

246th National ACS Meeting

Division of Physical Chemistry

Chemical Frontiers in Solar System Exploration

Ralf Kaiser
Nadia Balucani
Organizers

Indiana Convention Center
Rooms 240/241/245

September 10-12, 2013

Tuesday Morning
Gas Phase Chemistry: Neutrals
ROOM 241
Ralf Kaiser, Presiding

8:30 (189). Molecular beam and theoretical studies on the reaction dynamics of N(²D) and CN radicals relevant to the atmospheric chemistry of Titan, Nadia Balucani, Francesca Leonori, Dimitrios Skouteris, Marzio Rosi, Piergiorgio Casavecchia

9:10 (190). Low temperature reaction kinetics and organic synthesis in space: Organonitrogen chemistry, Ian R. Sims, Sidaty Cheikh Sid Ely, Martin Fournier, Jean-Claude Guillemin, Stephen J Klippenstein

9:50 (191). Low temperature kinetics and isomer resolved product branching ratios: Key inputs for photochemical models of planetary atmospheres, Kevin R. Wilson

10:30 INTERMISSION

10:45 (192). Reaction mechanisms of the growth of nitrogen-containing polycyclic aromatic compounds at low temperatures: A view from theoretical calculations of potential energy surfaces, Alexander Landera, Alexander M. Mebel

11:25 (193). Laboratory measurements of chemical reactions for atmospheres of the Outer Planets and Titan, Regina J Cody, Ramsey L. Smith

11:45 (194). UV stimulated fluorescence studies of PAH-water ice mixtures, Rebecca Silva, Robert Hodyss, Paul V Johnson

Tuesday Afternoon
Surface Chemistry: Photons
ROOM 240
Ralf Kaiser, Presiding

1:30 (225). New mechanisms for isotopic fractionation in the ISM: Observation of a strong ¹²C/¹³C isotope effect in the photochemical dissociation and desorption of CO₂ (ice) by Lyman- α radiation, John T. Yates, Jr., Chunqing Yuan

2:50 (558). On the use of microfluidic chemical and biochemical analysis devices to detect dipeptides synthesized in interstellar model ices, Richard A Mathies, Ralf I. Kaiser, Amanda Stockton, Yong S. Kim, Erik Jensen

3:30 INTERMISSION

3:45 (228). State specific non-adiabatic branching ratios for N₂ and CO using tunable VUV lasers and time-sliced velocity-map ion imaging for detection, William M. Jackson, Yu Song, Hong Gao, Cheuk Ng

4:25 (229). Electronic structure calculations for understanding the association and growth of small carbon clusters, Martin Head-Gordon, Roberto Peverati, Partha P Bera, Timothy J. Lee

4:45 (230). Role of benzene photolysis in Titan haze formation, Y. Heidi Yoon, Sarah M. Horst, Raea K. Hicks, Rui Li, Joost A. de Gouw, Margaret A. Tolbert

This document was created in a three-column format for printing as a brochure to be distributed at the 246th National ACS Meeting. Its format was changed slightly for posting on the Astrochemistry Subdivision's web site (<http://astro.phys-acs.org/>).

Wednesday Morning
Gas Phase Chemistry: Ions
ROOM 245
Nadia Balucani, Presiding

- 8:30 (295). Novel experimental approaches for fundamental studies of laboratory astrochemistry, **Arthur Suits**, Bernadette M. Broderick, Yumin Lee, James Oldham, Kirill Prozument, Chamara Abeysekara, Barratt Park, Robert W. Field
- 9:10 (296). Organic chemistry in the Kronian satellite system: Titan and Enceladus, **Jack Hunter Waite**, Timothy Brockwell, Brian Magee, Benjamin Teolis, Joseph Westlake
- 9:50 (297). Theoretical kinetics as a tool for exploring the chemistry of Titan's atmosphere, **Stephen J Klippenstein**, Veronique Vuitton, Roger V Yelle, Sarah M Horst, Panayotis Lavvas, Axel Bazin
- 10:30 INTERMISSION
- 10:45 (298). Imaging ion-molecule reactions: Applications in astrochemistry, Linsen Pei, **James M. Farrar**
- 11:25 (299). Dissociation of the CO₂ and C₂H₂ molecular dications: Their role in the upper atmospheres of planets, **Stefano Falcinelli**, Marzio Rosi, Pietro Candori, Franco Vecchiocattivi, Fernando Pirani, Nadia Balucani, Michele Alagia, Robert Richter, Stefano Stranges

Wednesday Afternoon
Surface Chemistry: Ions
ROOM 245
William Jackson, Presiding

- 1:30 (334). Stimulated formation of CO₂ at buried ice: Graphite grain interfaces, **Thomas Michael Orlando**, Jiaming Shi, Gregoary A. Greives
- 2:10 (335). Formation of high mass hydrocarbons on hydrocarbon astrophysical ice analogs, **Brant Jones**, Ralf Kaiser
- 2:50 (336). Irradiation of solid water ice-carbon dioxide mixtures with 100 keV protons, **Ujjwal Raut**, Raul A Baragiola
- 3:30 INTERMISSION
- 3:45 (337). Molecules and molecular evolution in cold extraterrestrial environments: The chemist's approach, **Reggie L. Hudson**, Perry A. Gerakines, Mark J. Loeffler, Marla H. Moore, Robert F. Ferrante
- 4:25 (338). OSIRIS-REx will return a sample of asteroid 1999 RQ36 for astrochemistry, **Jason P Dworkin**, OSIRIS-REx Team
- 4:45 (339). THz time-domain spectroscopy of interstellar ice analogs, **Sergio Ioppolo**, Marco A Allodi, Brett A McGuire, Matthew J Kelley, Geoffrey A Blake

Thursday Morning
Analytical Chemistry
ROOM 245
Arthur Suits, Presiding

- 8:30 (557). Laser desorption, molecular beams, and synchrotron radiation for analysis of complex organic matter, **Musahid Ahmed**
- 9:10 (xxx). Laboratory Investigation of pure and mixed ices of astrochemical relevance via THz and IR spectroscopy, **Marco A. Allodi**, Sergio Ioppolo, Brett A. McGuire, Matthew J. Kelley, Geoffrey A. Blake
- 9:50 (559). UV photoprocessing of interstellar ice analogs, E.C. Fayolle, M. Bertin, C. Romanzin, H.A.M. Poderoso, X. Michaut, A. Moudens, L. Philippe, P. Jeseck, K.I. Oberg, **H. Linnartz**, J.-H. Fillion
- 10:30 INTERMISSION
- 10:45 (560). Titan's surface chemical evolution, **Jonathan I Lunine**.
- 11:25 (561). Amino acids in carbonaceous chondrites and potential formation mechanisms, **Jamie E. Elsila**, Aaron S. Burton, Michael P. Callahan, Jason P. Dworkin, Daniel P. Glavin

Thursday Afternoon
Spectroscopy
ROOM 245
Reggie Hudson, Presiding

- 1:30 (579). Millimeter- and submillimeter-wave spectroscopy of species of astrophysical importance, **Luca Dore**
- 2:10 (580). Stability and spectroscopic signatures of interstellar molecular complexes, **Joseph S. Francisco**
- 2:50 (581). Ice-gas interactions during planet formation, **Karin I Öberg**, Chunhua Qi, David Wilner, Edwin Bergin
- 3:30 INTERMISSION
- 3:45 (582). Composition and chemical history of early solar system ices, **Adwin Boogert**
- 4:25 (583). Exploring chemical diversity in Titan's atmosphere with laboratory microwave spectroscopy, **Kyle N Crabtree**, Oscar Martinez, Harshal Gupta, Sven Thorwirth, Michael C McCarthy
- 4:45 (584). Chirality and compound-specific isotopic ratios of meteoritic aliphatic amines, **José C. Aponte**, Jamie E. Elsila, Aaron S. Burton, Jason P. Dworkin




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WHERE: JW MARRIOTT INDIANAPOLIS
WHITE RIVER BALLROOM E

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