

# CURRICULUM VITA

## MOHAMMED A. GHARAIBEH

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### EDUCATION

- Ph.D. in Physical Chemistry / Spectroscopy** **2012**  
University of Kentucky, Lexington, Kentucky.  
Dissertation: **Spectroscopic Detection and Characterization of Jet-Cooled Transient Molecules.**  
Supervisor: Prof. Dennis J. Clouthier
- M.S. in Chemistry** **1999**  
The University of Jordan, Amman  
Thesis: **Chemical Modification of Jordanian Kaolinite Using Crown Ethers**  
Supervisors: Prof. Ghazi Derwish and Prof. Mohammed Al-Zughul
- B.S. in Chemistry** **1996**  
Yarmouk University, Irbid

### Professional / Academic Experiences

- **Assistant Professor.** **2013-Now**  
The University of Jordan
- **Research Assistant** **2006-2012**  
University of Kentucky
- **Physical Chemistry Teaching Assistant** **2006-2008**  
University of Kentucky
- **Teaching and research assistant** **2001-2006**  
The University of Jordan

### AWARDS

- Full tuition and stipend fellowship from The University of Jordan **2010 – 2012**
- Research assistant fellowship from University of Kentucky **2008 – 2010**
- Travel Grant Award to the International Symposium on Molecular Spectroscopy the 64<sup>th</sup>, 66<sup>th</sup> and 67<sup>th</sup> meetings from University of Kentucky **2010, 2011, 2012**

## **Research Interests:**

- Detection of highly reactive intermediate molecules
- Supersonic expansion and jet-cooling
- Laser induced fluorescence spectroscopy
- Emission spectroscopy
- Infrared spectroscopy
- Computational chemistry

## **Relevant Skills**

- High power pulsed lasers.
- Moderate and high resolution tunable dye lasers
- High vacuum systems

## **Peer – Reviewed Publications**

Gharaibeh, M. A.; Clouthier, D. J.; Kalemoss, A.; Lefebvre-Brion, H.; Field, R. W., A New, Definitive Analysis Of A Very Old Spectrum: The Highly Perturbed  $A^2\Pi_u-X^2\Pi_g$  Band System of The Chlorine Cation ( $Cl_2^+$ ). J. Chem. Phys. 2012, 137 (19)

Gharaibeh, M. A.; Clouthier, D. J., A Laser-Induced Fluorescence Study of The Jet-Cooled Nitrous Oxide Cation ( $N_2O^+$ ). J. Chem. Phys. 2012, 136 (4)

Kang, L.; Gharaibeh, M. A.; Clouthier, D. J.; Novick, S. E., Fourier Transform Microwave Spectroscopy of The Reactive Intermediate Monoiodosilylene,  $HSi$  And  $DSi$ . J. Mol. Spectrosc. 2012, 271 (1)

Gharaibeh, M. A.; Clouthier, D. J.; Tarroni, R., Heavy Atom Nitroxyl Radicals.Vi. The Electronic Spectrum of Jet-Cooled  $H_2PO$ , The Prototypical Phosphoryl Free Radical. J. Chem. Phys. 2011, 135 (21)

Gharaibeh, M. A.; Clouthier, D. J., Laser Induced Fluorescence Spectroscopy Of The Jet-Cooled Carbon Dioxide Cation ( $^{12}CO_2^+$  And  $^{13}CO_2^+$ ). J. Chem. Phys. 2010, 132 (11)

Abedrabbo, S.; Arafah, D. E.; Wielunski, L. S.; Gharaibeh, M.; Ravindra, N. M., Processing And Characterization Of Nanostructures Of Silicon-On-Dielectrics. TmsLett. 2006, 3 (2)

Abedrabbo, S.; Arafah, D. E.; Gokce, O.; Wielunski, L. S.; Gharaibeh, M.; Celik, O.; Ravindra, N. M., Ion Beam Mixing For Processing Of Nanostructure Materials. J. Electron. Mater. 2006, 35 (5)

## Conferences

AN EXPERIMENTAL AND QUANTUM CHEMICAL STUDY OF THE ELECTRONIC SPECTRUM OF THE HBCI FREE RADICAL. Mohammed A. Gharaibeh, RamyaNagarajan and Dennis J. Clouthier. *International Symposium on Molecular Spectroscopy (2012) Columbus, Ohio.*

THE SOLUTION TO THE ELECTRONIC SPECTRUM OF THE CHLORINE CATION ( $\text{Cl}_2^+$ ). Mohammed A. Gharaibeh and Dennis J. Clouthier. *International Symposium on Molecular Spectroscopy (2012)*

LASER-INDUCED FLUORESCENCE STUDIES OF THE JET-COOLED ALUMINUM ACETYLIDE RADICAL (AICCH/AICCD). Mohammed A. Gharaibeh and Dennis J. Clouthier. *International Symposium on Molecular Spectroscopy (2011) Columbus, Ohio.*

THE ELECTRONIC SPECTRUM OF  $\text{H}_2\text{PO}$ , THE PROTOTYPICAL PHOSPHORYL FREE RADICAL. MOHAMMED A. GHARAIBEH, DENNIS J. CLOUTHIER *International Symposium on Molecular Spectroscopy (2011) Columbus, Ohio.*

A NEW ANALYSIS OF A VERY OLD SPECTRUM: THE HIGHLY PERTURBED  $A^2\Pi_i - X^2\Pi_i$  BAND SYSTEM OF THE CHLORINE CATION ( $\text{Cl}_2^+$ ). Mohammed A. Gharaibeh and Dennis J. Clouthier. *International Symposium on Molecular Spectroscopy (2011) Columbus, Ohio.*

LASER-INDUCED FLUORESCENCE STUDIES OF THE JET-COOLED CARBON DIOXIDE AND NITROUS OXIDE CATIONS. Mohammed A. Gharaibeh and Dennis J. Clouthier. *International Symposium on Molecular Spectroscopy (2010) Columbus, Ohio.*

THE ELECTRONIC SPECTRA OF THE JET-COOLED BORON DIFLUORIDE ( $\text{BF}_2$ ) AND BORON DICHLORIDE ( $\text{BCl}_2$ ) FREE RADICALS. Jie Yang, Jie Wei, Fumie Sunahori, Mohammed Gharaibeh, Blaine Ellis, Alfred Chen, Dennis J. Clouthier and Sheng-Gui He. *International Symposium on Molecular Spectroscopy (2009) Columbus, Ohio.*

MICROWAVE SPECTROSCOPY OF THE HEAVY-ATOM CARBENE ANALOGS:  $\text{HSi}$  and  $\text{DSi}$ . Lu Kang, Mohammed A. Gharaibeh, Dennis J. Clouthier and Stewart E. Novick. *International Symposium on Molecular Spectroscopy (2009) Columbus, Ohio.*

EXPERIMENTAL AND THEORETICAL STUDIES OF THE ELECTRONIC SPECTRA OF THE THIOPHOSPHORYL ( $\text{X}_2\text{PS}$ ) AND ARSENYL ( $\text{X}_2\text{AsO}$ ) FREE RADICALS. Mohammed A. Gharaibeh, XiaopengZahng, Jie Wei, Yong Shi and Dennis J. Clouthier. *International Symposium on Molecular Spectroscopy (2008) Columbus, Ohio.*

**Workshops:**

- Staff development workshops, The University of Jordan, 2013.

**References:****Prof. Dennis J. Clouthier**

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