

Curriculum Vitae: Dr. Vassileios C. Papadimitriou

Laboratory Teaching Staff in Physical Chemistry (2014 till now)

Department of Chemistry, University of Crete

Group Supervisor (2016 till now)

Laboratory of Photochemistry and Kinetics,
Department of Chemistry, University of Crete

Address: Vassilika Vouton, University Campus, 70013, Heraklion, Crete, Greece

Tel: +30 2810 5450 93

e-mail: bpapadim@uoc.gr

Regular Visiting Research Scientist (2009 till now)

Cooperative Institute Research in Atmospheric Sciences (CIRES), University of Colorado,
National Oceanic and Atmospheric Administration – Chemical Processes and Instrument
Development (NOAA/CPID)

Address: NOAA–ESRL, Chemical Sciences Division, 325 Broadway, R/CSD5, Boulder, CO
80305 USA

e-mail: Vassilis.Papadimitriou@noaa.gov

PERSONAL:

Born: February 2nd 1977, Argos, Greece

Marital status: Single

Languages: Greek (*Native*), English (*Very Good*)

EDUCATION:

Post-Doctoral – Research Associate, September 2006 -08

Visiting Scientist: 2009 – 2019 (*Active collaboration till to date*)

University of Colorado–National Oceanic and Atmospheric Administration (NOAA) Chemical
Processes and Instrument Development (CPID/CSD)

PhD Degree in Physical Chemistry, December 2005

Department of Chemistry, University of Crete, Greece

MSc Degree in Chemistry, January 2001

Department of Chemistry, University of Crete, Greece

Diploma in Chemistry, September 1998 (7.27, *Very Good*)

Department of Chemistry, University of Crete, Greece

SCHOLARSHIPS:

**Scholarship of Post-doctoral Research, Cooperative Institute Research in Atmospheric
Sciences (CIRES), University of Colorado, National Oceanic and Atmospheric Administration
(NOAA/CSD), 2006 – 08**

**Performance Scholarship for Graduate Studies, State Scholarship Foundation (S.S.F.), 1999
–2000**

**MSc Degree Scholarship, (ΕΠΕΑΕΚ), Graduate Program – Applied Molecular Spectroscopy
(A.M.S.), 1998 –2000**

SUPERVISING EXPERIENCE:

Philosophiae Doctorate, Ph.D.:

| | |
|---|---|
| Graduated¹ | Dr. Aristotelis M. Zaras ^{#, &, 2} |
| Dr. Dimitrios K. Papanastasiou ^{#, 2} | On-Going |
| Dr. Manolis N. Romanias ^{#, 2} | MSc. Maria E. Aggelaki [%] |
| Dr. Vassileios G. Stefanopoulos ^{#, 2} | |

¹ co-supervising with: # Prof. Panos Papagiannakopoulos; & Dr. Yannis G. Lazarou; % Prof. Maria Kanakidou; ² Instruments development, experiments designing and scientific advisor with regard data analysis, interpretation and presentation

Master of Science, M.Sc.:

| | |
|----------------------------------|---------------------------------------|
| Graduated | MSc. Aikaterini D. Panagiotaki (2016) |
| MSc. Georgia Antonopoulou (2019) | MSc. Christina Spitieri (2014) |
| MSc. Nikolaos Kaloudis (2018) | MSc. Emmanuel S. Karafas (2011) |
| MSc. Maria E. Aggelaki (2017) | On-Going |
| MSc. Zoe Foutouli (2017) | Maria-Areti Spanoudaki |

Graduation Thesis:

| | |
|-----------------------------|--------------------------|
| Graduated | Ioannis Sarris (2017) |
| Angeliki Eleftheriou (2019) | Maria E. Aggelaki (2015) |
| Antonia Intze (2018) | Zoe P. Foutouli (2014) |
| Evangelia Drougkaki (2018) | On-Going |
| Eirini Malegiannaki (2018) | Christina Panopoulou |
| Eirini Dimoulia (2018) | Vassileios Vassileiou |
| Emmy Christaki (2018) | Foteini Arvaniti |
| Georgia Antonopoulou (2017) | Evangelia Konstantaki |
| Marios Tsikos (2017) | Thomas Giotopoulos |

TEACHING EXPERIENCE:

Undergraduate Courses:

Physical Chemistry II (4th semester course, 2009 – till Today):

Thermodynamics and Chemical Kinetics (Teaching Chemical Kinetics)

Laboratory of Physical Chemistry I (3rd semester course, 2013 – till now):

Spectroscopy, Statistical Mechanics and Chemical Kinetics

Laboratory of Physical Chemistry II (6th semester course, 2013 – till now):

Thermodynamics, Electrochemistry and Transportation Properties

Graduate Courses:

Infrared Absorption and Raman Spectroscopy (2009 – till now):

Theoretical and Experimental Training on Infrared Spectroscopy

RESEARCH EXPERIENCE:

Invited Senior Scientist in Douai, Lille IMT-University, Atmospheric Sciences and Environmental Engineering Department, June-July 2018 and September – October 2019.

Visiting Research Scientist, 2010, 2012, 2013, 2015, 2017, 2018, 2019 (*three to five months per year*), University of Colorado–National Oceanic and Atmospheric Administration (NOAA/CSD) (open collaboration till to date)

Post-Doctoral – Research Associate, September 2006 -08
University of Colorado–National Oceanic and Atmospheric Administration (NOAA/CSD)

Post-Doctoral – Research Associate, (December 2005 – August 2006)
Laboratory of Photochemistry and Kinetics, Department of Chemistry, University of Crete

February 2001 – December 2005

PhD Thesis: *“Kinetic Studies for the Reactions of OH Radicals and Cl Atoms with Fluorinated Alcohols in the Gas Phase and Investigation of their Tropospheric Degradation Mechanism”*

Laboratory of Photochemistry and Chemical Kinetics

University of Crete, Department of Chemistry

Supervisor: Prof. Panos Papagiannakopoulos

September 1998 – January 2001

Master Thesis: *“Temperature dependent measurements of absolute rate coefficients for the reactions of Cl atoms with CF₃CH₂OH, CHF₂CH₂OH and CH₂FCH₂OH in the gas phase and oxidation products characterization of the primary dehydrogenated radicals”*

Laboratory of Photochemistry and Chemical Kinetics

University of Crete, Department of Chemistry

Supervisor: Prof. Panos Papagiannakopoulos

June 1997 – June 1998

Graduation Thesis: *“Determination of the Kinetic Parameters for the Reaction of Deuterium Atoms with Methyl Bromine in the Gas Phase”* and *“Determination of the Kinetic Parameters for the Reaction of Chlorine Atoms with Siloxanes in the Gas Phase”*

Laboratory of Photochemistry and Chemical Kinetics

University of Crete, Department of Chemistry

Supervisor: Prof. Panos Papagiannakopoulos

LABORATORY EXPERIENCE:

• Development, Interfacing, Automation and Control of Modern Kinetic Techniques for the study of Fast Gas-Phase Reactions equipped with Modern Spectroscopic Detection Techniques

- Very-Low Pressure Reactor coupled with Quadrupole Mass Spectrometry and Laser Induced Fluorescence Detection Techniques, **VLPR/QMS-LIF**
- Pulsed Laser Photolysis coupled with Laser Induced Fluorescence, **PLP/LIF**
- Thermostated PhotoChemical Reactor (Relative Rate Methods) coupled with FT-IR Spectroscopy (**TPCR-RR/FT-IR**)

• Knudsen Reactor Technique. Application in the Study of Homogeneous and Heterogeneous Chemical Processes (gas–surface interactions and uptake)

• Modern Spectroscopic and Analytical Detection Techniques

- Quadrupole Mass Spectrometry (**QMS**)
- Chemical Ionisation Mass Spectrometry (**CIMS**)
- Selected Ion Flow Tube Mass Spectrometry (**SIFT/MS**)

- Laser Induced and Resonant Fluorescence (**LIF** and **RF**)
 - CO₂ laser Photochemistry (Plasma Induced CVD, ablation and REMP-I/D)
 - UltraViolet – Visible Spectroscopy (**UV-Vis**)
 - Fourier Transformed InfraRed Spectroscopy (**FT-IR**) and Reflection-Absorption Spectroscopy (**FT-IR/RAS**)
 - **Raman** Spectroscopy (Light Scattering)
 - **Laser** Spectroscopy (Nd:YAG, Dye, Excimer and Diode Lasers and Coupling)
 - Nuclear Magnetic Resonance (**NMR**)
 - Coupled Gas Chromatography – Mass Spectrometry (**GC-MS**)
 - Reverse-Phase Liquid Chromatography (**RPLC**)
- **Interface, Automation and Remote Controlling** of Electronic Devices
 - **Vacuum Technology** (Ultra-High, High and Low vacuum techniques)
 - Molecular Quantum-Chemical Calculations (**Ab-initio** and **DFT**) employing **Gaussian 94/98/03/09/16** program suites

COMPUTATIONAL EXPERIENCE:

Operating Systems: Open VMS, AIX/UNIX, WINDOWS 95/98/2000/XP, AIX/UNIX, WINDOWS 95/98/2000/XP, Linux (*RedHat 6.x, 7.x, 8.x, 9.x Fedora Core, SuSe*)

Common Software: Microsoft Office Suite Programs (*Word, Excel, Power Point, Front Page, etc*), Designing Suites (*AutoCad, Adobe Photoshop*), Chemical Suites (*ChemDraw, IsisDraw*)

Data Analysis and Specialized Software: Wavemetrics (*Igor 5.x, 6.x, 7.x*), OriginLab Suite (*all versions*), Gaussian 94/98/03/09/16, GaussView 6.0.16

Programming Languages: Fortran, C++, script languages (*csh, tcsh and bash shell*), Labview programming and automation

RESEARCH INTERESTS:

Fundamental and applied research in the area of experimental and theoretical Physical Chemistry, employing modern spectroscopic and computational techniques. Kinetic studies of fast, gas-phase reactions linked with Atmospheric Chemistry, Climate and Air Quality. Kinetic studies of several chemical processes with industrial interest (catalysis, synthesis of novel compounds, combustion and chemical reactivity).

- **Gas phase reaction kinetics** related to atmospheric processing: OH and NO₃ radicals and Cl atoms and O₃ chemical reactivity towards biogenic and anthropogenic volatile (*CFC and halons alternatives, terpenes, amines, VOCs*) and semi- or low-volatile (*silicon, furan-based – biomass burning products – and aromatic compounds*). Determination of a. absolute and relative rate coefficients for fast reactions, b. Molecular reaction dynamics and mechanisms, c. SOA potential and direct and indirect GWP and ODP for assessing VOCs' Climate-impact.
- **Experimental Techniques Designing and Development and Coupling with Modern Optical and Analytical Detection Methods** (e.g., Laser Spectroscopy, Infrared Spectroscopy, FT-IR and Reflection-Absorption Spectroscopy, RAS) and Spectrometric Techniques (Quadrupole Mass Spectrometry) aimed to study PhysicoChemical Properties and Kinetics and Mechanisms for key Reactions with Atmospheric and/or Technological Interest.

- **Photocatalysis efficiency and optimization** of novel synthesized nano-composites, materials, e. g., doped metal oxides photoinduced by natural UV- or Vis-light aiming to combat outdoor and indoor pollution.
- **Heterogeneous interactions** of trace atmospheric gases with particles located in the region (ice, salts, dust) of the troposphere, as well as in the Stratosphere, and assessment of their atmospheric impact.
- **Spectroscopy and Optical Properties Determination** (UV/Vis and IR Absorption Cross-Sections) of key volatile and semi- and low- volatile organic compounds, abundant in the Atmosphere.
- **Thermochemistry, Intermediates Energetics and Mechanisms** of complex chemical processes with Atmospheric interest, i. e., fluorinated olefins or transient species processing. Thermal stability of energetic molecules and detailed chemical and thermal mechanism investigation for the degradation of anthropogenic and biogenic compounds in the atmosphere.
- **Laser induced chemical vapour deposition synthesis (CVD)** and characterisation of novel organometallic materials (CO₂ laser photolysis of silicon containing compounds in the gas phase, and CO₂ laser ablation of solid silicon compounds) and polymers, i. e., tholins, with scientific and industrial interest.
- **Quantum-mechanical calculations** of polyatomic systems (Determination of geometries and thermochemical properties of polyatomic molecules and reaction thermochemistry and kinetics of bimolecular reactions) with environmental interest.

PARTICIPATION IN RESEARCH PROGRAMS:

- **“Atmospheric Chemistry of CHF₂CH=CF₂: OH and NO₃ radicals, Cl-atoms and O₃ kinetics and Intermediate and end-oxidation products investigation”**, PI: Dr. Vassileios C. Papadimitriou in collaboration with Dr. A. Mellouki and Prof. A. R. Ravishankara, CNRS HELIOS 004-2018, This project/work has received funding from the European Union’s Horizon 2020 research and innovation programme through the EUROCHAMP-2020 Infrastructure Activity under grant agreement No 730997, **2018 – 2022, (2019)**
- **“Development of bioenergy and recycled wood products from forest residues and wood by-products”**, Co-funded by E. C. FP7 and Hellenic Ministry of Education, **2013-2015**
- **“Impact of the atmospheric sea-deposition on the productivity of Mediterranean region”**, Co-funded by E. C. FP7 and Hellenic Ministry of Education, **2012-2015**
- **“Atmospheric Chemistry of (CF₃)₂=CH₂: OH, Cl-atoms and O₃ kinetics”**, in collaboration with Dr. A. Mellouki: This project/work has received funding from the European Union FP7-Infrastructures, Grant agreement ID: 228335, **2009-2013, (2012)**
- **“The Role of N₂O₅ Heterogeneous Reactions with Marine Aerosols and Sahara Dust in Troposphere and Stratospheric Ozone”**, Cyprus Research Promotion Foundation, **2009-2011**
- **“Stratospheric-Climate Links with Emphasis on the Upper Troposphere and Lower Stratosphere”(SCOUT-O3)**, EU, DG Research, Sixth Framework Programme, Sustainable Development, Global Change and Ecosystems, **2004-2009**

- “Study of the Heterogeneous Reactions Role in Atmospheric Chemistry, based on Kinetic Data, Field Measurements and Modelling Calculations” (PENED2003), Greek General Secretariat of Research and Technology, **2005-2008**
- “Degradation of Anthropogenic and Biogenic Chemical Compounds in the Troposphere and Global Change”, Cyprus Research Promotion Foundation, **2005-2007**
- “The Role of Heterogeneous Reactions in Atmospheric Chemistry and Climate” (PYTHAGORAS II), Greek General Secretariat of Research and Technology, **2005-2006**
- “Degradation of Anthropogenic Chemical Substances in the Troposphere and Global Changes” (TROPOS), Greek General Secretariat of Research and Technology, **2004-2006**
- “Impact of Alternative Fluorinated Alcohols and Ethers on the Environment- a Laboratory and Modelling Study”(IAFAEE), EU, DGXII, Fifth Framework Programme, Environment and Sustainable Development, **2000-2003**
- “Development of Hydrogen Technologies in Greece”, Greek General Secretariat of Research and Technology, **1998-2001**
- “Atmospheric processes for partially fluorinated ethers”, EU, DGXII, Fourth Framework Programme, Environment and Climate, **1996-99**
- “Ambient Air Measurements of Special Air Pollutants in the area of Motor Oil Refinery”, Program within the Greek Ministry for the Environment, **1996-97**

PEER REVIEWER IN SCIENTIFIC INTERNATIONAL JOURNALS:

- Atmospheric Chemistry and Physics
- Chemical Physics Letters
- International Journal of Chemical Kinetics
- Atmospheric Environment
- Environmental Science and technology
- Environmental Science and Pollution Research
- Molecular Physics
- Journal of Molecular Modelling
- Science of Advanced Materials
- Chemical Engineering Journal
- Journal of Atmospheric and Oceanic Technology
- Colloids and Surfaces A: Physicochemical and Engineering Aspects
- Catalysts
- Physical Chemistry Chemical Physics
- Atmosphere

SCIENTIFIC PUBLICATIONS:

Published:

1. McGillen, M., V. C. Papadimitriou, S. Smith and J. B. Burkholder, “FC(O)C(O)F, FC(O)CF₂C(O)F, and FC(O)CF₂CF₂C(O)F: Ultraviolet and Infrared Absorption Spectra and 248 nm Photolysis Products”, *J. Phys. Chem. A*, Submitted **2020**
2. Chattopadhyay, A., V. C. Papadimitriou, P. Marshall and J.B. Burkholder, “Temperature-dependent rate coefficients for the gas-phase OH + furan-2,5-dione

- (C₄H₂O₃, maleic anhydride) reaction”, *Int. J. Chem. Kinet.*, **2020**, DOI: 10.1002/kin.21387
3. Bernard, F., D. K. Papanastasiou, R. W. Portmann, V. C. Papadimitriou, and J. B. Burkholder, “Atmospheric lifetimes and global warming potentials of 3 atmospherically persistent N(C_xF_{2x+1})₃, x = 2-4, perfluoroamines”, *Chem. Phys. Lett.*, **2020**, *744*, 137089
 4. N. Osseiran, M. N. Romanias,* V. Gaudion, M. E. Angelaki, V. C. Papadimitriou,* A. Tomas, P. Coddeville, F. Thevenet “Development and validation of a THERMALLY regulated AtMOSpheric simulation chamber (THALAMOS). A versatile tool to simulate atmospheric processes.”, *J. Environ. Sci.*, **2020**, accepted for publication
 5. D. Papadaki, G. H. Mhlongo, D. E. Motaung, S. S. Nkosi, K. Panagiotaki, E. Christaki, M. N. Assimakopoulos, V. C. Papadimitriou, F. Rosei, G. Kiriakidis and S. S. Ray, “Hierarchically Porous Cu-, Co-, and Mn-Doped Platelet-Like ZnO Nanostructures and Their Photocatalytic Performance for Indoor Air Quality Control”, *ACS OMEGA*, **2019**, *4*, 16429 – 16440
 6. Marshall P., Papadimitriou, V. C., Papanastasiou, D. K., Roberts, J. M. and Burkholder, J. B., “UV and Infrared absorption spectra and 248 nm photolysis of maleic anhydride”, *J. Photochem. Photobio. A*, **2019**, *382*, 111953
 7. M. Baasandorj, V. C. Papadimitriou and J. B. Burkholder, “Rate Coefficients for the Gas-Phase Reaction of (E)- and (Z)-CF₃CF=CF₃ with the OH Radical and Cl-Atom”, *J. Phys. Chem. A*, **2019**, *123*, 5051–5060.
 8. Bernard, F., Papanastasiou, D. K., Papadimitriou, V. C, and Burkholder, J. B. “Infrared absorption spectra of N(C_xF_{2x+1})₃, x = 2-5 perfluoroamines”, *J. Quant. Spectrosc. RA*, **2018**, *202*, 247–254
 9. Bernard, F., Papanastasiou, D. K., Papadimitriou, V. C and Burkholder, J. B., “Temperature Dependent Rate Coefficients for the Gas-Phase Reaction of the OH Radical with Linear (L2, L3) and Cyclic (D3, D4) Permethysiloxanes”, *J. Phys. Chem. A*, **2018**, *122*, 4252-4264.
 10. Bernard, F., Papanastasiou, D. K., Papadimitriou, V. C. and Burkholder, J. B. “Infrared absorption spectra of linear (L2-L5) and cyclic (D3-D6) permethysiloxanes”, *J. Quant. Spectrosc. RA*, **2017**, *202*, 247–254
 11. Vassileios C. Papadimitriou and James B. Burkholder, “OH radical reaction rate coefficients, infrared spectrum, and global warming potential of (E)-(CF₃)₂CFCH=CHF (HFO-1438ezy(E))”, *J. Phys. Chem. A*, **2016**, *120*, 6618–6628.
 12. Spitieri C. S., Cazaunau M., Lendar M., Daële V., Mellouki A., Papagiannakopoulos P. and Papadimitriou V. C., “Atmospheric chemistry of (CF₃)₂C=CH₂: OH, Cl and O₃ rate coefficients, IR Spectra, GWP and oxidation end-products analysis”, *Phys. Chem. Chem. Phys.*, **2015**, *17*, 25607–25620
 13. M. N. Romanias, Dagaut P., Bedjanian, Y., Andrade-Eiroa, A., Shahla, R., Karafas, E. Papadimitriou V. C., Spyros, A., "Investigation of the Photochemical Reactivity of Soot Particles Derived from Biofuels Towards NO₂. A Kinetic and Product Study." *J. Phys. Chem. A*, **2015**, *119*, 2006-2015
 14. V. C. Papadimitriou, E. S. Karafas, T. Gierczak, and J. B. Burkholder, “Temperature and Pressure Dependence of the CH₃CO + O₂ + M (M = He, N₂) Reaction Rate Coefficient”, *J. Phys. Chem. A*, **2015**, *119*, 7481–7497

15. M. N. Romanias, V. C. Papadimitriou and P. Papagiannakopoulos, "Uptake of propionic and butyric acids on pure and HNO₃-doped ice surfaces under UT/LS temperature conditions", *J. Phys. Chem. A*, **2014**, *118*, 11380–11387
16. V. C. Papadimitriou, M. R. McGillen, S. C. Smith, A. M. Jubbe, R. Portmann, B. D. Hall, E. L. Fleming, C. H. Jackman and J. B. Burkholder, "1,2-dichlorohexafluoro-cyclobutane (1,2-c-C₄F₆Cl₂, R-316c) an Unforgettable Ozone Depleting Substance: Atmospheric Loss Processes, Lifetimes, and Ozone Depletion and Global Warming Potentials for the (E)- and (Z)- Isomers", *J. Phys. Chem. A*, **2013**, *117*, 11049–11065.
17. V. C. Papadimitriou, M. R. McGillen, E. L. Flemming, C. H. Jackman and J. B. Burkholder, "NF₃: UV absorption spectrum temperature dependence and the atmospheric and climate forcing implications", *Geophys. Res. Lett.*, **2013**, *40*, 440-445,
18. M. N. Romanias, A.G. Zogka, V.C. Papadimitriou and P. Papagiannakopoulos, "Uptake Measurements of Acetic Acid on Ice and Nitric Acid-Doped Thin Ice Films over Upper Troposphere/Lower Stratosphere Temperatures", *J. Phys. Chem. A*, **2012**, *116*, 2198–2208
19. V. C. Papadimitriou*, V. G. Stefanopoulos, M. N. Romanias, P. Papagiannakopoulos, K. Sampani, V. Tudose and G. Kiriakidis, "Determination of photo-catalytic activity of undoped and Mn-doped TiO₂ anatase powders on acetaldehyde under UV and visible light", *Thin Solid Films*, **2011**, *520*, 1195
20. V. C. Papadimitriou, Y. G. Lazarou, R. K. Talukdar and J. B. Burkholder, "Reaction Rate Coefficients, Product Yields and Thermochemistry for the Cl and NO₃ reactions with CF₃CF=CH₂ and CF₃CF=CHF", *J. Phys. Chem. A*, **2011**, *115*, 167
21. M. N. Romanias, Dr., A. G. Zogka, MSc., V. G. Stefanopoulos, Dr., V. C. Papadimitriou, Dr., and P. Papagiannakopoulos, Prof. Dr., "Uptake Measurements of Formic Acid on Thin Ice Films and on Ice Doped with Nitric Acid between 195 and 211 K", *Chem. Phys. Chem.*, **2010**, *11*, 4042
22. Manolis N. Romanias, Vassileios G. Stefanopoulos, Dimitrios K. Papanastasiou, Vassileios C. Papadimitriou and Panos Papagiannakopoulos, "Temperature-Dependent Rate Coefficients and Mechanism for the Gas-Phase Reaction of Chlorine Atoms with Acetone", *Int. J. Chem. Kinet.*, **2010**, *42*, 724
23. M. Baasandorj, G. Knight, V.C. Papadimitriou, R. K. Talukdar, A. R. Ravishankara and J. B. Burkholder, "Rate Coefficients for the Gas-Phase Reaction of the Hydroxyl Radical with CH₂=CHF and CH₂=CF₂", *J. Phys. Chem. A*, **2010**, *114*, 4619
24. D. K. Papanastasiou, V. C. Papadimitriou, D. W. Fahey and J. B. Burkholder, "UV Absorption Spectrum of the ClO Dimer (Cl₂O₂) between 200 and 420 nm", *J. Phys. Chem. A*, **2009**, *113*, 13711, (*Selected for Cover Art JPC Ai49, vol. 113, 10/12/2009*).
25. V. C. Papadimitriou, R. W. Portmann, D. W. Fahey, J. Mühle, R. F. Weiss, and J. B. Burkholder, "An Experimental and Theoretical Study of the Atmospheric Chemistry and Global Warming Potential of SO₂F₂", *J. Phys. Chem. A*, **2008**, *112*, 12657
26. V. G. Stefanopoulos, V. C. Papadimitriou, Y.G. Lazarou, and P.Papagiannakopoulos, "Absolute Rate Coefficient Determination and Reaction Mechanism Investigation for the Reaction of Cl Atoms with CH₂I₂ and the Oxidation Mechanism of CH₂I Radicals", *J. Phys. Chem. A*, **2008**, *112*, 1526

27. V. C. Papadimitriou, R. K. Talukdar, R. W. Portmann, A. R. Ravishankara and J. B. Burkholder, "CF₃CF=CH₂ and CF₃CF=CHF: Temperature Dependent OH Rate Coefficients and Global Warming Potentials", *Phys. Chem. Chem. Phys.*, **2008**, *10*, 808
28. V. C. Papadimitriou, D. K. Papanastasiou, V. G. Stefanopoulos, A. M. Zaras, Y. G. Lazarou and P. Papagiannakopoulos "Determination of the Kinetics and Mechanistic Investigation for the Reactions of Cl Atoms with CF₃CH₂CH₂OH, CF₃CF₂CH₂OH, CHF₂CF₂CH₂OH, and CF₃CHF₂CH₂OH", *J. Phys. Chem. A*, **2007**, *111*, 11608
29. G. Kovács, T. Szász-Vadász, V. C. Papadimitriou, S. Dóbbé*, T. Bérces and F. Márta, "Absolute rate constants for the reactions of OH radicals with CH₃CH₂OH, CF₂HCH₂OH and CF₃CH₂OH", *React. Kinet. Catal. Lett.* **2005**, *87*, 129
30. V. C. Papadimitriou, K. G. Kamnaris, Y.G. Lazarou and P. Papagiannakopoulos, "Kinetic Study for the Reactions of Several Hydrofluoroethers with Chlorine Atoms", *J. Phys. Chem. A*, **2004**, *108*, 2666
31. V. C. Papadimitriou, A. Prosmiris, Y.G. Lazarou, and P. Papagiannakopoulos, "Absolute Reaction Rates of Chlorine Atoms with CF₃CH₂OH, CHF₂CH₂OH, and CH₂FCH₂OH", *J. Phys. Chem. A*, **2003**, *107*, 3733
32. Y.G. Lazarou, V. C. Papadimitriou, A.V. Prosmiris and P. Papagiannakopoulos, "Thermochemical Properties for Small Halogenated Molecules Calculated by the Infinite Basis Extrapolation Method", *J. Phys. Chem. A*, **2002**, *106*, 11502
33. A. Prosmiris, V. Papadimitriou, J. Pola, and P. Papagiannakopoulos, "Kinetic Study for the Reactions of Chlorine Atoms with Hexamethyldisiloxane, 1,1,3,3-Tetramethyldisiloxane, and 1,3-Dimethyldisiloxane", *Chem. Phys. Lett.*, **2001**, *344*, 241
34. Y.G. Lazarou, A.V. Prosmiris, V. C. Papadimitriou, and P. Papagiannakopoulos, "Theoretical Calculation of Bond Dissociation Energies and Enthalpies of Formation for Halogenated Molecules", *J. Phys. Chem. A*, **2001**, *105*, 6729
35. J. Kupcik, Z. Bastl, J. Subrt, J. Pola, V. Papadimitriou, A. Prosmiris, and P. Papagiannakopoulos, "IR Laser-induced Decomposition of Hexamethyldisiloxane for Chemical Vapour Deposition of Nano-structured Hydro(methyl)silicone Powders", *J. Anal. Applied Pyrolysis*, **2001**, *57*, 109

STATISTICS:

h-index: 13, i10-index: 14, Citations: 687

In Preparation:

36. M. E. Angelaki, J. B. Burkholder and V. C. Papadimitriou, "Atmospheric Chemistry of (E)-(CF₃)₂CFCH=CHF: Temperature and Pressure Dependent Cl Reaction Rate Coefficients and Product Yields", submitted *J. Phys. Chem. A*, **2019**
37. M. E. Angelaki, V. Gaudion, A. Tomas, M. N. Romanias, J. B. Burkholder and V. C. Papadimitriou, "Atmospheric Chemistry of C₄H₄O (furan): Temperature Dependent Cl Reaction Rate Coefficients at Atmospheric and Very Low-Pressure Conditions", submitted *J. Phys. Chem. A*, **2019**
38. M. E. Angelaki, Y-G. Ren, M. R. McGillen, V. Daële, A. R. Ravishankara, A. Mellouki and V. C. Papadimitriou, "Atmospheric Chemistry of CHF₂CH=CF₂: OH and NO₃ radicals, Cl-

- atoms and O₃ kinetics and Intermediate and end-oxidation products investigation”, *Phys. Chem. Chem. Phys.*, **2020**
39. V. C. Papadimitriou, D. K. Papanastasiou, and J. B. Burkholder, “Atmospheric Chemistry of Furfural, Part A: UV and Infrared absorption spectra and 248 and 254 nm photolysis of furfural and Product Yields”, *J. Quant. Spectrosc. RA*, **2020**
40. V. C. Papadimitriou, D. K. Papanastasiou, and J. B. Burkholder, “Atmospheric Chemistry of Furfural, Part B: Furfural photolysis at actinic wavelengths, 310 – 330 nm and Product Yields”, *J. Quant. Spectrosc. RA*, **2020**
41. G. S. Antonopoulou, J. B. Burkholder and V. C. Papadimitriou, “Atmospheric Reactivity and Fluorination Impact of Unsaturated Compounds: Kinetic and Mechanistic Study for the Gas-Phase Reaction of Cl Atoms, with the Simplest Fluorinated Olefins, CH₂=CFX (X: H, F)”, *J. Phys. Chem. A*, **2020**

PARTICIPATION IN INTERNATIONAL CONFERENCES:

1. **AGU Fall Meeting**, 9-13 December **2019**, San Francisco, CA, USA.
Presentation: 35. A. Chattopadhyay, 2019, **A42F-05:** Atmospheric chemistry of maleic anhydride (C₄H₂O₃): OH radical and Cl atom reaction rate coefficients and degradation mechanism.
2. **Le Studium Conferences**, 28 June **2019**, Orleans, France, “Climate, air quality, and health: Long-term goals and short-term actions”
3. **ICCK, 11th International Conference on Chemical Kinetics**, 23-27 June **2019**, Orleans, France., N. Osseiran, M.N. Romanias, V. Gaudion, M. Angelaki, V.C. Papadimitriou, A. Tomas, F. Thevenet, P. Coddeville, 2019, “Development and Validation of a Teflon Thermal Regulated Atmospheric Simulation Chamber (THALAMOS). A Versatile Tool for the Study of Atmospheric Relevant Processes”.
4. **AGU Fall Meeting**, 14-18 December **2015**, San Francisco, CA, USA.
Presentation: Papadimitriou, V. C. and Burkholder, J. B., 2015, **A43G-0398:** (CF₃)₂CFCH=CHF (HFO-1438ezy): OH Radical Rate Coefficient, Infrared Spectrum Measurements and Estimated Global Warming Potentials and Photochemical Ozone Creation Potential.
5. **Transparent Conductive Materials 2014 (TCM 2014)**, 12-17 October **2014**, Platanias-Chania, Crete, Greece.
Invited Speaker: “Photocatalytic degradation of air pollutants over synthesized metal-doped TiO₂ nanopowders: Kinetics, mechanism and end-products analysis.”
6. **AGU Fall Meeting**, 09-13 December **2013**, San Francisco, CA, USA.

- Presentation:** Papadimitriou, V. C., McGillen, M. R., Smith, S. C., Jubb, A. M., Portmann, R. W., Hall, B. D., Fleming, E. L., Jackman, C. H. and Burkholder, J. B., 2013, 1,2-dichlorohexafluoro-cyclobutane (1,2-c-C₄F₆Cl₂, R-316c) a Potent Ozone Depleting Substance and Greenhouse Gas: Atmospheric Loss Processes, Lifetimes, and Ozone Depletion and Global Warming Potentials for the (E)- and (Z)- Stereoisomers, **Abstract A23F-0366**
7. **22nd International Symposium on Gas Kinetics**, 18th - 22nd June **2012**, Boulder, Colorado, USA., **Chairman of Heterogeneous Chemical Processes Session**
Presentation: "Atmospheric Chemistry of Allyl Halides: Temperature and Pressure Dependent Rate Coefficients for the Gas Phase Reactions of OH Radicals and Cl Atoms with X-CH₂CH=CH₂ (X: Cl, Br, I)"
Presentation: "Kinetics and Mechanism Investigation for Carboxylic Acids (R-C(O)OH, R: -CH₂CH₃, -CH₂CH₂CH₃) Uptakes on Pure and HNO₃-Doped Ice Surfaces under UT/LS Temperature Conditions."
8. **AGU Fall Meeting**, 14-18 December **2008**, San Francisco, CA, USA.
Presentation: D. K. Papanastasiou, V. C. Papadimitriou, J. B. Burkholder, **2008**, Laboratory Study of the UV Absorption Spectrum of the ClO Dimer (Cl₂O₂), **Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract A21C-0190**
9. **AGU Fall Meeting**, 10-14 December **2007**, San Francisco, CA, USA.
Presentation: J. B. Burkholder, V. C. Papadimitriou, R. K. Talukdar, R. Portmann and A. R. Ravishankara, **2007**, CF₃CF=CH₂ and CF₃CF=CHF: Temperature Dependent OH Rate Coefficients and Global Warming Potentials, **Abstract A43A-0875**
10. **20th International Symposium on Gas Kinetics**, 20th - 25th July **2008**, Manchester, UK
Presentation: "Pressure Dependent Rate Coefficients for the Cl + CF₃CF=CH₂ and (Z)-CF₃CF=CHF Reactions between 207 - 308 K"
11. **AGU Fall Meeting**, 10-14 December **2007**, San Francisco, CA, USA.
Presentation: "CF₃CF=CH₂ and CF₃CF=CHF: Temperature Dependent OH Rate Coefficients and Global Warming Potentials"
12. **"2nd Annual Meeting of Laboratory Activity of SCOUT Project"** March **2006**, Jülich, Germany. **Presentation:** "Heterogeneous interactions of HNO₃, HO₂ and CH₃C(O)CH₃ with ice surfaces: An experimental and theoretical study"
13. **"18th Months Meeting of Laboratory Activity of SCOUT Project"**, Mainz, Germany, October **2005**. **Presentations:** "Uptake experiments of HNO₃ on ice surfaces", "Ab-initio calculations for HNO₃-(H₂O)_n and HNO₃-(H₂O)_n complexes, n=1-3".
14. **"1st Annual Meeting of Laboratory Activity of SCOUT Project"**, Zürich, Switzerland, March **2004**. **Presentation:** "Trace Gases Uptake to Ice"
15. **"18th International Symposium on Gas Kinetics"**, University of Bristol, Bristol, UK, July **2004**. **Presentation:** "Absolute rate determination and mechanistic analysis for the reaction of Chlorine atoms with Di-Iodomethane"
16. **"International Quadrennial Ozone Symposium"**, Kos, Greece, June **2004**. **Presentations:** "Rate constant and reaction mechanism for the reaction of CH₂I₂ with Cl atoms" and "Kinetic and mechanistic investigation study for the reactions of Chlorine atoms with a series of Fluorinated Alcohols in the gas phase".

17. **"EGS, AGU, EUG Joint Assembly: Atmospheric Sciences Session"**, Nice, France, April **2003**. **Presentations:** "Tropospheric reactivity of fluorinated ethers and alcohols" and "Reaction rates and chemical mechanism for the reaction of Cl atoms with CH₂I₂"
18. **"17th International Symposium on Gas Kinetics"**, University of Essen, Essen, Germany, August **2002**. **Presentation:** "Kinetics and theoretical studies for the reaction of Cl atoms with fluoroalcohols"
19. **"Third Nordic Symposium on Gas Kinetics and Atmospheric Chemistry"**, University of Copenhagen, Elsinor, Denmark, June **2002**. **Presentation:** "Impact of Alternative Fluorinated Alcohols and Ethers on the Environment"
20. **"Eurotrac2 Symposium 2002"**, Garmisch-Partenkirchen, Germany, March **2002**. **Presentation:** "Impact of Alternative Fluorinated Alcohols and Ethers on the Environment - a Laboratory and Modelling Study". **"10th Scientific Conference of the International Association of Meteorology of Atmospheric Sciences (IAMAS) Commission for Atmospheric Chemistry and Global Pollution (CACGP) and 7th Scientific Conference of the International Global Atmospheric Chemistry Project (IGAC)"**, Hersonissos Heraklion, Greece, September **2002**. **Presentation:** "The Contribution of Electronic Structure Calculations in the Modeling of Chemical Reactions in the Atmosphere".
22. **"The 8th European symposium on the physico-chemical behaviour of atmospheric pollutants"**, Torino, Italy, September **2001**. **Presentations:** "Impact of Alternative Fluorinated Alcohols and Ethers on the Environment" and "Kinetic and Theoretical study for the Reactions of Cl Atoms with Fluoroalcohols"
23. **"First Nordic Symposium on Gas Kinetics"**, University of Copenhagen, Elsinor, Denmark, June **2000**. **Presentation:** "Kinetic Studies for the Reactions of Chlorine Atoms with Hexamethyldisiloxane, 1,1,3,3-Tetramethyldisiloxane, and 1,3-Dimethyldisiloxane"
24. **"16th International Symposium on Gas Kinetics"**, University of Cambridge, Cambridge, UK, July **2000**. **Presentation:** "Kinetics and mechanism for the reaction of D Atoms with Iodomethane and Chlorodomethane"
25. **"Alternatives to Methylbromide for the Southern European Countries"** Agriculture Ministry of Greece & the European Commission DGXI, Heraklio, December **1999**.
26. **"Chemistry and Radiation Changes in the Ozone Layer"** University of Thessaloniki, Colibari, Chania, May **1999**. **Presentation:** "Kinetic Studies for the Reaction of CH₂Cl with D Atoms" and "Kinetic Studies for the Reaction of CH₃Br with D Atoms"

REFERENCES:

Dr. James B. Burkholder

Address: Earth System Research Laboratory, Chemical Sciences Division, National Oceanic and Atmospheric Administration, 325 Broadway, Boulder, CO 80305, USA

e-mail: James.B.Burkholder@noaa.gov

tel.: +1 (303) 497 3252

Dr. David W. Fahey

Address: Earth System Research Laboratory, Chemical Sciences Division, National Oceanic and Atmospheric Administration, 325 Broadway, Boulder, CO 80305, USA

e-mail: David.W.Fahey@noaa.gov

tel.: +1 (303) 497 5277

Prof. A. R. Ravishankara (CSU, CO, USA and Guest Prof. in CNRS-ICARE Orleans)

Address: Department of Atmospheric Science, Colorado State University, Fort Collins

e-mail: A.R.Ravishankara@colostate.edu

tel.: +1 (970) 491 2876

Dr. Ranajit K. Talukdar

Address: Chemical Sciences Division, Earth System Research Laboratory, National Oceanic and Atmospheric Administration (NOAA), R/CSD2, 325 Broadway, Boulder, CO 80305-3328, USA

e-mail: Ranajit.K.Talukdar@noaa.gov

tel: +1 (303) 497 5825

Prof. Panos Papagiannakopoulos

Address : Department of Chemistry, University of Crete, Vasilika Vouton, 71003 Heraklion, Crete, Greece

e-mail: panosp@chemistry.uoc.gr

tel: +30 2810 5450 31

Prof. Euripidis Stefanou

Address : Department of Chemistry, University of Crete, Vasilika Vouton, 71003 Heraklion, Crete, Greece

e-mail: stefanou@chemistry.uoc.gr

tel: +30 2810 5450 28

Prof. Nikos Mihalopoulos

Address : Department of Chemistry, University of Crete, Vasilika Vouton, 71003 Heraklion, Crete, Greece

e-mail: mihalo@chemistry.uoc.gr

tel: +30 2810 5450 62

Prof. Maria Kanakidou

Address : Department of Chemistry, University of Crete, Vasilika Vouton, 71003 Heraklion, Crete, Greece

e-mail: mariak@chemistry.uoc.gr

tel: +30 2810 5450 33

tel: +30 2810 3914 67

Prof. Spyros Pandis

Address : Department of Chemical Engineering, University Campus, GR-26504, Patras, Greece **e-mail:** spyros@chemeng.upatras.gr

tel: + 30 2610 9695 10