

Curriculum Vita: Veronica Vaida

Department of Chemistry & Biochemistry and
Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder,
CO 80309-0215

Educational Background:

Post-Doctoral Xerox Research Fellow, 1977-1979

Department of Chemistry, Harvard University

Ph.D. 1977 Department of Chemistry 1973-1977 Yale University

B. S. 1973 Chemistry 1970-1973 Brown University

Universitatea Bucuresti, Bucuresti, Romania 1968-1970

Employment:

CIRES Fellow, University of Colorado since 2000

Professor, Chemistry and Biochemistry, University of Colorado, Boulder since 1990

Associate Professor, Chemistry, University of Colorado, Boulder 1984-1990

Assistant and Associate Professor, Chemistry, Harvard University 1979-1984

Honors and Awards:

ACS Irving Langmuir Award in Chemical Physics

American Academy of Arts and Sciences fellow 2012

College Scholar Award, University of Colorado 2011

E. Bright Wilson ACS award in Spectroscopy 2011

Boulder Faculty Assembly Excellence in Research, Scholarly and Creative Work 2011

Sigma Xi Distinguished Lecturer 2007-2008

American Physical Society (APS) Fellow since 2004

American Association for the Advancement of Science (AAAS) Fellow since 2004

John Simon Guggenheim Memorial Foundation Fellow 2004-2005

Radcliffe Institute for Advanced Study at Harvard Fellow 2004-2005

CU Faculty Fellowship 1997-1998 and 2004-2005

Erskine Fellowship, University of Canterbury, New Zealand 1994

Camille and Henry Dreyfus Teacher Scholar 1984

A. P. Sloan Fellowship 1980

Xerox Postdoctoral Fellow, Harvard University 1977-1979

Professional Activities:

Membership in professional organizations: ACS, AGU, APS and AAAS.

APS DCP nominating committee 2010

Chair, Department of Chemistry and Biochemistry, University of Colorado 2002-2006

Visiting Scientist NCAR 1997

Coordinator: Romanian Chemical Society - ACS advisory group 1995

NSF-Hungarian Academy of Sciences Review Committee 1992

NRC Committee on Potential Applications of Concentrated Solar Photons 1990-1991

ACS Executive Committee of the Division of Physical Chemistry (1991-1993), (2007-2010), International Activities Committee (2010-)

Editorial Advisory Boards: (The Journal of Physical Chemistry 1987-1989,

Spectrochimica Acta 1992- 2000, ACS Earth and Space, Journal of Spectroscopy (open access)

NSF Advisory Committee for Chemistry 1986-1988

PUBLICATIONS IN PEER REVIEWED JOURNALS

(H =53; 58 in google scholar)

Author Identifier: N-6069-2014

PUBLICATIONS IN PEER REVIEWED JOURNALS (H = 53)

206. "Conformer Specific Photolysis of Pyruvic Acid and the Effect of Water" Blair S.L., Reed Harris A.E., Frandsen B.N., Kjaergaard H.G., Pangui E., Cazaunau M., Doussin J-F., Vaida V. *J. Phys Chem A*
DOI: 10.1021/acs.jpca.9b10613

205. "Gas Phase Reaction Kinetics of Pyruvic Acid with OH Radicals: The Role of Tunneling, Complex Formation and Conformational Structure" Church J.R., Vaida V., Skodje R.T. *J. Phys. Chem. A*
DOI: 10.1021/acs.jpca.9b09638

204. "Chemistry and Photochemistry of Pyruvic Acid Adsorbed on Oxide Surfaces" Alves M. R., Fang Y., Wall K. J., Vaida V., Grassian V.H. *J. Phys. Chem A* **123**(35), 7661-7671 (2019)
DOI:10.1021/acs.jpca.9b06563

203. "Heterogeneous Interactions between Gas-Phase Pyruvic Acid and Hydroxylated Silica Surfaces: A Combined Experimental and Theoretical Study" Fang, Yuan; Lesnicki, Dominika; Wall, Kristin J.; Gaigeot, Marie-Pierre; Sulpitzi, Marialore; Vaida, Veronica; Grassian, Vicki H. *J. Phys. Chem. A* **123**(5), 983-991 (2019)
DOI:10.1021/acs.jpca.8b10224

202. "Reactivity of Electronically Excited SO₂ with alkanes" Jay A. Kroll, Benjamin A Frandsen, Rebecca J. Rapf, Henrik J. Kjaergaard, Veronica Vaida *J. Phys. Chem. A* **122**(39), 7782-7789 (2018) DOI: 10.1021/acs.jpca.8b04643
201. "Atmospheric Hydroxyl Radical Source: Reaction of Triplet SO₂ and Water" Jay A. Kroll, Benjamin N. Frandsen, Henrik G. Kjaergaard, Veronica Vaida *J. Phys. Chem. A* **122**(18), 4465-4469 (2018) DOI: 10.1021/acs.jpca.8b03524
200. "Environmental Processing of Lipids Driven by Aqueous Photochemistry of α -Keto Acids" Rebecca J. Rapf, Russell J. Perkins, Michael R. Dooley, Jay A. Kroll, Barry K. Carpenter, Veronica Vaida *ACS Cent. Sci.* **4**(5), 624-630 (2018) DOI: 10.1021/acscentsci.8b00124
199. "Prebiotic phosphorylation enabled by microdroplets" Veronica Vaida *Proceedings of the National Academy of Sciences* **114**(47), 12359-12361 (2017)
198. "Atmospheric Simulation Chamber Studies of the Gas-Phase Photolysis of Pyruvic acid" [Reed Harris, Allison Early](#); [Cazaunau, Mathieu](#); [Gratien, Aline](#); [Pangui, Edouard](#); [Doussin, Jean-Francois](#), Vaida, Veronica *J. Phys. Chem. A* **121**, 8348-8358 (2017) DOI:10.1021/acs.jpca.7b05139
197. "pH Dependence of the Aqueous Photochemistry of α -Keto Acids" Rebecca J. Rapf, Michael R. Dooley, Keaten Kappers, Russell J. Perkins, Veronica Vaida *J. Phys. Chem. A* **121**, 8368-8379 (2017) DOI:10.1021/acs.jpca.7b08192
196. "Comment on Reactivity of Ketyl and Acetyl Radicals from Direct Solar Actinic Photolysis of Aqueous Pyruvic Acid" V. Vaida, A.E. Reed Harris, R. J. Rapf, R. J. Perkins, B. K. Carpenter *J. Phys. Chem. A* **121**(41), 8738-8740 (2017) DOI:10.1021/acs.jpca.7b06018
195. "Phenylalanine Increases Membrane Permeability" Russell J. Perkins, Veronica Vaida *J. Am. Chem. Soc.* **139**(41), 14388-14391 (2017) DOI: [10.1021/jacs.7b09219](#)
194. "Ultraviolet Spectroscopy of the Gas Phase Hydration of Methylglyoxal" Kroll, J.A., Hansen A.S., Moller K.H., Axson J.L., Kjaergaard H. G., Vaida V. *ACS Earth and Space Chemistry* **1**(6) 345-352 (2017) DOI:10.1021/acsearthspacechem.7b00054
193. "Photochemical synthesis of oligomeric amphiphiles from alkyl oxoacids in aqueous environments" Rebecca J. Rapf, Russell J. Perkins, Haishen Yang, Garret M. Miyake, Barry K. Carpenter, Veronica Vaida *J. Am. Chem. Soc.* **139** (20), 6946-6959 (2017) DOI: 10.1021/jacs.7b01707
192. "Mechanistic description of photochemical oligomer formation from aqueous pyruvic acid" Rebecca J. Rapf, Russell J. Perkins, Barry K. Carpenter, Veronica Vaida *J. Phys. Chem. A* **121**, 4272-4282 (2017) DOI: 10.1021/acs.jpca.7b03310
191. "Multiphase Photochemistry of Pyruvic Acid Under Atmospheric Conditions" [Reed Harris, Allison Early](#); [Pajunoja, Aki](#); [Cazaunau, Mathieu](#); [Gratien, Aline](#); [Pangui, Edouard](#); [Monod, Anne](#); Griffith Elizabeth Campbell; [Virtanen, Annele](#); [Doussin, Jean-Francois](#); Vaida, Veronica *The Journal of Physical Chemistry. A* **121** (18) 3327-3339, (2017) DOI:10.1021/acs.jpca.7b01107

190. "Chemical Equilibria and Kinetics in Aqueous Solution of Zymonic Acid" Russell J. Perkins, Richard K. Shoemaker, Barry K. Carpenter, Veronica Vaida *The Journal of Physical Chemistry A* **120**(51), 10096–10107 (2016)
DOI:10.1021/acs.jpca.6b10526
189. "Gas-Phase Photolysis of Pyruvic Acid: The Effect of Pressure on the Reaction Rates and Products" Allison E. Reed Harris, Jean-Francois Doussin, Barry K. Carpenter, Veronica Vaida *The Journal of Physical Chemistry A* **120**(51), 10123-10133 (2016)
DOI:10.1021/acs.jpca.6b09058
188. "Atmospheric radical chemistry revisited; Sunlight may directly drive previously unknown organic reactions at environmental surface" Vaida, Veronica *Science* **353**(6300), 650-650 (2016)
187. "The Partitioning of Small Aromatic Molecules to Air–Water and Phospholipid Interfaces Mediated by Non-Hydrophobic Interactions" Russell J. Perkins, Alexandra Kukharchuk, Pauline Delcroix, Richard K. Shoemaker, Martina Roeselová, Lukasz Cwiklik, and Veronica Vaida *J. Phys. Chem. B*, **120**, 7408–7422 (2016) DOI: 10.1021/acs.jpca.6b05084
186. "Gas-phase hydrolysis of triplet SO₂: A possible direct route to atmospheric acid formation" Donaldson, D. James; Kroll, Jay A.; Vaida, Veronica *Scientific Reports* Volume: 6 Article Number: 30000 (2016)
185. "Sunlight as an energetic driver in the synthesis of molecules necessary for life" Rebecca J. Rapf, Veronica Vaida *Physical Chemistry Chemical Physics*, **18**, 20067-20084 (2016) DOI: 10.1039/C6CP00980H
184. "Intramolecular Hydrogen Bonding in Methyl Lactate" Schroder SD., [Wallberg, JH](#), [Kroll, JA](#), [Maroun, Z](#), Vaida, V, [Kjaergaard, HG](#) *J. Phys. Chem. A* **119** (37) 9692-9702 (2015) DOI: 10.1021/acs.jpca.5b04812
183. "First Reactions: Ocean sea spray, clouds and climate" V. Vaida *ACS Central Science* 2015 DOI: 10.1021/acscentsci.5b0210
182. "Interaction of L-Phenylalanine with a Phospholipid Monolayer at the Water–Air Interface" Griffith, E. C.; Perkins, R. J.; Telesford, D.-M.; Adams, E. M.; Cwiklik, L.; Allen, H. C.; Roeselová, M.; Vaida, V. *J. Phys. Chem. B* 2015. *J. Phys. Chem. B* **119**, 9038-9048 (2015) DOI: 10.1021/jp508473w
181. "Aqueous phase oligomerization of methyl vinyl ketone by atmospheric radical reactions" Renard Pascal, Reed Harris Allison E., Rapf Rebecca J., Ravier Sylvain, Demelas Carine, Coulomb Bruno, Quivet Etienne, Vaida Veronica, Monod Anne *J. Phys. Chem C* **118**, 29421-29430 (2014) dx.doi.org/10.1021/jp5065598
180. "Photochemical kinetics of pyruvic acid in aqueous solutions" Reed Harris, Allison E., Ervens, Barbara, Shoemaker, Richard K., Kroll, Jay A., Rapf, Rebecca J., Griffith, Elizabeth C., Monod, Anne, Vaida Veronica *J. Phys. Chem. A* **118**(37), 8505-8516 (2014) doi: 10.1021/jp502186q
179. "Photoinitiated Synthesis of Self-Assembled Vesicles" Griffith, Elizabeth C., Rapf, Rebecca J., Shoemaker, Richard K., Carpenter, Barry K., Vaida, Veronica, *J. Am. Chem. Soc.* **136**(10), 3784-3787 (2014)
DOI 10.1021/ja5006256

178. "Emerging Areas in Atmospheric Photochemistry" George, C., D'Anna B., Hermann, H., Weller, C., Vaida, V., Donaldson, D. J., Bartels-Rausch, T., Ammann, M., *Atmospheric and Aerosol Chemistry* Ed. McNeill, VF; Ariya PA Book Series: *Top Curr Chem* **339**, 1-53 (2014) Springer-Verlag Berlin Heidelberg, DOI: 10.1007/128_2012_393
177. "Red-Light initiated atmospheric reactions of vibrationally excited molecules" Vaida V., Donaldson D. J. *Phys. Chem. Chem. Phys* **16** (3), 827 - 836 (2014) DOI:10.1039/C3CP53543F
176. "Sunlight-initiated Chemistry of Aqueous Pyruvic Acid: Building Complexity in the Origin of Life" Elizabeth C. Griffith, Richard K. Shoemaker, Veronica Vaida *Orig Life Evol Biosph* **43**(4-5) 341-352 (2013) DOI 10.1007/s11084-013-9349-y
175. "Reply to Eugene et al.: Photochemistry of aqueous pyruvic acid" Griffith, Elizabeth C.; Carpenter, Barry K.; Shoemaker, Richard K.; Vaida, Veronica *Proc. Natnl. Acad. Sci.* **110** (46), E4276-E4276 (2013) DOI: 10.1073/pnas.13163671100
174. "Intramolecular Interactions in 2-Aminoethanol and 3-Aminopropanol" Thomsen D. L., Axon J. L., Schroder S. D., Lane J. R., Vaida V., Kjaergaard H. G. *J. Phys. Chem. A* **117**, 10260-10273 (2013) dx.doi.org/10.1021/jp405512y
173. "Oxidized Aromatic-Aliphatic Mixed Films at the Air-Aqueous Solution Interface" Elizabeth C. Griffith, Teobaldo R. C. Guizado, Andre S. Pimentel, Geoffrey S. Tyndall, Veronica Vaida *J. Phys. Chem A* **117**(43), 22341-22350 (2013)
172. "Photochemistry of aqueous pyruvic acid" Griffith, E. C., Carpenter, B. K., Shoemaker, R. K., Vaida, V. *Proc. Natnl. Acad. Sci.* **110**(29), 11714–11719 (2013) doi/10.1073/pnas.1303206110
171. "Acetic acid formation via the hydration of gas-phase ketene under ambient conditions" Kahan, T. F., Ormond, T. K., Ellison, G. B., Vaida, V. *Chem. Phys. Letts.* **565**, 1-4 (2013) doi: 10.1016/j.cplett.2013.02.030
170. "Ionization state of L-Phenylalanine at the Air–Water Interface" Griffith, E. C. and Vaida, V. *J. Am. Chem. Soc* **135**(2), 710–716. (2013) dx.doi.org/10.1021/ja308089n
169. "Ocean –atmosphere interactions in the emergence of complexity in simple chemical systems" Griffith, E. C., Tuck, A. F., Vaida, V. *Acc. Chem. Res.* **45**(12) 2106-2113 (2012) pubs.acs.org/doi/pdf/10.1021/ar300027q
168. "In situ observation of peptide bond formation at the water-air interface" Griffith, Elizabeth C., Vaida, Veronica *Proc. Natn. Acad. Sci* **109**(39) 15697-15701 (2012) www.pnas.org/cgi/doi/10.1073/pnas.1210029109

167. "Hydrophobic Collapse of a Stearic Acid Film by Adsorbed L-Phenylalanine at the Air-Water Interface" Griffith, Elizabeth C., Adams, Ellen, Allen, Heather C., Vaida, Veronica, *J. Phys. Chem. B* **116**(27), 7849-7857 (2012) DOI: 10.1021/jp303913e

166. "Cavity-enhanced measurements of hydrogen peroxide absorption cross sections from 353 to 410 nm" Kahan T. F., Washenfelder R. A., Vaida V., Brown S. S. *J. Phys. Chem. A* **116**(24) 5941-5947 (2012)
doi: 10.1021/jp2104616

165. "Near Infrared photochemistry of pyruvic acid in aqueous solution" Larsen M. C., Vaida V. *J. Phys. Chem. A* **116**(24), 5840-5846 (2012)
doi:10.1021/jp2087972

164. "Will water act as a photocatalyst for cluster phase chemical reactions? Vibrational overtone-induced dehydration reaction of methanediol" Kramer Z. C., Takahashi K., Vaida V. and Skodje R. T. *J. Chem. Phys.* **136**, 164302 (2012);
<http://dx.doi.org/10.1063/1.4704767>

163. "Absolute ozone absorption cross section in the Huggins Chappuis minimum (350–470 nm) at 296K" Axson J. L., Washenfelder R. A., Kahan T. E., Young C. J., Vaida V., Brown S. S., *Atmos. Chem. Phys.* **11**, 11581-11590 (2011)
doi:10.5194/acp-11-11581-2011

162. "Hydration of pyruvic acid to its gemina-diol, 2,2-dihydroxypropanoic acid, in a water-restricted environment" Maron M. K., Takahashi K., Shoemaker R. K., Vaida V. *Chem. Phys. Lett.* **513**, 184-190 (2011)
doi:10.1016/j.cplett.2011.07.090

161. "Perspective: Water cluster mediated atmospheric chemistry" Vaida, V., *J. Chem. Phys.* **135**(2) Art. Nr. 020901 (2011)
doi: 10.1063/1.3608919

160. "Overtone spectra of 2-Mercaptoethanol and 1,2-Ethanedithiol" Miller B. J., Yekutieli M., Sodergren A. H., Howard D. L. Dunn M. E., Vaida V., Kjaergaard H. G. *J. Phys. Chem. A* **114** (48) 12692-12700 (2010)

159. "Red sky at night: long-wavelength photochemistry in the atmosphere" Donaldson, D. J., George, C., Vaida, V. *Environ. Sci. Technol.* **44**(14) 5321-5326 (2010)

158. "Dynamics and spectroscopy of vibrational overtone excited glyoxylic acid and 2,2-dihydroxyacetic acid in the gas-phase" Kaito Takahashi, Kathryn L. Plath, Jessica L. Axson, Galen C. Nelson, Rex T. Skodje, and Veronica Vaida *J. Phys. Chem A* **132**, 094305 (2010)

157. "Atmospheric Chemistry Special Feature: Gas-phase water-mediated equilibrium between methylglyoxal and its geminal diol" Jessica L. Axson, Kaito Takahashi, David O. De Haan, and Veronica Vaida *PNAS* **107**(15) 6687-6692 (2010)
doi:10.1073/pnas.0912121107

156. "S-H stretching vibrational spectra of ethanethiol and tert-butylthiol" B. J. Miller, D. L. Howard, J. R. Lane, H. G. Kjaergaard, M. E. Dunn and V. Vaida *J. Phys. Chem. A*, **113**, 7576-7583 (2009)
155. "Fundamental and overtone vibrational spectra of gas-phase pyruvic acid" K. L. Plath, K. Takahashi, R. T. Skodje and V. Vaida *J. Phys. Chem. A* **113**, 7294-7303 (2009)
154. "Characterization of the nitric acid water complex in the infrared and near-infrared region at ambient temperatures in carbon tetrachloride" M. K. Maron, M. J. Shultz and V. Vaida *Chem. Phys. Lett.* **473**, 268-273 (2009)
153. "Gas-phase vibrational spectra of glyoxilic acid and its gem diol monohydrate. Implications for atmospheric chemistry." K. L. Plath, J. L. Axson, G. C. Nelson, K. Takahashi, R. T. Skodje and V. Vaida *React. Kinet. Catal. Lett.* **96**(2), 209-224 (2009)
152. "Spectroscopy of Photoreactive Systems: Implications for Atmospheric Chemistry" V. Vaida *J. Phys. Chem. A* **113**(1), 5-18 (2009)
151. "Sunlight initiated photochemistry: excited vibrational states of atmospheric chromophores" V. Vaida, K. J. Feierabend, N. Rontu, K. Takahashi *Int. J. Photoenergy* Article Number 138091 (2008)
150. "The Dynamics of Vibrational Overtone Excited Pyruvic Acid in the Gas Phase: line broadening through hydrogen-atom chattering" K. Takahashi, K. L. Plath, R. T. Skodje and V. Vaida *J. Phys. Chem A* **112** (32) 7321-7331 (2008)
149. "Experimental and theoretical study of the OH vibrational spectra and overtone chemistry of gas-phase vinylacetic acid" M. E. Dunn, G. C. Shields, K. Takahashi, R. T. Skodje and V. Vaida *J. Phys. Chem. A* **112**(41) 10226-10235 (2008)
148. "On geoengineering with sulphate aerosols in the tropical upper troposphere and lower stratosphere" A. F. Tuck, D. J. Donaldson, M. H. Hitchman, E. C. Richard, H. Tervahattu, V. Vaida, J. C. Wilson *Climatic Change* **90**(3), 315-331 (2008) DOI 10.1007/S10584-008-9411-3
147. "Calculated electronic transitions of the water ammonia complex" J. R. Lane, V. Vaida, and H. G. Kjaergaard *J. Chem. Phys.* 128, 034302 (2008) doi:10.1063/1.2814163
146. "Vibrational Spectroscopy of Perfluorocarboxylic Acids from the Infrared to the Visible Regions" N. Rontu and V. Vaida *J. Phys. Chem. B* **112**(2), 276-282 (2008)
145. "Photodissociation yields for vibrationally excited states of sulfuric acid under atmospheric conditions" Y. Miller, R. B. Gerber and V. Vaida *Geophys. Res. Lett.* **34**(16), L16820, doi:10.1029/2007GL030529 (2007)
144. "Surface partitioning and stability of pure and mixed films of 8-2 fluorotelomer alcohol at the air-water interface" N. Rontu and V. Vaida *J. Phys. Chem. C* **111**, 11612-11618 (2007)

143. "Vibrational overtone induced elimination reactions within hydrogen-bonded molecular clusters: the dynamics of water catalyzed reactions in $\text{CH}_2\text{FOH}(\text{H}_2\text{O})_n$ " K. Takahashi, Z. C. Kramer, V. Vaida and R. T. Skodje *Phys. Chem. Chem. Phys.* **9(29)**, 3864-3871 (2007)
142. "Miscibility of Perfluorododecanoic Acid with Organic Acids at the Air-Water Interface" Rontu, N.; Vaida, V. *J. Phys. Chem. C* **111(27)** 9975-9980 (2007)
141. "Overtone spectroscopy of sulfonic acid derivatives" J.R. Lane, H. G. Kjaergaard, K. L. Plath and V. Vaida *J. Phys. Chem. A* **111**, 5434-5440 (2007)
140. "Interfacial properties of mixed films of long-chain organics at the air-water interface" Gilman JB, Tervahattu H, and Vaida V *Atmospheric Environment* **40** (34): 6606-6614 (2006)
139. "Molecular complexes in close and far away" W. Klemperer and V. Vaida *PNAS* **103** (28): 10584-10588 (2006)
138. "Permeability of Acetic Acid through Organic Films at the Air-Aqueous Interface" J. B. Gilman and V. Vaida *J. Phys. Chem. A* **110**, 7581-7587 (2006)
137. "Experimental and Theoretical Investigation of Vibrational Overtones of Glycolic Acid and Its Hydrogen Bonding Interactions with Water" D. K. Havey, K. J. Feierabend, K. Takahashi, R. T. Skodje and V. Vaida *J. Phys. Chem. A* **110** (20) : 6439-6446 (2006)
136. "Vibrational spectroscopy of perfluoropropionic acid in the region between 1000-11000 cm^{-1} " N. Rontu, V. Vaida *J. Mol. Spectrosc.* **237** (1): 19-26 (2006)
135. "The influence of organic films at the air-aqueous boundary on atmospheric processes" D. J. Donaldson, V. Vaida *Chem. Rev.* **106** (4): 1445-1461 (2006)
134. "A comparison of experimental and calculated spectra of HNO_3 in the near-infrared using Fourier transform infrared spectroscopy and vibrational perturbation theory" K. J. Feierabend, D. K. Havey, M. E. Varner, J. F. Stanton, V. Vaida *J. Chem. Phys.* **124** (12): Art. No. 124323 (2006)
133. "Experimental absolute intensities of the $4\nu_9$ and $5\nu_9$ O-H stretching overtones of H_2SO_4 " K. J. Feierabend, D. K. Havey, S. S. Brown, V. Vaida *Chem. Phys. Lett.* **420**, 443-447 (2006)
132. "Temperature-dependent infrared spectra of torsional vibrations in acetic acid" D.K. Havey, K.J. Feierabend, J.C. Black and V.Vaida *J.Mol.Spec.* **229(2)**, 151-157 (2005)
131. "Gas phase infrared spectroscopic observation of the organic acid dimers $\text{CH}_3(\text{CH}_2)_6\text{COOH}$, $\text{CH}_3(\text{CH}_2)_7\text{COOH}$, and $\text{CH}_3(\text{CH}_2)_8\text{COOH}$ " T.L. Eliason, D.K. Havey and V.Vaida *Chem. Phys. Lett.* **402(1-3)**, 239-244 (2005)
130. "Fatty acids on continental sulfate aerosol particles" H.Tervahattu, J.Juhanoja, V.Vaida, A.F.Tuck, J.V.Niemi, K.Kupiainen, M.Kulmala, H.Vehkamaki *J. Geophys. Res. Atm.* **110**, (D6) Art. No. D06207, doi:10.1029/2004JD005400 (2005)

129. "Photolysis of sulfuric acid vapor by visible light as a source of the polar stratospheric CN layer" M.J.Mills, O.B.Toon, V.Vaida, P.E.Hintze, H.G.Kjaergaard, D.P.Schofield, T.W.Robinson *J. Geophys. Res. Atm.* **110**, (D8) Art. No. D08201, doi:10.1029/2004/JD005519 (2005)
128. "Sunlight initiated atmospheric photochemical reactions" V. Vaida *Int. J.Photoenergy* **7**, 61-70 (2005)
127. "High-resolution spectroscopy of H₂SO₄, HDSO₄, and D₂SO₄ vapor in the region 1200cm⁻¹ to 10000cm⁻¹" P.E. Hintze, K.J. Feierabend, D.K. Havey and V.Vaida *Spectrochimica Acta A* **61(4)**, 559-566 (2005)
126. "Oxidation of organic films relevant to atmospheric aerosols" T.L. Eliason, J.B. Gilman and V. Vaida *Atmos. Environ* **38(9)** 1367-1378 (2004)
125. "Organic aerosols and the origin of life: An hypothesis" D.J. Donaldson, H. Tervahattu, A.F. Tuck and V. Vaida *OLEB* **34**,(1-2), 57-67, (2004)
124. "Kinetics and products of the reaction of gas-phase ozone with anthracene adsorbed at the air-aqueous interface" B.T. Mmereki, D.J. Donaldson, J.B. Gilman, T.L. Eliason and V. Vaida *Atmos. Environ* **38(36)**, 6091-6103 (2004)
123. "Ab initio study of H₂SO₄ rotamers" D.K. Havey, K.J. Feierabend and V.Vaida *J. Mol. Struct. (THEOCHEM)* **680**(1-3), 243-247 (2004)
122. "Gas phase spectroscopy of HNO₃ in the region 2000-8500cm⁻¹" K.J. Feierabend, D.K. Havey and V.Vaida *Spectrochim. Acta Part A* **60**(12), 2775-2781 (2004)
121. "Selectivity and stability of organic films at the air-aqueous interface" J.B. Gilman, T.L. Eliason, A. Fast and V. Vaida *J. Colloid and Interface Science* **280(1)**, 234-243 (2004)
120. "Near infrared spectroscopy of organic acids: comparing O-H and C-H oscillator frequencies and intensities" D.K. Havey and V.Vaida *J. Mol. Spec.* **228**(1), 152-159 (2004)
119. "Vapor-phase vibrational spectrum of glycolic acid, CH₂OHCOOH, in the region 2000 -8500 cm⁻¹" D.K. Havey, K.J. Feierabend and V.Vaida *J.Phys.Chem. A* **108**(42), 9069-9073 (2004)
118. "Vibrational and Electronic Spectroscopy of Sulfuric Acid Vapor" P. E. Hintze, H. G. Kjaergaard, V. Vaida and J. B. Burkholder *J. Phys. Chem. A* **107(8)**, 1112-1118 (2003)
117. "Processing of unsaturated organic acid films and aerosols by ozone" T. L.Eliason , S. Aloisio, D. J. Donaldson, , D. J. Cziczo and V. Vaida *Atmos. Environ* **37(16)**, 2207-2219 (2003)
116. "Photolysis of sulfuric acid vapor by visible solar radiation" V. Vaida, D. J. Donaldson, H. G. Kjaergaard, P. E. Hintze *Science* **299**, 1566-1568 (2003)
115. "Hydrated complexes: relevance to atmospheric chemistry and climate" V. Vaida, H. G. Kjaergaard, and K. J. Feierabend *Int. Reviews in Physical Chemistry* **22(1)**, 203-219 (2003)

114. "Atmospheric photochemistry via vibrational overtone absorption" D. J. Donaldson, A. F. Tuck and V. Vaida *Chem. Rev.* **103(12)**, 4717-4729, (2003)
113. "Complexes of importance to the absorption of solar radiation" H.G. Kjaergaard, T.W. Robinson, D.L. Howard, J.S. Daniel, J.E. Headrick and V. Vaida *J. Phys. Chem.* **107(49)**, 10680-10686, (2003)
112. "The Hydration of Formic Acid" S. Aloisio, P.E Hintze and V. Vaida *J. Phys. Chem. A* **106(2)**, 363-370 (2002)
111. "New Evidence of an Organic Layer on Marine Aerosols" H. Tervahattu, K. Hartonen, V-M. Kerminen, V. Vaida, A.F. Tuck, K. Kupiainen, P. Aarnio and T. Koskentalo, *J. Geophys. Res.* **107(D7-8)**, Art. No. 4053 (2002)
110. "The asymmetry of organic aerosol fission and prebiotic chemistry" D.J. Donaldson, A.F. Tuck and V.Vaida *OLEB* **32(3)**, 237-245, (2002)
109. "Sequential Two-Photon Dissociation of Atmospheric Water" L.M. Goss, V. Vaida, J.W. Brault and R.T. Skodje, *J. Phys. Chem. A* **105**, 70-75 (2001)
108. "Significance of Water Complexes in the Atmosphere" J.E. Headrick and V. Vaida, *Phys. Chem. Earth (C)* **26**, 479-486 (2001)
107. "Electronic Spectroscopy of Organic Acid Dimers" P.E. Hintze, S. Aloisio and V. Vaida, *Chem. Phys. Lett.* **343**, 159-165 (2001)
106. "Atmospheric absorption of near infrared and visible solar radiation by the hydrogen bonded water dimer" V. Vaida, A.F. Tuck, L.M. Goss, J.S. Daniel, and H. Kjaergaard *Q. J. Roy. Met. Soc.* **127**, 1627-1643 (2001)
105. "Spontaneous fission of atmospheric aerosol particles" D. J. Donaldson, A. F. Tuck and V. Vaida *Phys. Chem. Chem. Phys.* **3**, 5270-5273 (2001)
104. "Optical and Chemical Properties of Atmospheric Aerosols" V. Vaida, A. F. Tuck and G. B. Ellison *Phys. Chem. Earth* **25**, 195-198 (2000)
103. "Enhancement of HO_x and NO_x at High Solar Zenith Angles by Overtone-Induced Dissociation of HNO₃ and HNO₄" D. J. Donaldson, A. F. Tuck and V. Vaida *Phys. Chem. Earth* **25**, 223-227 (2000)
102. "Physicochemical Properties of Hydrated Complexes in the Earth's Atmosphere" V. Vaida and J. E. Headrick *J. Phys. Chem.* **104**, 5401-5412 (2000)
101. "Atmospheric aerosols as prebiotic chemical reactors" C. M. Dobson, G. B. Ellison, A. F. Tuck and V. Vaida *PNAS* **97**, 11864-11868 (2000)
100. "Aggregation of water molecules: Atmospheric implications" G.T. Evans and V. Vaida *J. Chem. Phys.* **113**, 6652-6659 (2000)
99. "Atmospheric Processing of Organic Aerosols" G.B. Ellison, A.F. Tuck and V. Vaida *J. Geophys. Res.* **104**, 11,633-11,641 (1999)

98. "Organic peroxy radical photolysis in the near-infrared: Effects on tropospheric chemistry" G.J. Frost, G.B. Ellison and V. Vaida *J.Phys.Chem.*, **103**, 10169-10178 (1999)
97. "Twilight observations of OH and HO₂ suggest an unknown HO_x source" P.O. Wenberg, R.J. Salawitch, D.J. Donaldson, T.F. Hanisco, E. J. Lanzendorf, K.K.Perkins, S.A. Lloyd, V.Vaida, R.S. Gao, E.J. Hints, R.C. Cohen, W.H. Swartz, T.L. Kusterer, D.E. Anderson *Geophys. Res. Lett.*, **26**, 1373-1376 (1999)
96. "Direct Absorption Spectroscopy of Water Clusters" L.M. Goss, S.W. Sharpe, T.A. Blake, J.W. Brault and V. Vaida *J. Phys. Chem* **A103**, 8620-8624 (1999)
95. "Absolute Intensities of Nitric Acid Overtones" D.J.Donaldson, J.J.Orlando, S.Amann, G.S.Tyndall, R.J.Proos, B.R.Henry and V.Vaida *J. Phys. Chem.* **102**, 5171-5174, (1998)
94. "Integrated intensities of OH vibrational overtones in alcohols" J.A. Phillips, J.J. Orlando, G.S. Tyndall and V.Vaida *Chem. Phys. Lett* **296**, 377-383 (1998)
93. "Spectroscopic Characterization of Supersonic Molecular Beams" V.Vaida, G.J.Frost, and L.M.Goss *Israel J.Chem.* **37**, 387-393 (1997)
92. "Atmospheric Radical Production by Excitation of Vibrational Overtone Absorption of Visible Light" D.J.Donaldson, G.J.Frost, K.H.Rosenlof, A.F.Tuck and V.Vaida *Geophys. Res.Lett.* **24**, 2651-2654 (1997).
91. "Measurements of high-resolution ultraviolet-visible absorption cross sections at stratospheric temperatures: Chlorine dioxide" G. J. Frost, L. M. Goss and V. Vaida, *J. Geophys. Res.* **101**, 3869-3877 (1996)
90. "Measurements of high-resolution ultraviolet-visible absorption cross sections at stratospheric temperatures: Nitrogen dioxide" G. J. Frost, L. M. Goss and V. Vaida, *J. Geophys. Res.* **101**, 3879-3884 (1996)
89. "Uptake of Chlorine Dioxide by Model Polar Stratospheric Cloud Surfaces: Ultrahigh Vacuum Studies," J. D. Graham, J. T. Roberts, L. Brown and V. Vaida, *J. Phys. Chem.* **100**, 3115-3120 (1996)
88. "Uptake of Chlorine Dioxide by Model PSC's Under Stratospheric Conditions," L. A. Brown, V. Vaida, D. R. Hanson, J. D. Graham and J. T. Roberts, *J. Phys. Chem.* **100**, 3121-3125 (1996)
87. "Photoreactivity of the Oxygen Dimer," L. A. Brown and V. Vaida, *J. Phys. Chem.* **100**, 7849-7853 (1996)
86. "The Effect of Dimers on the Temperature dependent Absorption Cross Section of Methyl Iodide" G.C.G.Waschewsky, R.Horansky and V.Vaida, *J.Phys.Chem.* **100**, 11559-11565 (1996)
85. "Fourier Transform Spectroscopy of Radicals," H. W. Rohrs, G. J. Frost, G. B. Ellison, E. C. Richard and V. Vaida, ed. I and M. Hargittai, *Adv. Molec. Str. Res.*, **I**, JAI Press Inc., Greenwich CT., pp. 157-199 (1995).

84. "Spectroscopy and Photoreactivity in Complex Environments," V. Vaida, G. J. Frost, L. A. Brown, R. Naaman and Y. Hurwitz, *Ber. Bunsenges Phys. Chem.*, **99**, 371-377 (1995).
83. "Photooxidation of CS₂ in the Near -Ultraviolet and its Atmospheric Implications," L. M. Goss, G. J. Frost, D. J. Donaldson and V. Vaida, *Geophys. Res. Lett.*, **22**, 2609-2612 (1995)
82. "The Photoreactivity of Chlorine Dioxide," V. Vaida and J. D. Simon, *Science*, **268**, 1443-1448 (1995).
81. " Atmospheric Implications of the Photolysis of the Ozone-Water Weakly Bound Complex" G. J. Frost and V. Vaida, *J. Geophys. Res.* **100**, 18,803-18,809 (1995)
80. "Comparison Between the Reactivity of Chlorine Dioxide in the Gas Phase and Water Solution," V. Vaida, K. Goudjil, J. D. Simon and B. N. Flanders, *J. Molec. Liq.*, **61**, 133-152 (1994).
79. "The Reactions of O(¹D) with CH₄ and C₃H₈ Monomers and Clusters," Y. Rudich, Y. Hurwitz, G. J. Frost, V. Vaida and R. Naaman, *J. Chem. Phys.*, **99**, 4500-4508 (1993).
78. "Direct Absorption Spectroscopy of the First Excited Electronic Band of Jet-Cooled H₂S," K. O. Lanz and V. Vaida, *Chem. Phys. Lett.*, **215**, 329-335 (1993).
77. "The Spectroscopy of OCIO in Polar Liquids," R. C. Dunn, B. N. Flanders, V. Vaida and J. D. Simon, *Spectrochim Acta*, **48A**, 1293-1301 (1992).
76. "Photoreactivity of Molecular Aggregates," V. Vaida, A. Jefferson and E. Ruhl, *Ber. Bunsenges. Phys. Chem.*, **96**, 395-399 (1992).
75. "Spectroscopy and Photochemistry of Chlorine Dioxide," V. Vaida, E. C. Richard, A. Jefferson, L. A. Cooper, R. Flesch and E. Ruhl, *Ber. Bunsenges. Phys. Chem.*, **96**, 391-394 (1992).
74. "Atmospheric and Planetary Spectroscopy," C. Chackerian, Jr., and V. Vaida, *Spectrochimica Acta*, **48A**, 1201-1202 (1992).
73. "The Direct Near Ultraviolet Absorption Spectrum of the A²A₂ ← X²B₁ Transition of Jet-Cooled Chlorine Dioxide" E. C. Richard and V. Vaida, *J. Chem. Phys.*, **94**, 153-162 (1991).
72. "The Photochemical Dynamics of the A²A₂ State of Chlorine Dioxide," E. C. Richard and V. Vaida, *J. Chem. Phys.*, **94**, 163-171 (1991).
71. "Competing Photochemical Pathways of OCIO in Polar Solutions," R. C. Dunn, E. C. Richard, V. Vaida, and J. D. Simon, *J. Phys. Chem.*, **95**, 6060-6063 (1991).
70. "Absorption Spectroscopy of Jet-Cooled CS₂: The Linear Excited State at 55,741cm⁻¹ to 60,741cm⁻¹," K. O. Lantz, V. Vaida and D. J. Donaldson, *Chem. Phys. Lett.*, **184**, 152-158 (1991).

69. "Photodissociation of OCIO: Rempi Study of Primary Photofragments," E. Ruhl, A. Jefferson and V. Vaida, *J. Phys. Chem.*, **94**, 2990-2994 (1990).
68. "Spectroscopic and Photochemical Perturbations of Weak Interactions on Electronic Surfaces of Methyl Iodide," V. Vaida, D. J. Donaldson, S. P. Sapers and R. Naaman, *J. Chem. Soc., Faraday Trans.*, **86**, 2043-2048 (1990).
67. "Reply to Comments on "Rydberg State Dynamics of Methyl Iodide Dimers and Clusters Revisited," V. Vaida, D. J. Donaldson and R. Naaman, *J. Phys. Chem.*, **94**, 7740 (1990).
66. "Spectroscopic Probe of Intramolecular Predissociation Dynamics," V. Vaida, D.J. Donaldson, S. P. Sapers, R. Naaman and M. S. Child, *J. Phys. Chem.*, **93**, 513-520 (1989).
65. "Photodissociation of (OCS)₂ and (CS₂)₂: Competing Photochemical Pathways," D.A. Prinslow and V. Vaida, *J. Phys. Chem.*, **93**, 1836-1840 (1989).
64. "A Reinvestigation of the Electronic Spectra of Ozone; Condensed Phase Effects," V. Vaida, D. J. Donaldson, S. J. Strickler, S. L. Stephens and J.W. Birks, *J. Phys. Chem.*, **93**, 506-508 (1989).
63. "Gas Phase Photofragmentation of CO₃ (CO)₃ CCH₃," W. E. Hollingsworth and V. Vaida, *Organometallics*, **8**, 1614-1615 (1989).
62. "Fourier Transform Ultraviolet Absorption Spectroscopy of Jet-Cooled OCIO," E. C. Richard, C. T. Wickham-Jones and V. Vaida, *J. Phys. Chem.*, **93**, 6346-6350 (1989).
61. "Fourier Transform UV/VIS Emission Spectroscopy of Jet-Cooled CN(B²Σ⁺)," E. C. Richard, D. J. Donaldson and V. Vaida, *Chem. Phys. Lett.*, **157**, 295-299 (1989).
60. "Photoisomerisation of OCIO: a Polar Ozone Depletion Mechanism?" V. Vaida, S. Solomon, E. C. Richard, E. Ruhl and A. Jefferson, *Nature*, **342**, 405-408 (1989).
59. "Ultraviolet Absorption Determination of Intramolecular Predissociation Dynamics in (CH₃I)₂ and (CD₃I)₂," D. J. Donaldson, V. Vaida and R. Naaman, *J. Phys. Chem.*, **92**, 1204-1208 (1988).
58. "Electronic Spectrum of OCS at 62,000-72,000cm⁻¹ M. I. McCarthy and V. Vaida, *J. Phys. Chem.*, **92**, 5875-5879 (1988).
57. "Application of Time Resolved Photoacoustic Calorimetry to Cr-L Bond Enthalpies in Cr(CO)₅-L," G.Y. Yang, V. Vaida and K. S. Peters, *Polyhedron*, **7**, 1619-1622 (1988).
56. "Theoretical Analysis of the ¹B_u Transition of Trans and cis 1,3,5 Hexatriene," R. J. Hemley, A. C. Lasaga, V. Vaida and M. Karplus, *J. Phys. Chem.*, **92**, 945-954 (1988).
55. "The (n₀-3s) Rydberg State of Acetone: Absorption spectroscopy of Jet-Cooled (CH₃)₂CO and (CD₃)₂CO," G. A. Gaines, D. J. Donaldson, S. J. Strickler and V. Vaida, *J. Phys. Chem.*, **92**, 2762-2766 (1988).

54. "Cluster-Induced Potential Shifts as a Probe for Dissociation Dynamics in the (n_O-3s) Rydberg State of Acetone," D. J. Donaldson, G. A. Gaines and V. Vaida, *J. Phys. Chem.*, **92**, 2766-2769 (1988).
53. "Multiphoton Ionization Study of Intra and Intermolecular Effects on the Photodissociation of Methyl Iodide," S. P. Sapers, V. Vaida and R. Naaman, *J. Chem. Phys.*, **88**, 3638-3645 (1988).
52. "Spectroscopy of the (n_O-3s) Rydberg State of Isolated and Clustered Acetaldehyde," D. J. Donaldson, E. C. Richard, S. J. Strickler and V. Vaida, *J. Phys. Chem.*, **92**, 5514-5517 (1988).
51. "Surface Crossings and Predissociation Dynamics of Methyl Iodide Rydberg States," D. J. Donaldson, M. S. Child and V. Vaida, *J. Chem. Phys.*, **88**, 7410-7417 (1988).
50. "Spectroscopy of Predissociating Molecules," V. Vaida "Stochasticity and Intramolecular Redistribution of Energy," eds. R. Lefevre and S. Mukamel, NATO ASI SERIES, **200**, 253-261 (1987).
49. "Photofragmentation of Transition Metal Cluster Complexes in Gas Phase," V. Vaida, ACS Symp. Ser., **333**, 70-80 (1987).
48. "Symmetry Effects in the Electronic Spectrum of Ammonia at Low Temperature," P. C. Engelking and V. Vaida, *Int. J. Quantum Chem.*, **31**, 73-80 (1987).
47. "The Ultraviolet Absorption Spectrum of the $A'A''_2 \leftarrow X'A_1$ Transition of Jet-Cooled Ammonia," V. Vaida, M. I. McCarthy, P. C. Engelking, P. Rosmus, H. J. Werner, P. Botschwina, *J. Chem. Phys.*, **86**, 6669-6676 (1987).
46. "Theoretical $A'A''_2 \leftarrow X'A_1$ Absorption and Emission Spectrum of Ammonia," P. Rosmus, P. Botschwina, H. J. Werner, V. Vaida, P. C. Engelking and M. I. McCarthy, *J. Chem. Phys.*, **86**, 6677-6692 (1987).
45. "Dissociation of NH_3 to $NH_2 + H$," M. I. McCarthy, P. Rosmus, H. J. Werner, P. Botschwina and V. Vaida, *J. Chem. Phys.*, **86**, 6693-6700 (1987).
44. "Wavelength Dependent Photofragmentation of Gas Phase $Mn_2(CO)_{10}$," D. A. Prinslow and V. Vaida, *J. Am. Chem. Soc.*, **109**, 5097-5100 (1987).
43. "Ultraviolet Absorption Spectroscopy of Dissociating Molecules: Effects of Cluster Formation on the Photodissociation of CH_3I ," D. J. Donaldson, V. Vaida and R. Naaman, *J. Chem. Phys.*, **87**, 2522-2530 (1987).
42. "Dynamics of Intermediates in the α and β Elimination Process in $CpW(CO)_2Me$ and $CpW(CO)_2Et$ Measured on the Microsecond Timescale," G. K. Yang, K. S. Peters and V. Vaida, *J. Am. Chem. Soc.*, **108**, 2511-2513 (1986).
41. "Photofragmentation of Transition-Metal Cluster Carbonyls in the Gas Phase," W. E. Hollingsworth and V. Vaida, *J. Phys. Chem.*, **90**, 1235-1240 (1986).
40. "Electronic Absorption Spectroscopy of Jet-Cooled Molecules," V. Vaida, *Acc. Chem. Res.*, **19**, 114-120 (1986).

39. "Spectroscopic Investigation of the $^1\Sigma^+ \rightarrow ^1\Pi$ Transition of Jet-Cooled OCS," M. I. McCarthy and V. Vaida, *J. Phys. Chem.*, **90**, 6759-6761 (1986).
38. "Strength of the Metal-Ligand Bond in $\text{LCr}(\text{CO})_5$ Measured by Photoacoustic Calorimetry," G. K. Yang, K. S. Peters and V. Vaida, *Chem. Phys. Lett.*, **125**, 566-568 (1986).
37. "The Determination of the Mn-Mn Bond Strength in $\text{Mn}_2(\text{CO})_{10}$ Using Pulsed Time Resolved Photoacoustic Calorimetry," J. L. Goodman, K. S. Peters and V. Vaida, *Organometallics*, **5**, 815-816 (1986).
36. "Theoretical Study of the Ground and Excited Singlet States of Styrene," R. J. Hemley, U. Dinur, V. Vaida and M. Karplus, *J. Am. Chem. Soc.*, **107**, 836-844 (1985).
35. "The Singlet State of Styrene: theoretical vibrational analysis of the ultraviolet spectrum" R. J. Hemley, D. G. Leopold, V. Vaida and M. Karplus, *J. Chem. Phys.*, **82**, 5379-5397 (1985).
34. "The Direct Ultraviolet Absorption Spectrum of the $^1\Sigma^+ \rightarrow ^1\Pi$ Transition of Jet-Cooled $^{13}\text{C}^{32}\text{S}_2$ and $^{12}\text{C}^{34}\text{S}_2$," J. L. Roebber and V. Vaida, *J. Chem Phys.*, **83**, 2748-2753 (1985).
33. "Photochemistry of Gas Phase $\text{Mn}_2(\text{CO})_{10}$ and $\text{Re}_2(\text{CO})_{10}$: Mass Spectrometric Evidence for a Dinuclear Primary Photoproduct," D. G. Leopold and V. Vaida, *J. Am. Chem. Soc.*, **106**, 3720-3732 (1984).
32. "Direct Absorption Spectroscopy of Jet-Cooled Polyenes I: The $^1\text{B}_u$ Transition of trans, trans 1,3,5,7 Octatetraene," D. G. Leopold, M. F. Granville and V. Vaida, *J. Chem. Phys.*, **81**, 4210-4217 (1984).
31. "Direct Absorption Spectroscopy of Jet-Cooled Polyenes II: The $^1\text{B}_u$ Transitions of Butadienes and Hexatrienes," D. G. Leopold, R. D. Pendley, J. L. Roebber, R. J. Hemley, and V. Vaida, *J. Chem. Phys.*, **81**, 4218-4229 (1984).
30. "The Direct Ultraviolet Absorption Spectrum of the $\text{A}'\text{A}''_2 \leftarrow \text{X}'\text{A}_1$ Transition of Jet-Cooled Ammonia," V. Vaida, W. Hess and J. L. Roebber, *J. Phys. Chem.*, **88**, 3397-3400 (1984).
29. "Gas Phase Multiphoton Dissociation of Iron Carbonyls: Structure and Photoreactivity," J. A. Welch, V. Vaida and G. L. Geoffroy, *J. Phys. Chem.*, **87**, 3635-3638 (1983).
28. "Franck-Condon analysis of the $^1\text{B}_u$ Transition of 1,3 Butadiene from Absorption and Raman Intensities," R. J. Hemley, J. I. Dawson and V. Vaida, *J. Chem. Phys.*, **78**, 2915-2927 (1983).
27. "UV-VIS Multiphoton Dissociation of $\text{Cr}(\text{CO})_6$: Experimental Evidence for Statistical Fragmentation," D. P. Gerrity, L. J. Rothberg and V. Vaida, *J. Phys. Chem.*, **87**, 2222-2225 (1983).

26. "Multiphoton Dissociation of Transition-Metal Carbonyl Complexes: A Novel Route to Gas Phase Metal Clusters," D. G. Leopold and V. Vaida, *J. Am. Chem. Soc.*, **105**, 6809-6811 (1983).
25. "The Direct Ultraviolet Absorption Spectrum of the $^1\Sigma^+ \rightarrow ^1\Pi$ Transition of Jet-cooled CS_2 ," R. J. Hemley, D. G. Leopold, J. L. Roebber and V. Vaida, *J. Chem. Phys.*, **79**, 5219-5227 (1983).
24. "Multiphoton Ionization Mass Spectrometric Studies of Transition-Metal Carbonyl Complexes," D. G. Leopold, and V. Vaida, Photochemistry and Photobiology Vol. I, Harwood Acad. Publ., 1983.
23. "Multiphoton Ionization Mass Spectrometric Studies of Transition-Metal Carbonyl Complexes," D. G. Leopold and V. Vaida, *Laser Chem.*, **3**, 49 (1983).
22. "Multiphoton Ionization - Time of Flight Mass Spectrometry of Transition-Metal Complexes: $\text{Mn}_2(\text{CO})_{10}$ and $\text{Re}_2(\text{CO})_{10}$," D.A. Lichtin, R.B. Bernstein and V. Vaida, *J. Am. Chem. Soc.*, **104**, 1830-1834 (1982).
21. "Medium Effects on the Photodissociation of $\text{Cr}(\text{CO})_6$," J. A. Welch, K. S. Peters and V. Vaida, *J. Phys. Chem.*, **86**, 1941-1947 (1982).
20. "Evidence of a State Dependent Depletion Process in the Two-Photon Fluorescence Excitation Spectra of Saturated Amines," A. M. Halpern, D. P. Gerrity, L. J. Rothberg and V. Vaida, *J. Chem. Phys.*, **76**, 102-107 (1982).
19. "Picosecond Dynamics of Solution Phase Photofragmentation of $\text{Mn}_2(\text{CO})_{10}$," L. J. Rothberg, N. J. Cooper, K. S. Peters and V. Vaida, *J. Am. Chem. Soc.*, **104**, 3536-3537 (1982).
18. "Electronic Absorption Spectra of Jet-Cooled Molecules. The S_2 State of Styrene," R. J. Hemley, D. G. Leopold and V. Vaida, *J. Phys. Chem.*, **85**, 134-135 (1981).
17. "Direct Absorption Spectra of Higher Excited States of Jet-Cooled mono-Substituted Benzenes: Phenylacetylene, Styrene, Benzaldehyde and Acetophenone," D. G. Leopold, R. J. Hemley, V. Vaida and J. L. Roebber, *J. Chem. Phys.*, **75**, 4758-4769 (1981).
16. "Gas Phase Multiphoton Photodissociation of $\text{Mn}_2(\text{CO})_{10}$: The Effect of Collisions on Photofragmentation," L. J. Rothberg, D. P. Gerrity and V. Vaida, *J. Chem. Phys.*, **74**, 2218-2220 (1981).
15. "Production of Gas Phase Bare Transition-Metal Clusters by Laser Photodissociation of Organometallic Cluster Compounds," V. Vaida, N. J. Cooper, R. J. Hemley and D. G. Leopold, *J. Am. Chem. Soc.*, **103**, 7022-7023 (1981).
14. "Effects of Nonresonant Ionization and Multiphoton Ionization Lineshape," L. J. Rothberg, D. P. Gerrity and V. Vaida, *J. Chem. Phys.*, **75**, 4403-4412 (1981).
13. "Electronic Absorption Spectroscopy of Cooled Supersonic Expansions: Dynamics of the $^1B_{1u}$ State of trans-Butadiene," V. Vaida and G. McClelland, *Chem. Phys. Lett.*, **71**, 436-439 (1980).

12. "Electronic Spectrum of Furan from 2200 to 1950 Å," J. L. Roebber, D. P. Gerrity, R. Hemley and V. Vaida, *Chem. Phys. Lett.*, **75**, 104-106 (1980).
11. "Electronic Spectra of Butadiene and its Methyl Derivatives: A Multiphoton Ionization Study," L. J. Rothberg, D. P. Gerrity and V. Vaida, *J. Chem. Phys.*, **73**, 5508-5513 (1980).
10. "Multiphoton Ionization of Metal Atoms Produced in the Photodissociation of Group VI Hexacarbonyls," D. P. Gerrity, L. J. Rothberg and V. Vaida, *Chem. Phys. Lett.*, **74**, 1-5 (1980).
9. "Local Structure and Triplet Energy Migration in p-Dichlorobenzene p-Dibromobenzene Solid Solutions," V. Vaida and S. D. Colson, *Mol. Phys.*, **35**, 965-974 (1978).
8. "Multiphoton Transition in trans-Butadiene Observed by Multiphoton Ionization and Thermal Lensing Spectroscopy," V. Vaida, R. E. Turner, J. L. Casey, S. D. Colson, *Chem. Phys. Lett.*, **54**, 25-29 (1978).
7. "Multiphoton Ionization Spectra of Pyridine and Pyrazine," R. E. Turner, V. Vaida, C. A. Molini, J. O. Berg, D. H. Parker, *Chem. Phys.*, **28**, 47-54 (1978).
6. "Note on the Elusive $^1B_{2g}$ State in the Two Photon Spectrum of Benzene," V. Vaida, M.B. Robin, N.A. Kuebler, *Chem. Phys. Lett.*, **58**, 557-560 (1978).
5. "Phonon Assisted Trap-Trap Triplet Energy Migration in the 0°K Limit in Crystalline Benzene," S. D. Colson, R. E. Turner, V. Vaida, *J. Chem. Phys.*, **66**, 2187-2190 (1977).
4. "Singlet and Triplet Exciton Percolation in Benzene Isotopic Mixed Crystals," S. D. Colson, S. M. George, T. Keyes, V. Vaida, *J. Chem. Phys.*, **67**, 4941-4947 (1977).
3. "Intermolecular Mixing of Electronic States in Chemically Mixed Molecular Crystals," V. Vaida and S. D. Colson, *J. Chem. Phys.*, **67**, 710-714 (1977).
2. "Triplet Energy Transfer Mechanism in Isotopic Mixed Molecular Crystals," S. D. Colson, F. B. Tudron, R. E. Turner, V. Vaida, *J. Phys. Chem.*, **80**, 2196-2196 (1976).
1. "Resolved Emission from Compound States in Chemically Mixed Crystals," S. D. Colson and V. Vaida, *J. Chem. Phys.*, **64**, 4224-4225 (1976).

BOOK CHAPTERS, TECHNICAL REPORTS & CONFERENCE PROCEEDING

12. "Veronica Vaida: Autobiographical Notes" Veronica Vaida *J. Phys. Chem. A* 122(5) 1159-1166 (2018)
11. "Introduction to the special issue on atmospheric spectroscopy" Peter Bernath and Veronica Vaida *Journal of Molecular Spectroscopy* 323, 1-1 (2016)
[doi:10.1016/j.jms.2016.03.008](https://doi.org/10.1016/j.jms.2016.03.008)
10. "Aqueous Interfaces" Veronica Vaida, Elizabeth Griffith *Encyclopedia of Astrobiology*, Ed. Muriel Garaud, Springer-Verlag Berlin Heidelberg 2014
doi: 10.1007/SpringerReference_324803
url: <http://www.springerreference.com/index/chapterdbid/324803>
9. "Water: The "Tough-Love" Parent of Life" A. F. Tuck, V. Vaida *CRC Chapter 16*, 235-247 in *Water and Life: The unique properties of H₂O* Ed. R. M. Lindon-Bell, S. Conway Morris, J. D. Barrow, J. L. Finney, C. L. Harper, Jr. CRC Press Taylor and Francis Group Boca Raton, London, New York (2010)
8. "Surface activity of perfluorinated compounds at the water-air interface" N. Rontu, V. Vaida *ACS Symposium Series 1005: Atmospheric Aerosols*, 65-78 (2009)
7. "Chemistry in prebiotic aerosols: A mechanism for the origin of life" H. Tervahattu, A.F. Tuck and V. Vaida in *Origins: genesis, evolution and the biodiversity of life* ed. J. Seckbach Kluwer Academic Publishers (2004)
6. "Chemistry and Radiative Properties of water Clusters" L. M. Goss, V. Vaida *World meteorological Org- publications –WMO TD 2*, 433-436 (1997)
5. "UV and VUV Spectroscopy and Photochemistry of Small Molecules in a Supersonic Jet," E. Ruhl and V. Vaida, *NASA Conf. Public. 3077*, **1**, 255 (1990).
4. "Photodissociation of Gas Phase Metal Clusters," V. Vaida, *Modern Inorganic Chemistry*, ed. D. H. Russell, *Plenum*, **11**, 353-367 (1989).
3. "Measurements of High-Resolution UV-VIS Absorption Cross Sections at Stratospheric Temperatures" V.Vaida, G.J.Frost, and L.M.Goss *Proc Ozone Symp.* **02**, 991(1998)
2. "Photodissociation of Methyl Iodide Clusters," D. J. Donaldson, S. Sapers, V. Vaida and R. Naaman, "Large Finite Systems," ed, J. Jortner 1987, D. Reidel Publishing Co.
1. "Photodissociation of Transition-Metal-Cluster Carbonyls," V. Vaida and J. A. Welch, *Advan. Laser Chem.*, **Vol. 3**, p. 159-170, Eds. B. A. Garetz and J. R. Lombardi, 1986, John Wiley & Sons.