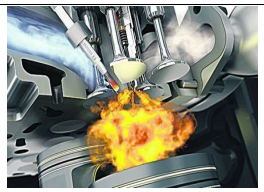
QUADMARTS Workshop, Caltech, Nov. 9-11, 2026





KECK INSTITUTE FOR SPACE SCIENCE
https://www.caltech.edu/map/campus/w-m-keck-center

Monday November 9		
7h30	Breakfast	
8h30	Welcome	Mitchio Okumura
Session 1	**Keck Institute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Sebastien Le Picard**
8h35 (30'+10')	Lucile Rutkowski (U of Rennes)	High-Sensitivity and Multi-Species Detection in the Gas Phase: Techniques, Performance, and Applications
9h15 (15'+5')	David Osborn (UC Davis)	Multidimensional Detection of Chemical Reactions: A New Time-Resolved Photoelectron Photoion Coincidence Spectrometer
9h35 (15'+5')	Abbas Behzadfar (U of Missouri-Columbia)	Low Temperature Radical Kinetics and Signal Estimation by Millimeter Wave Spectroscopy
9h55 (50')	Coffee break	
Session 2	**Keck Insitute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Ian Sims**
10h45 (30'+10')	Adam Fleisher (NIST)	Precision molecular spectroscopy applications in semiconductor applications in semiconductor industry diagnostics
11h25 (15'+5')	Lei Yang (UC Riverside)	Optical Detection of Reactive Intermediates and Particles in Atmospheric and Combustion Systems
11h45 (15'+5')	Termeh Bashiri (Caltech)	An all-optical approach to calcium isotope ratios
12h05-13h30	Lunch	
Session 3	**Keck Insitute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Megan Bentley**
13h30 (30'+10')	Stephen Klippenstein (Argonne NL)	Theory and Experiment Working Hand-in-Hand to Develop Predictive Models for Complex Chemically Reactive Environments

14h10 (15'+5')	Greg Jones (MIT)	Coupled Cluster Theory for Open-Shell Species: Efficient Implementations in CFOUR
14h30 (15'+5')	Leonid Sheps (Sandia NL)	Constraining collisional energy transfer with time-resolved experiments and advanced modeling
14h50 (50')	Coffee break	
Session 4	**Keck Insitute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Craig Taatjes**
15h40 (30'+10')	Judit Zádor (Sandia NL)	What Should We Be Looking For? Guiding Detection with Automated Kinetics and Machine-Learned Potentials
16h20 (15'+5')	Fabien Goulay (West Virginia U)	Isomer-Resolved Detection of Vinoxylic Radicals
16h40 (15'+5')	Mirna Shamas (U of Rennes)	Probing Low-Temperature Fuel Oxidation by Proton-Transfer-Reaction Mass Spectrometry
17h30 – 19h30	Young Researcher's meeting	

Tuesday November 10		
7h30	Breakfast	
Session 5	**Keck Insitute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Barney Ellison**
8h30(30'+10')	Heather Lewandowski (CU Boulder/JILA)	Probing the Frontiers of Interstellar Chemistry Through Cold and Controlled Ion-Molecule Experiments
9h10 (30'+10')	Weslley Guilherme Dias de Paiva Silva (U of Cologne)	High-Resolution Spectroscopy of Elusive Molecular Ions
9h50 (15'+5')	Guy Parkin (U of Leeds)	Low-Temperature Kinetics of the C2 Molecule
10h10 (50')	Coffee break	
Session 6	**Session in honor of Stan Sander (Keck Insitute)** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Fred Winiberg**
11h (15'+5')	Charles Markus (UT San Antonio)	The Influence of Resonance Stabilization on B-Hydroxyalkyl Radical Reactivity with O2
11h20 (15'+5')	Megan Woods (Caltech)	UV Absorption Cross Sections of 1,2-ISOPOOH and Kinetics of Its Reaction with Criegee Intermediates
11h40 (15'+5')	Xu Zhang (JPL)	Reaction of Methane and UV-activated Perchlorate: Relevance to Heterogeneous Loss of Methane in the Atmosphere of Mars
12h00-13h30	Lunch + poster session (poster list below*)	
Session 7&8	**Session in honor of Stan Sander (Noyes 147)** https://www.caltech.edu/map/campus/arthur-amos-noyes-laboratory-of-chemical-physics	**Session chair: Fred Winiberg**
13h30 (15'+5')	Charles Miller (JPL)	Spectroscopic Interrogation of Chemical Reaction Dynamics from Molecular to Planetary Scales
13h50 (15'+5')	Paul Wennberg (Caltech)	CO_2 - easy to measure to 1% but that is no where good enough to be useful
14h10 (30'+10')	Pei-Ling Luo (Academia Sinica)	Experimentally Reassessing the Spectroscopic and Kinetic Properties of the HO2 Radical
14h50 (15'+5')	Christa Fittschen (U Lille)	Rate Constant of the Self-Reaction of Methyl Peroxy Radicals
15h10 (15'+5')	Victoria Barber (UCLA)	Direct generation of a prototypical n-pentyl peroxy radical reveals how

		mixed-fate chemical regimes shape product distributions
15h30 (30')	Coffee break	
16h (60') – **Noyes 153**	A.R. (Ravi) Ravishankara (Colorado State U)	The never-ending pursuit of OH radical: Its formation via carbonyl photolysis and reactions with SO2 and HNO3.
18h00 – 20h00	Banquet (Morgan Library, Kerckhoff Building) https://www.caltech.edu/map/campus/william-g-kerckhoff-laboratories-of-the-biological-sciences	

List of poster presentations*:

Zachary Auvil (Caltech)	Study of NH + NO2 Under Conditions Representative of Hot Exoplanet Atmospheres
Rory Schmidt & Emily Shi (Caltech)	In Situ Cavity Ring Down Spectroscopy for the Detection of Reactive Gas Phase Species in Electron-Enhanced Atomic Layer Deposition
Riddhi Sadhanala (Caltech)	Temperature-Dependent Kinetics of the OH + Ethylene Oxide Reaction
Abbas Behzadfar (U of Missouri – Columbia)	Rotational Strong Coupling and Molecular Thermometry in the Gas Phase

Wednesday November 11		
8h00	Breakfast	
9h30 – 13h00	Huntington Gardens excursion https://maps.app.goo.gl/mwG2AoZ5M5RKPtEr8	
Session 9	**Keck Insitute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Marie-Aline Martin-Drumel**
13h30 (30'+10')	Ugo Jacovella (ISMO)	Aromatic growth in dense molecular clouds: What we know and open challenges
14h10 (15'+5')	Bailey Moore (U of Missouri-Columbia)	Applications of CPICE as a new spectroscopic instrument for studying interstellar ice analogues and sublimation dynamics
14h30 (15'+5')	Jingsong Zhang (UC Riverside)	Spectroscopy and predissociation dynamics of SH/SD radical via the $A^2\Sigma^+$ state
14h50 (20')	Coffee Break	
Session 10	**Keck Insitute** https://www.caltech.edu/map/campus/w-m-keck-center	**Session chair: Craig Murray**
15h10 (30'+10')	Scott Cushing (Caltech)	Integrating entangled photons into spectroscopy: where does it work?
15h50 (15'+5')	Nick Hutzler (Caltech)	Engineered Molecular Clocks for Quantum Sensing
16h10 (15'+5')	Timothy Steimle (ASU/Caltech)	Spectroscopy of CP violation-sensitive states on a nonlinear molecule: SrNH2
16h30 (∞)	Concluding remarks and perspectives	Sebastien Le Picard and Ian Sims