conference on Atomic and Molecular Physics, ECAMP 8, 6-10 July, 2004, Rennes, France.

A. A. Dias, M. L. Costa, M. Algarra, J. P. Santos, M. T. Barros, P. Rodrigues, G. Levita, J. M. Dyke, A. Morris, J. S. Ogden,

Thermal Decomposition of 2-Azidoacetamide by Ultraviolet Photoelectron Spectroscopy and Matrix Isolation Infrared Spectroscopy: Identification of the Imine Intermediate

$\text{H} \square \text{NCOCH}=\text{NH}$

The Eighth European Conference on Atomic and Molecular Physics, ECAMP 8, Rennes, 6-10 July, 2004, Rennes, France.

A. C. S. Paiva, A. A. Dias, M. L. Costa, L. Zuin, F. Innocenti, A. Morris, S. Stranges, and J. M. Dyke.

Photoionization studies of the atmospherically important species N and OH at the Elettra synchrotron radiation source

The Eighth European Conference on Atomic and Molecular Physics, ECAMP 8, 6-10 July, 2004, Rennes, France.

Vítor S. Pinto, M. Filomena Duarte, Paula Rodrigues, M. Teresa Barros, M. Lourdes Costa, G. John Langley, M. Tereza Fernandez

Interações de metais com ácido azidoacético: um estudo por espectrometria de massa electrospray

XIX Encontro Nacional da Sociedade Portuguesa de Química, poster QA#18, 15-17 April, 2004, Coimbra, Portugal.

V. Vassilenko, O.M.N.D. Teodoro, P. Rodrigues, M.T. Barros, M.L. Costa, M.H. V. Cabral, A.M.C. Moutinho, M. K. Beyer, I. Balteanu, V. E. Bondybey

Comparison of azidoacetonitrile reactivity on Rh clusters and surfaces

12th International Conference on Solid Surfaces (ICSS-12), June 28-July 2, 2004, Venice, Italy.