



GORDON RESEARCH CONFERENCES *frontiers of science*

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2001 GORDON RESEARCH CONFERENCE

on Photoions, Photoionization & Photodetachment

FINAL PROGRESS REPORT

DOE

DE-FG02-01ER15185

The Gordon Research Conference (GRC) on Photoions, Photoionization & Photodetachment was held at Williams College, Williamstown, Massachusetts, July 8-13, 2001. The conference was well attended with 72 participants (list enclosed). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both US and foreign scientists, senior researchers, young investigators, and students.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field (program enclosed).

I want to personally thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Mark Johnson
Conference Chair

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Photoions, Photoionization and Photodetachment

July 8-13, 2001
Williams College
Williamstown, MA

Mark A. Johnson, Chair
John Eland, Vice-Chair

Sunday Evening

Vibrational Structure

Discussion Leader: John Hepburn

- **W. Carl Lineberger**
"Photodetachment of size-selected cluster anions: Spectroscopy along the reaction co-ordinate"
- **Michael Duncan**
"Infrared ionization spectroscopy of metal carbide and oxide clusters using a free-electron laser"

Monday Morning

Time resolved studies: Nuclear Wavepackets

Discussion Leader: Andrei Sanov

- **Vincent McKoy**
"Femtosecond Pump-Probe Photoelectron Spectra of Wavepackets in Small Molecules"
- **Carl Hayden**
"Femtosecond time-resolved photoelectron/photoion coincidence imaging"
- **Stephen Leone**
"Femtosecond time-resolved soft X-ray photoelectron spectroscopy"
- **Toshinori Suzuki**
"Pyrazine: A classic system revisited by femtosecond photoelectron imaging"

Monday Evening

Valence Photoionization

Discussion Leader: Joe Knee

- **Tomas Baer**
"PEPICO experiments at high and low resolution"
- **Koichiro Mitsuke**
"VUV Photofragments probed by fluorescence and electron spectroscopies"

Tuesday Morning

Clusters and networks

Discussion Leader: Naohiko Mikami

- **Xuebin Wang**
"Probing free and solvated multiply charged anions using Photodetachment photoelectron spectroscopy"
- **Asuka Fujii**
"Infrared spectroscopy of cations in supersonic jets: From bare molecules to hydrogen-bonded clusters"
- **Ken Jordan**
"The role of polarization and dispersion in the detachment of electrons from (H₂O)_n- clusters"
- **Steve Pratt**
"Vibrational Autoionization in Polyatomic Molecules"

Tuesday Evening

Resonance structures and decay mechanisms

Discussion Leader: William A. Chupka

- **Erwin Poliakoff**
"Polyatomic ionization continua: a channel-based view"

- **Robin Santra**
"Electronic decay of valence holes in clusters"

Wednesday Morning

Ultrafast photoionization

Discussion Leader: **Peter Weber**

- **Benolt Soep**
"Ultrafast non adiabatic dynamics in ethylenic compounds probed by photoionisation and photoelectron spectroscopy"
- **Gerd Gantefoer**
"Time-resolved photoelectron spectroscopy of mass-selected Cluster anions"
- **Albert Stolow**
"The use of electronic continua in time-resolved photoelectron spectroscopy"

Wednesday Evening

Threshold photoionization

Discussion Leader: **Michael G. White**

- **Fredric Merkt**
"Spectroscopy of molecular ions using high Rydberg states"
- **Tim Softley**
"Dynamics, ionization and control of Rydberg states in inhomogeneous fields"

Thursday Morning

Molecule fixed properties

Discussion Leader: **John Eland**

- **Cheuk Ng**
"Advances in Photoionization, Photoelectron, and Photodissociation Studies Using Third Generation Synchrotron Radiation"
- **Robert Continetti**
"Fast-beam coincidence imaging studies of negative ion photodetachment"
- **Akira Yagishita**
"Complete experiments of photoionization by fixed-molecule Photoelectron angular distributions"

Thursday Evening

Collisional phenomena

Discussion Leader: **Arthur G. Suits**

- **David Chandler**
"Using Resonance Enhanced Photoionization to Measure Differential Cross Sections"
- **Jean-Pierre Schermann**
"Getting structural information from diffuse orbitals"

Sponsors:

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PHOTOIONS, PHOTOIONIZATION & PHOTODETACH.

WILLIAMS COLLEGE
(08-Jul-01) - (13-Jul-01)

This was the final registration list for the 2001 Conference on
PHOTOIONS, PHOTOIONIZATION & PHOTODETACH..

Name	Organization	Participation	Status
TOMAS BAER	UNIVERSITY OF NORTH CAROLINA	Speaker	Registered
SWARNA BASU	WESLEYAN UNIVERSITY	Poster Presenter	Registered
JOHN D BOZEK	BERKELEY LAB.	Attendee	Registered
ARTHUR E BRAGG	UNIVERSITY OF CALIFORNIA, BERKELEY	Poster Presenter	Registered
DAVID W CHANDLER	SANDIA NATIONAL LABORATORIES	Speaker	Registered
WILLIAM A. CHUPKA	YALE UNIVERSITY	Speaker	Registered
ROBERT E CONTINETTI	UNIV. OF CALIFORNIA, SAN DIEGO	Speaker	Registered
BOGDAN R COSOFRET	CORNELL UNIVERSITY	Poster Presenter	Registered
EDWARD E. DOOMES	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
MICHAEL A DUNCAN	UNIVERSITY OF GEORGIA	Speaker	Registered
JOHN H D ELAND	OXFORD UNIVERSITY	Vice Chair	Registered
ASUKA FUJII	TOHOKU UNIVERSITY	Speaker	Registered
GERD F GANTEFOER	UNIVERSITAET KONSTANZ	Speaker	Registered
HARRY GOMEZ	NEUMARK GROUP	Poster Presenter	Accepted
TAKAKI HATSUI	INSTITUTE FOR MOLECULAR SCIENCE	Poster Presenter	Registered
CARL C HAYDEN	SANDIA NATIONAL LABORATORIES	Speaker	Registered
JOHN W HEPBURN	UNIVERSITY OF WATERLOO	Discussion Leader	Registered
DAVID HOLLAND		Poster Presenter	Registered
MARK JOHNSON	YALE UNIVERSITY	Chair	Registered
KENNETH D JORDAN	UNIVERSITY OF PITTSBURGH	Speaker	Registered
JUDE A KELLEY	YALE UNIVERSITY, DEPARTMENT OF CHEMISTRY	Poster Presenter	Registered
CORNELIUS E KLOTS		Attendee	Registered
JOSEPH KNEE	WESLEYAN UNIVERSITY	Attendee	Registered
CHRISTOPHER M LAPERLE	UNIVERSITY OF CALIFORNIA, SAN DIEGO	Poster Presenter	Registered
ALAIN LAPIERRE	AARHUS CENTER FOR ATOMIC PHYSICS (ACAP)	Attendee	Registered
ANTHONY M LEE	NATIONAL RESEARCH COUNCIL (CANADA) / QUEEN'S UNIV.	Attendee	Registered
STEPHEN LEONE	NIST/ UNIVERSITY OF COLORADO	Speaker	Registered
PING LIN	TEXAS A&M UNIVERSITY	Poster Presenter	Registered
CARL LINEBERGER	UNIVERSITY OF COLORADO, BOULDER	Speaker	Registered
KRISHNAMURTHY MANCHIKANTI	TATA INSTITUTE OF FUNDAMENTAL RESEARCH	Poster Presenter	Registered
VINCENT MCKOY	CALIFORNIA INSTITUTE OF TECHNOLOGY	Speaker	Registered
FREDERIC MERKT	ETH-ZUERICH	Speaker	Registered
RICARDO B METZ	UNIVERSITY OF MASSACHUSETTS - AMHERST	Poster Presenter	Registered
NAOHIKO MIKAMI	TOHOKU UNIVERSITY	Discussion Leader	Registered
SCOTT MILLER	AIR FORCE RESEARCH LABORATORY	Attendee	Registered
FUMINORI MISAIZU	TOHOKU UNIVERSITY	Poster Presenter	Registered
KOICHIRO MITSUKE	INSTITUTE FOR MOLECULAR SCIENCE	Speaker	Registered
FELICIAN MUNTEAN	JILA, UNIVERSITY OF COLORADO	Poster Presenter	Registered
CHEUK NG	IOWA STATE UNIVERSITY	Speaker	Registered
NICHOLAS L PIVONKA	UNIVERSITY OF CALIFORNIA, BERKELEY	Poster Presenter	Registered
ERWIN D POLIAKOFF	LOUISIANA STATE UNIVERSITY	Speaker	Registered
AXEL PRAMANN	KEIO UNIVERSITY, DEPARTMENT OF CHEMISTRY	Poster Presenter	Registered
STEPHEN T PRATT	ARGONNE NATIONAL LABORATORY	Speaker	Registered
SIMON R PROCTER	UNIVERSITY OF OXFORD	Poster Presenter	Registered
XIMEI X QIAN	LAWRENCE BERKELEY NATIONAL LAB	Poster Presenter	Registered

ELIZABETH RACHLEW	SCFAB	Poster Presenter	Registered
GERALD J RATHBONE	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
EMMA E RENNIE	MAX-PLANCK-INSTITUT FÜR PLASMAPHYSIK	Poster Presenter	Registered
WILLIAM H ROBERTSON	YALE UNIVERSITY	Poster Presenter	Registered
ANDREI SANOV	UNIVERSITY OF ARIZONA	Discussion Leader	Registered
ROBIN SANTRA	UNIVERSITY OF HEIDELBERG	Speaker	Registered
JEAN-PIERRE SCHERMANN	UNIVERSITE PARIS NORD	Speaker	Registered
THOMAS SCHULTZ	NATIONAL RESEARCH COUNCIL CANADA	Poster Presenter	Registered
JAMES P SHAFFER	THE UNIVERSITY OF OKLAHOMA	Poster Presenter	Registered
BENOIT A SOEP	CNRS	Speaker	Registered
TIMOTHY P SOFTLEY	UNIVERSITY OF OXFORD	Speaker	Registered
MARCEL SOMMAVILLA	ETH ZÜRICH	Attendee	Registered
ALBERT STOLOW	NATIONAL RESEARCH COUNCIL OF CANADA	Speaker	Registered
ARTHUR G SUITS	UNIVERSITY AT STONY BROOK	Poster Presenter	Registered
TOSHINORI SUZUKI	INSTITUTE FOR MOLECULAR SCIENCE	Speaker	Registered
RICHARD P TUCKETT	UNIVERSITY OF BIRMINGHAM	Poster Presenter	Registered
SUSANNE ULLRICH	UNIVERSITY OF YORK	Poster Presenter	Registered
JONATHAN G UNDERWOOD	NATIONAL RESEARCH COUNCIL OF CANADA	Poster Presenter	Accepted
XUE-BIN WANG	WASHINGTON STATE UNIVERSITY AT TRI-CITY	Speaker	Registered
PETER M WEBER	BROWN UNIVERSITY	Speaker	Registered
JORG MATHIAS WEBER	UNIVERSITAET KARLSRUHE	Poster Presenter	Registered
MICHAEL G WHITE	BROOKHAVEN NATIONAL LABORATORY	Discussion Leader	Registered
HIN-KOON WOO	AMES LABORATORY	Attendee	Registered
ERICA A WORONOWICZ	YALE UNIVERSITY	Poster Presenter	Registered
AKIRA YAGISHITA	NATIONAL LAB FOR HIGH ENERGY PHYSICS	Speaker	Registered
YOSHIHIRO YAMAKITA	UNIVERSITY OF OXFORD	Poster Presenter	Registered
DONG-SHENG YANG	UNIVERSITY OF KENTUCKY	Poster Presenter	Registered
RUNCHUAN ZHAO	STANFORD UNIVERSITY	Poster Presenter	Registered
WEIJUNG ZHENG	JOHNS HOPKINS UNIVERSITY	Poster Presenter	Registered

