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# HAIYAN WANG

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303 Diamond Village #7 • Gainesville, FL 32603  
(352) 871-8820 (Cell) • (352) 392-0510 (Office) • hawang@chem.ufl.edu

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## CAREER OBJECTIVE

Seeking a research and development position that will utilize my knowledge in experimental and computational Chemistry as well as my experience in instrument design

## EDUCATION

<i>University of Florida</i> (08/2001 – Present)	Advisor: Prof. Martin Vala
PhD in Physical Chemistry (expected 10/2005)	GPA: 4.0/4.0
<i>Xiamen University</i> , China (08/1998 – 08/2001)	Advisor: Prof. Lansun Zheng
MS in Inorganic Chemistry	GPA: 3.7/4.0
<i>Xiamen University</i> , China (08/1994 – 08/1998)	Advisor: Prof. Lansun Zheng
BS in Chemistry	GPA: 3.7/4.0

## RESEARCH EXPERIENCE

### University of Florida 08/2001 – Present

- ❖ Study astrophysical species (for instance, carbon and carbon sulfur clusters which are also important for nano and semiconductor material science) and their reactions in laboratory using FT-IR, UV-Vis and Raman spectroscopy coupled with theoretical calculations
- ❖ Explore polycyclic aromatic hydrocarbons (carcinogens, PAHs) and their ions which also exist in Space using vibrational and optical spectroscopy
- ❖ Design different metal-PAH complex ion source systems for mass spectrometer
- ❖ Investigate PAHs and their metal complexes with FT-ICR-MS
- ❖ Analyze the photo-effect on iron complex ions pre-selected by TOF-MS

### Xiamen University 08/1997 – 08/2001

- ❖ Design and construct an ion trap mass spectrometer (IT-MS) followed by its performance test
- ❖ Study the collision-induced dissociation of polycarbon selenium clusters produced by laser ablation using TOF-MS-MS
- ❖ Explore the kinetics (RRKM) of dissociation of carbon clusters using a self-written program

## SKILLS

- ❖ Proficient in programming (C++, HTML) and computer softwares like Gaussian 03, MS-Office, PaintShop, Origin, SolidWorks, *etc*
- ❖ Knowledge of separation techniques such as HPLC, GC-MS, LC-MS, *etc*
- ❖ Teaching experience: General Chemistry and Physical Chemistry at University of Florida

## HONORS AND AWARDS

- University of Florida:* Outstanding Academic Accomplishment, 2001 – 2004  
Stasch Award, 2004  
Dow Research Award, 2005
- Xiamen University:* *E'ruda* Scholarship, 1997  
*Dupont* Scholarship, 1998  
*Guanghua* Scholarship, 2000  
*Baolong* Scholarship, 2000  
First-class Scholarship and Excellent Student, 1996 – 2000

## PUBLICATIONS

1. **Wang H. Y.**; Szczepanski J.; Brucat P.; Vala M. Anharmonicity of Polycyclic Aromatic Hydrocarbon Compounds: Naphthalene, Fluorene, Anthracene, and Phenanthrene **2005**, (in Preparation)
2. **Wang H. Y.**; Szczepanski J.; Hirata S.; Vala M. Vibrational and Electronic Absorption Spectroscopy of Dibenzo[b,def]chrysene and its Ions *J. Phys. Chem. A* **2005**, (Submitted)
3. Szczepanski J.; **Wang H. Y.**; Doughty B.; Cole J.; Vala M. Formation of the Interstellar Molecules HNC<sub>3</sub> and HC<sub>3</sub>N from a C<sub>3</sub> Carbon Cluster and Ammonia *Astrophys. J.* **2005**, 626, L69 – L72
4. **Wang H. Y.**; Szczepanski J.; Cooke A.; Brucat P.; Vala M. Vibrational Absorption Spectra of C<sub>n</sub>S ( $n = 2, 6$ ) and C<sub>n</sub>S<sub>2</sub> ( $n = 7, 9, 11, 13, 15$ ) Linear Carbon-Sulfur Clusters *Int. J. Quant. Chem.* **2005**, 102 (5), 806 – 819
5. **Wang H. Y.**; Szczepanski J.; Brucat P.; Vala M. Infrared Spectra and Dissociation Pathways of the Linear Carbon-Sulfur Clusters C<sub>n</sub>S and SC<sub>n</sub>S ( $n \leq 29$ ): Theoretical Calculations *Int. J. Quant. Chem.* **2005**, 102 (5), 795 – 805 (Invited, in honor of Dr. John Pople)
6. Szczepanski J.; **Wang H. Y.**; Jones B.; Arrington C. A.; Vala M. T. Infrared Absorption Spectroscopy of Diacetylene Ions Trapped in Solid Argon *Phys. Chem. Chem. Phys.* **2005**, 7 (5), 738 – 742
7. Szczepanski J.; **Wang H. Y.**; Vala M. Reaction of the C<sub>3</sub> Carbon Cluster with Benzene *Chem. Phys.* **2004**, 303 (1 – 2), 165 – 177
8. **Wang H. Y.**; Szczepanski J.; Vala M. Infrared Absorption Spectroscopy of the C<sub>n</sub>Xe ( $n = 2, 3, 5, 7, 9$ ) Species *Phys. Chem. Chem. Phys.* **2004**, 6 (16), 4090 – 4095
9. **Wang H. Y.**; Szczepanski J.; Brucat P. J.; Vala M. T. Laboratory Infrared Observation of Linear C<sub>7</sub>S Carbon-Sulfur Cluster in Solid Argon *J. Phys. Chem. A* **2003**, 107 (50), 10919 – 10925
10. **Wang H. Y.**; Lu X.; Huang R. B.; Zheng L. S. Theoretical Studies of XC<sub>n</sub>X (X = O, S, Se;  $n = 1 – 8$ ): Structures, Spectroscopic Properties, and Dissociation Energies *J. Mol. Struct. – THEOCHEM* **2002**, 593, 187 – 197

11. **Wang H. Y.**; Huang R. B.; Chen H.; Zhang Q.; Zheng L. S. Calculation of RRKM Microcanonical Dissociation Rate Constant of Small Linear Carbon Clusters (II) –  $C_n$  ( $n = 7 \sim 10$ ) *Chem. J. Chin. Univ.* **2001**, 22 (7), 1181 – 1184
12. **Wang H. Y.**; Huang R. B.; Chen H.; Lin M. H.; Zheng L. S. Studies of Linear  $C_nSe^-$  ( $1 \leq n \leq 11$ ) Clusters Produced from Laser Ablation: Collision-Induced Dissociation and Ab Initio Calculation *J. Phys. Chem. A* **2001**, 105 (19), 4653 – 4659
13. **Wang H. Y.**; Zhang Q.; Chen H.; Huang R. B.; Zheng L. S. Calculation of RRKM Microcanonical Dissociation Rate Constant of Small Linear Carbon Clusters (I) –  $C_n$  ( $n = 3 \sim 6$ ) *Chem. J. Chin. Univ.* **2001**, 22 (4), 607 – 609
14. Wu H. S.; Zhang C. J.; Xu X. H.; **Wang H. Y.**; Chen H.; Huang R. B.; Zheng L. S.; Zhang Q. E. Structure and Stability of  $(AlN)_n$  Clusters *Science in China (Series B) – Chinese* **2001**, 31 (1), 42 – 48
15. Chen L. H.; Lin S. C.; **Wang H. Y.**; Zhu H. K. Test of the Performance of the Self-Designed Radio-Frequency Ion Trap Mass Spectrometer Interfaced with a Laser Desorption Ion Source *J. Xiamen Univ. (Natural Science)* **2000**, 39 (3), 311 – 316 (in Chinese)
16. Chen L. H.; Lin S. C.; **Wang H. Y.**; Huang R. B.; Zheng L. S. Simulation and Experiment on Confinement of Ions in Radio-Frequency Ion Trap *Anal. Instrum.* **1999**, 3, 13 – 17 (in Chinese)

## POSTERS AND PRESENTATION

1. **Wang H. Y.** Formation of the Interstellar Molecules  $C_3NH$  and  $HC_3N$  from a  $C_3$  Carbon Cluster and Ammonia *Physical Chemistry Division Seminar*, March 29, 2005, University of Florida
2. **Wang H. Y.**; Valle J.; Szczepanski J.; Eyler J.; Vala M. FT-ICR Mass Spectrometry Investigation of Metal-PAH Complex Ions *Pittcon Conference*, February 29 – March 4, 2005, Orlando, Florida
3. **Wang H. Y.** Study of Small Astrophysical Molecular Species in the Lab *Physical Chemistry Division Seminar*, March 23, 2004, University of Florida
4. **Wang H. Y.**; Szczepanski J.; Vala M. T. Infrared Observation of  $C_nXe$  ( $n \geq 2$ ) Charge Transfer Complexes *Department of Chemistry*, December 8, **2003**, University of Florida
5. **Wang H. Y.**; Szczepanski J.; Brucat P. J.; Vala M. T. Laboratory Infrared Observation of Linear  $C_7S$  Carbon-Sulfur Cluster in Solid Argon *Gordon Conference (Chemistry and Physics of Matrix-Isolated Species)*, July 20 – 25, **2003**, Bates College, Lewiston, Maine
6. Szczepanski J.; **Wang H. Y.**; Vala M. Reaction of the  $C_3$  Carbon Cluster with Benzene *Gordon Conference (Chemistry and Physics of Matrix-Isolated Species)*, July 20 – 25, **2003**, Bates College, Lewiston, Maine

## REFERENCES

Can be obtained upon request