



GORDON RESEARCH CONFERENCES *frontiers of science*
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Nancy Ryan Gray, Ph.D.
Director

**2006 GORDON RESEARCH CONFERENCE
on PHOTOIONS, PHOTOIONIZATION & PHOTODETACHMENT
FINAL PROGRESS REPORT
DEPARTMENT OF ENERGY
GRANT NO. DE-FG02-05ER15698**

The Gordon Research Conference (GRC) on PHOTOIONS, PHOTOIONIZATION & PHOTODETACHMENT was held at Santa Ynez Valley Marriott from 1/29/2006 thru 2/3/2006. The Conference was well-attended with 83 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. 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In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field.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. Attached is a copy of the formal schedule and speaker program and the poster program. 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.

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 As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings.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.

Sincerely,
ROBERT E CONTINETTI
UNIVERSITY OF
CALIFORNIA, SAN DIEGO



PHOTOIONS, PHOTOIONIZATION & PHOTODETACHMENT

Santa Ynez Valley Marriott
Jan 29-Feb 3, 2006

Name	Organization	Participation	Status
MARK J ABEL	UC BERKELEY	Poster Presenter	Registered
FATMA A AKIN	UNIVERSITY OF ARIZONA	Poster Presenter	Registered
LARS H ANDERSEN	UNIVERSITY OF AARHUS	Speaker	Registered
SUN JONG BAEK	UNIVERSITY OF CALIFORNIA, DAVIS	Attendee	Registered
TOMAS BAER	UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL	Speaker	Registered
UWE E BECKER	FRITZ-HABER-INSTITUTE DER MAX-PLANCK-GESELLSCHAFT	Speaker	Registered
NORA BERRAH	WESTERN MICHIGAN UNIVERSITY	Discussion Leader	Registered
IRINA A BOCHAROVA	KANSAS STATE UNIVERSITY	Poster Presenter	Registered
KIT H BOWEN	JOHNS HOPKINS UNIVERSITY	Speaker	Registered
JOHN D BOZEK	LCLS/SLAC	Attendee	Registered
ROBERT E CONTINETTI	UNIVERSITY OF CALIFORNIA, SAN DIEGO	Chair	Registered
ALOKE DAS	LOUISIANA STATE UNIVERSITY	Poster Presenter	Registered
CAROLINE E DESSENT	UNIVERSITY OF YORK	Discussion Leader	Registered
ANTONIO S DOS SANTOS	TEXAS A&M UNIVERSITY	Poster Presenter	Registered
DANIELLE DOWEK	UNIVERSITE PARIS-SUD	Discussion Leader	Registered
JOHN H D ELAND	OXFORD UNIVERSITY	Speaker	Registered
UZI J EVEN	TEL AVIV UNIVERSITY	Attendee	Registered
HAIYAN FAN	ARGONNE NATIONAL LABORATORY	Poster Presenter	Registered
MARK S FORD	UNIVERSITY OF WARWICK	Poster Presenter	Registered
OLIVER GESSNER	STEACIE INSTITUTE FOR MOLECULAR SCIENCES	Poster Presenter	Registered
VASILIY V GONCHAROV	EMORY UNIVERSITY	Poster Presenter	Registered
CHRIS H GREENE	UNIVERSITY OF COLORADO	Speaker	Registered
GRAHAM B GRIFFIN	UNIVERSITY OF CALIFORNIA, BERKELEY	Poster Presenter	Registered
ANDREJ GRUBISIC	JOHNS HOPKINS UNIVERSITY	Poster Presenter	Registered
EMILY R GRUMBLING	UNIVERSITY OF ARIZONA	Poster Presenter	Registered
CHRIS J HAMMOND	UNIVERSITY OF NOTTINGHAM	Poster Presenter	Registered
NILS HANSEN	SANDIA NATIONAL LABORATORIES	Poster Presenter	Registered
JOHN W HEPBURN	UNIVERSITY OF BRITISH COLUMIA	Discussion Leader	Registered
PAUL HOCKETT	UNIVERSITY OF NOTTINGHAM	Poster Presenter	Registered
QICHI HU	UNIVERSITY OF CALIFORNIA, SAN DIEGO	Attendee	Registered
DAVID B P JACKSON	UNIVERSITY OF MANCHESTER	Poster Presenter	Registered
MARK A JOHNSON	YALE UNIVERSITY	Discussion Leader	Registered
JAMES P KERCHER	UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL	Poster Presenter	Registered
MYUNG HWA KIM	WAYNE STATE UNIVERSITY	Poster Presenter	Registered
ADRIAN K KING	UNIVERSITY OF NOTTINGHAM	Poster Presenter	Registered
ANTTI E KIVIMAKI	INFM-CNR	Poster Presenter	Registered
YEON JAE KO	JOHNS HOPKINS UNIVERSITY	Poster Presenter	Registered
WEI KONG	OREGON STATE UNIVERSITY	Discussion Leader	Registered
STEPHEN LEONE	UNIVERSITY OF CALIFORNIA, BERKELEY	Speaker	Registered
DENNIS W LINDLE	UNIVERSITY OF NEVADA, LAS VEGAS	Attendee	Registered
W. CARL LINEBERGER	UNIVERSITY OF COLORODO	Speaker	Registered
ZHOU LU	UNIVERSITY OF CALIFORNIA, SAN DIEGO	Poster Presenter	Registered
ROBERT R LUCCHESE	TEXAS A&M UNIVERSITY	Discussion Leader	Registered
RICHARD MABBS	WASHINGTON UNIVERSITY IN ST. LOUIS	Poster Presenter	Registered
CHAKRA M MAHARJAN	KANSAS STATE UNIVERSITY	Poster Presenter	Registered
STEVEN T MANSON	GEORGIA STATE UNIVERSITY	Attendee	Registered
GIOVANNI MELONI	SANDIA NATIONAL LABORATORIES	Poster Presenter	Registered
FREDERIC MERKT	ETH ZUERICH	Speaker	Registered
YUXIANG MO	TSINGHUA UNIVERSITY	Speaker	Registered
RAFFAELE MONTUORO	TEXAS A&M UNIVERSITY	Poster Presenter	Registered
MELANIE MUCKE	UNIVERSITY OF MANCHESTER	Attendee	Registered
KLAUS MUELLER-DETHLEFS	UNIVERSITY OF MANCHESTER	Vice Chair	Registered



Photoions, Photoionization & Photodetachment

January 29 - February 3, 2006
Santa Ynez Valley Marriott
Buellton, CA

Chair: [Robert E Continetti](#)
Vice Chair: [Klaus Muller-Dethlefs](#)

The 4th Gordon Conference on Photoions, Photoionization and Photodetachment will be held January 29 - February 3, 2006 at the Santa Ynez Valley Marriott in Buellton, California. This meeting will continue to cover fundamentals and applications of photoionization and photodetachment, including valence and core-level phenomena and applications to reaction dynamics, ultrashort laser pulses and the study of exotic molecules and anions. Further information will be available soon at the Gordon Conference Website, and will be announced.

SUNDAY

4:00 pm - 9:00 pm	Arrival and Check-in
6:00 pm	Dinner
7:30 pm - 9:30 pm	PHOTODETACHMENT
7:30 pm - 7:45 pm	Discussion Leader: Mark Johnson (Yale Univ., USA)
7:45 pm - 8:20 pm	Lai-Sheng Wang (Wash St. Univ. / Pac. Northwest National Lab, USA) "Photodetachment of Multiply Charged Anions, Solvated Anions, and vibrationally Cold Anions"
8:20 pm - 8:30 pm	Discussion
8:30 pm - 9:05 pm	Kit H. Bowen (Johns Hopkins Univ., USA) "Photoelectron Spectroscopy of Cluster Anions"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:25 pm	Hot Topic #1
9:25 pm - 9:30 pm	Discussion

MONDAY

7:30 am - 8:30 am	Breakfast
8:30 am	Group Photo
9:00 am - 12:30 pm	TIME-RESOLVED PHENOMENA
9:00 am - 9:15 am	Discussion Leader: Peter Weber (Brown Univ., USA)
9:15 am - 9:50 am	Toshinori Suzuki (RIKEN, Japan) "Photoionization Dynamics Studied by Time-Resolved Photoelectron Imaging"
9:50 am - 10:00 am	Discussion
10:00 am - 10:35 am	Albert Stolow (National Research Council, Canada) "Time-Resolved Photoelectron and Coincidence Imaging Spectroscopy of a Complex Dissociation"
10:35 am - 10:45 am	Discussion
10:45 am	Coffee Break
11:00 am - 11:35 am	David Villeneuve (National Research Council, Canada) "Time-Reversed Photoelectron Angular Distributions - Observing Orbital Wave Functions using High Harmonic Generation"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	Andrei Sanov (Univ. Arizona, USA) "Chemical Interactions and Dynamics Through the Eyes of Schrödinger's Cat"
12:20 am - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session 1
6:00 pm	Dinner

7:30 pm - 9:30 pm	PHOTOIONIZATION
7:30 pm - 7:45 pm	Discussion Leader: Cheuk-Yiu Ng (UC Davis, USA)
7:45 pm - 8:20 pm	Stephen Leone (UC Berkeley / LBNL, USA) "Photoelectron Dynamics of Nanoparticles"
8:20 pm - 8:30 pm	Discussion
8:30 pm - 9:05 pm	Stephen Pratt (Argonne National Laboratory, USA) "Photoionization of Some Small Hydrocarbon Radicals"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:25 pm	Hot Topic #2
9:25 pm - 9:30 pm	Discussion
9:45 pm	Poster Session 1

TUESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	EXOTIC ANIONS
9:00 am - 9:15 am	Discussion Leader: Caroline Dessim (York Univ., UK)
9:15 am - 9:50 am	W. Carl Lineberger (Univ. of Colorado / JILA, USA) "Time-Resolved Dynamics Initiated by Anion Photodetachment"
9:50 am - 10:00 am	Discussion
10:00 am - 10:35 am	Jack Simons (Univ. of Utah, USA) "Attachment of Low-Energy Electrons to Peptides and DNA"
10:35 am - 10:45 am	Discussion
10:45 am	Coffee Break
11:00 am - 11:35 am	Lars Andersen (Univ. of Aarhus, Denmark) "Environmental Stabilization of Short-Lived Gas-Phase Dianions, Probed by Electron Scattering"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	J. Matthias Weber (Univ. of Colorado / JILA, USA) "Photodetachment from Doubly Charged Anions - From Small Molecules to Nanoparticles"
12:20 am - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session 1
6:00 pm	Dinner
7:30 pm - 9:30 pm	INNER-SHELL PHOTOIONIZATION
7:30 pm - 7:45 pm	Discussion Leader: Nora Berrah (Western Michigan Univ., USA)
7:45 pm - 8:20 pm	John Eland (Oxford Univ., UK) "Double Photoionization from Valence and Inner Shells Studied by New Coincidence Techniques"
8:20 pm - 8:30 pm	Discussion
8:30 pm - 9:05 pm	Erwin Poliakoff (Louisiana State Univ., USA) "Evolution of Photoelectron-Vibrational Coupling with Molecular Complexity"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:25 pm	Hot Topic #3
9:25 pm - 9:30 pm	Discussion
9:45 pm	Poster Session 1

WEDNESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	VECTOR CORRELATIONS
9:00 am - 9:15 am	Discussion Leader: Danielle Dowek (Univ. Paris Sud / LCAM, France)

9:15 am - 9:50 am	Ivan Powis (Univ. of Nottingham, UK) "Chiral Molecule Photoemission"
9:50 am - 10:00 am	Discussion
10:00 am - 10:35 am	Uwe Becker (Fritz Haber Institute, Germany) "Coherence and De-Coherence in Molecular Double-Slit Experiments"
10:35 am - 10:45 am	Discussion
10:45 am	Coffee Break
11:00 am - 11:35 am	Katharine Reid (Univ. of Nottingham, UK) "Excited State Dynamics Probed by Photoelectron Spectroscopy"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	Joachim Ullrich (MPIK Heidelberg, Germany) "Ionization, Dissociation and Coulomb-Explosion in Intense Ultra-Fast Laser Pulses"
12:20 am - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session 2
6:00 pm	Dinner
7:00 pm - 7:30 pm	<u>Business Meeting</u> (Nominations for the next Vice Chair; Fill out Conference Evaluation Forms; Discuss future Site & Scheduling preferences; Election of the next Vice Chair)
7:30 pm - 9:30 pm	IONIZATION PROBES OF REACTION DYNAMICS
7:30 pm - 7:45 pm	Discussion Leader: John Hepburn (Univ. British Columbia, Canada)
7:45 pm - 8:20 pm	Tomas Baer (Univ. North Carolina, USA) "The Study of Sequential and Parallel Reactions by Threshold Photoelectron Photoion Coincidence"
8:20 pm - 8:30 pm	Discussion
8:30 pm - 9:05 pm	Arthur Suits (Wayne State University, USA) "Vibrationally Mediated Photodissociation of Ions by Reflectron Multimass Ion Imaging"
9:05 pm - 9:15 pm	Discussion
9:15 pm - 9:25 pm	Hot Topic #4
9:25 pm - 9:30 pm	Discussion
9:45 pm	Poster Session 2

THURSDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 10:45 am	IONS AND IONIZATION (THEORY)
9:00 am - 9:15 am	Discussion Leader: Robert Lucchese (Texas A&M Univ., USA)
9:15 am - 9:50 am	Thomas Sommerfeld (Univ. of Pittsburgh, USA) "Electron Binding Motifs of Water Cluster Anions"
9:50 am - 10:00 am	Discussion
10:00 am - 10:35 am	Chris Greene (Univ. of Colorado / JILA, USA) "Jahn-Teller Coupling Effects on the Photofragmentation of H ₃ "
10:35 am - 10:45 am	Discussion
10:45 am	Coffee Break
11:00 am - 12:30 pm	MOLECULAR PROCESSES: DIATOMICS TO ORGANIC CHEMISTRY
	Discussion Leader: Klaus-Müller Dethlefs (Univ. of Manchester / Photon Sci. Inst., UK)
11:00 am - 11:35 am	Yuxiang Mo (Tsinghua Univ., Beijing, China) "Ion Pair Formation Dynamics of Cl ₂ and F ₂ Studied by Velocity Map Imaging and XUV Laser"
11:35 am - 11:45 am	Discussion
11:45 am - 12:20 pm	Paul Wentholt (Purdue Univ., USA) "Negative Ion Photoelectron Spectroscopy Studies of Nitrenes"

12:20 am - 12:30 pm Discussion

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session 2

6:00 pm Dinner

ZEKE PROBES OF MOLECULES AND CLUSTERS

Discussion Leader: **Wei Kong** (Oregon State Univ., USA)

Fredric Merkt (ETH Zürich, Switzerland)

"High Resolution Photoelectron Spectroscopy of Radicals"

8:20 pm - 8:30 pm Discussion

Dong Sheng Yang (Univ. of Kentucky, USA)

"Pulsed-Field Ionization Electron Spectroscopy of Metal-Organic Complexes"

9:05 pm - 9:15 pm Discussion

Hot Topic #5

9:25 pm - 9:30 pm Discussion

9:45 pm Poster Session 2

FRIDAY

7:30 am - 8:30 am Breakfast

9:00 am Depart

