

# Chuji Wang

**University Address:** 138 Hilbun Hall

Department of Physics and Astronomy  
P.O. Box 5167, Mississippi State University  
Mississippi State, MS 39762-5167  
Phone (662) 325-9455 - Fax (662) 325-8898  
Email: [cw175@msstate.edu](mailto:cw175@msstate.edu)  
Wang Group: [www.wang.physics.msstate.edu](http://www.wang.physics.msstate.edu)

## A. CURRENT RESEARCH INTERESTS

- 1) Optical trapping and manipulations (CRDS, Raman and LIF) of single aerosol particles
- 2) Low-temperature nonthermal plasmas (laser diagnostics, plasma-assisted combustion, plasma processing, magnetized dust plasma)
- 3) Fiber optic sensors and sensing systems (chemical, physical, and biomedical sensors)
- 4) High sensitivity and high precision instrumentation (for energy, environment, and medicine) using CRDS and fiber optics
- 5) Breath analysis and biomarkers for disease diagnostics and metabolic status monitoring
- 6) Kinetics and spectroscopy for redox chemistry of atmospheric mercury and radicals

## B. PROFESSIONAL APPOINTMENTS

2021 fall      Sabbatical research in the MDPX group at Auburn University  
2013 – 2014 US Army Research Laboratory, Adelphi, MD, one-year sabbatical research on Senior ORAU fellowship  
2013-          **Professor**  
2010 - 2013 **Associate Professor** (Tenured), Dept. of Physics and Astronomy, Mississippi State University  
2006 - 2010 **Assistant Professor** (Tenure Track), Dept. of Physics and Astronomy, Mississippi State University  
2002 - 2006 **Assistant Research Professor** (Non-Tenure Track), (April, 2006) Associate Research Professor (Non-Tenure Track), Institute for Clean Energy Technology, Mississippi State University  
2001 - 2002 **Senior Laser Scientist**, Tiger Optics LLC (Pennsylvania)  
1986 - 1993 **Instructor**, Department of Physics at Anhui Normal University, China

## C. EDUCATION AND PROFESSIONAL PREPARATION

2000 –2001 **Postdoctoral Fellow** Mississippi State University (with Professor George P. Miller (now at University of Tulsa))

1998 - 2000 **Postdoctoral Fellow** State University of New York (SUNY-ESF, with Professor Theodore S. Dibble)

1993 – 1998 **Ph.D.**, Chemical Physics, University of Science and Technology of China

## D. ADJUNCT/GUEST/VISITING PROFESSORSHIP

- Adjunct professor, Department of Chemistry, Physics & Atmospheric Sciences, Jackson State University, MS, 2021- now
- Space Science Institute, Boulder, <https://www.spacescience.org> Boulder, CO, 2022-now

## E. US PATENTS

1. **Chuji Wang**, *Fiber Bragg grating loop ringdown method and apparatus*, US Patent NO. 7,323,677, (January, **2008**).
2. Robert Augustine, Calvin R. Krusen, **Chuji Wang**, and Wen-Bin Yan, *System and method for controlling a light source for cavity ring-down spectroscopy*. US Patent NO. 7,277,177, (October, **2007**).
3. **Chuji Wang**, *Fiber ringdown pressure/force sensors*, US Patent NO. 7,241,986, (July, **2007**).
4. **Chuji Wang**, Christopher Winstead, and Yixiang Duan, *Method and apparatus for elemental and isotope measurements and diagnostics-microwave induced plasma-cavity ring-down spectroscopy*. US Patent NO. 7,054,008, (May, **2006**).
5. Jilei Zhang, **Chuji Wang**, and Hossein Toghiani, *Synthesis methods of multilayered carbon-encapsulated metal core nanoparticles from wood char*, **Application filed in September 2010**.
6. **Chuji Wang**, Peeyush Sahay, and Susan S. Scherrer, *Method of measuring electron impact excitation cross section using cavity ringdown spectroscopy*, **Application filed in March, 2011**.
7. Yongle Pan and **Chuji Wang**, *Method for repeatedly trapping of individual airborne absorbing particles using a counter-flow co-axial double-nozzle and photophoretic trap for continuous sampling and analysis*, **Application filed in Dec. 2013**.

## F. PUBLICATIONS (a full list attached)

- >128 peer-reviewed journal articles
- >137 conference presentations
- 13 peer-reviewed proceedings
- 3 invited book chapters
- 1 Book
- 9 articles with “featured stories”, “Best Paper Award”, “Front cover”, “Hot Article”, or “Highlighted Article”
- H-index 33 (Google Scholar), total citation >4000.
- The World’s Top 2% Scientists by the Stanford University database (<https://dx.doi.org/10.17632/btchxktyzw>)

## G. RESEARCH FUNDING (2002- Aug. 2022)

**Total: \$ 8,183,788**

- 7 from National Science Foundation (2004, 2007, 2009, 2011, 2012, 2016, 2021)
- 5 from US Department of Defense (2013(2), 2016, 2021(2))
- 3 from US Department of Energy Office of Science (2002, 2020, 2021)
- 4 from US Department of Energy national labs (2007, 2011, 2013, 2016)
- 1 from US Department of Agriculture (2011)
- 1 from industry (2005)
- 7 from US Department of Energy Waste Management Office (2002-2007)
- 1 from MSU (2007)

**Awarded grants (2002 – July 2021)**

- 1) National Science Foundation, Collaborative Research: Kinetics and quantitative spectroscopy for redox chemistry of atmospheric mercury, Grant # ECS-2108712, \$ **496,117**, 09/01/2021-08/31/2024, Chuji Wang (lead **PI**, \$496,117 @MSU) and Theodore S. Dibble (PI, State University of New York, College of Environmental of Science and Forestry).
- 2) US Department of Defense, Army Research Office, Study of surface and heterogeneous of mercury using a single-particle approach, Grant # W911NF-21-1-0171, \$**358,490**, 5/10/2021-5/9/2024, Chuji Wang, **sole PI**.
- 3) Department of Energy, Office of Fusion Energy Sciences, Time-, space-, and molecule-resolved multiple plasma reactive species in complex settings using an

- innovative approach of cavity ringdown spectroscopy, Grant # DE-SC0021530, **\$199,999**, 03/15/2021 to 03/14/2023, Chuji Wang, **Sole PI**.
- 4) Department of Energy, Office of Fusion Energy Sciences, Optical trapping and manipulation of single particles for MDP, Grant # DE-SC0021030, **\$214,721**, 09/1/2020-08/31/2022, Chuji Wang, **sole PI**.
  - 5) National Science Foundation, Molecular Insights into the Oxidation of Atmospheric Mercury: The Next Frontier in Atmospheric Mercury Science, Grant # ECS- 1609848, \$ **10,789**, add-on to the grant, 07/1/2016-06/30/2021, Chuji Wang (**Co-PI**, \$263,642 @MSU) and Theodore S. Dibble (PI, State University of New York, College of Environmental of Science and Forestry).
  - 6) National Science Foundation, Molecular Insights into the Oxidation of Atmospheric Mercury: The Next Frontier in Atmospheric Mercury Science, Grant # ECS- 1609848, \$ **24,500**, 07/1/2016-06/30/2019, Chuji Wang (**Co-PI**, \$263,642 @MSU) and Theodore S. Dibble (PI, State University of New York, College of Environmental of Science and Forestry).
  - 7) National Science Foundation, Molecular Insights into the Oxidation of Atmospheric Mercury: The Next Frontier in Atmospheric Mercury Science, Grant # ECS- 1609848, \$ **510,500**, 07/1/2016-06/30/2019, Chuji Wang (**Co-PI**, \$263,642 @MSU) and Theodore S. Dibble (PI, State University of New York, College of Environmental of Science and Forestry).
  - 8) US Department of Defense, Army Research Office, Single Aerosol Particle Studies Using Optical Trapping- Raman Spectroscopy, Grant # W911NF-16-1-0483, **\$338,512**, 9/1/2016-8/31/2019, Chuji Wang, **sole PI**.
  - 9) US Department of Energy, Fiber Loop Ringdown Sensors for Remote Monitoring of Post Tension Rod, Grant # 245854, \$ **95,000** (Phase I), 1/1/2016-9/30/2016, Chuji Wang, **sole PI**.
  - 10) US Department of Defense, Army Research Office, Physical and Chemical Study of Single Aerosol Particles using Optical Trapping-Cavity Ringdown Spectroscopy, Grant # W911NF-13-1-0429, **\$330,000**, 09/01/2013-08/31/2016, Chuji Wang, **sole PI**.
  - 11) US Department of Defense, DURIP program, Optical Trapping-Cavity Ringdown Spectroscopy, Grant # W911NF-13-1-0297, **\$158,000**, 09/01/2013-08/31/2014, Chuji Wang, **sole PI**.
  - 12) Department of Energy, Monitoring of ISD Using Fiber Optic Sensors (Phase III), Grant # AC84132N, \$ **15,000**, 03/15/2013-02/28/2014, Chuji Wang, **sole PI**.

- 13) Department of Agriculture, Production and Characterization of Carbon-based Nanomaterials from Beetle Killed Wood, Grant # 11-JV-11111124-129, \$ **55,000**, 08/17/11 - 07/31/14, Chuji Wang **Co-PI** with PI (Dr. Jilei Zhang).
- 14) National Science Foundation, Quantitative Survey of Combustion Intermediates Towards Understanding of Plasma-Assisted Combustion Mechanism, Grant # CBET-1066486, \$ **318,016**, 05/1/2011-4/30/2015, Chuji Wang, **sole PI**.
- 15) National Science Foundation, REU (Research for Undergraduate Experience) program with Grant # CMMI-0927539, \$**12,000**, 10/1/2012-9/30/2013, Chuji Wang, **sole PI**.
- 16) Department of Energy, Monitoring of ISD Using Fiber Optic Sensors, Grant # AC84132N, \$ **75,000**, 06/15/2011-12/31/2012, Chuji Wang, **sole PI**.
- 17) National Science Foundation, A Multi-functional Fiber Optic Sensor Platform Using a Time Domain Sensing Scheme, Grant # CMMI-0927539, \$**170,000**, 10/1/2009-9/30/2013, Chuji Wang, **sole PI**.
- 18) National Science Foundation, Physical and Chemical Study of Low-Energy Electron Plasma, Grant # CTS-0626302, \$**353,000**, 2/1/2007 - 1/31/2010. Chuji Wang (**Co-PI**), Theodore S. Dibble (PI, State University of New York, College of Environmental of Science and Forestry), \$150,000 @MSU.
- 19) National Science Foundation, Isoprene-OH Peroxy Radicals: Kinetic Studies of Specific Isomers, Grant # ATM-0352926, \$**332,557**, 4/1/2004 - 3/31/2007. Chuji Wang (**Co-PI**), Theodore S. Dibble (PI, State University of New York, College of Environmental of Science and Forestry), \$150,000 @MSU.
- 20) Department of Energy, National Energy Technology Laboratory, Ringdown Spectrometer for CH<sub>4</sub>, CO<sub>2</sub> and C-13 isotope, Grant # DE-RQ26-05NT500832, \$**90,000**, 9/28/2005 - 8/31/2007. Chuji Wang, **sole PI**.
- 21) Department of Energy, Office of Science, Ultra-Sensitive Elemental and Isotopic Measurements with Plasma Cavity Ringdown Spectroscopy, Grant # DE-FG07-02ER63515, \$**450,000**, 9/15/2002 - 3/14/2006. Chuji Wang (**PI**), Yixiang Duan (Co-PI, Los Alamos National Laboratory), C. B. Winstead (Co-PI, University of Southern Mississippi), \$400,000 @MSU.
- 22) DOE-ICET grant DEFC01006EW07040-08245035, Task 4.4, Cavity Ringdown System, Child account # 0008245-035, \$**328,064**, 2/1/2010 - 06/30/2011. Chuji Wang (**PI**).
- 23) DOE-ICET grant DEFC01006EW07040-06040310, Task 4.3, Cavity Ringdown System, Child account # 0008245-035, \$**334,712**, 2/1/2009 - 1/31/2010. Chuji Wang (**PI**).

- 24) DOE-ICET grant # DEFC0106EW07040 06040310, Task 6.1, Measurement, Monitoring, and Characterization of Trace Metals, Radionuclides, and Organic Vapors, Child account # 0081245-024, **\$224,617**, 01/1/2006-03/31/2008. Chuji Wang (**PI**).
- 25) DOE-DIAL, National Energy Technology Laboratory, Southeast Regional Carbon Sequestration Partnership, Grant #SSEB-NT41980-997 (Phase I), **\$164,965**, 10/1/2005 - 9/30/2007. Chuji Wang (**Co-PI**), J. Lindner (PI, MSU-DIAL), and other Co-PIs.
- 26) DOE-DIAL, National Energy Technology Laboratory, R&D of Measurement, Mitigation, and Verification in Carbon Sequestration, supported by Southeast Regional Carbon Sequestration Partnership, Grant #SSEB-NT41980-997 (Phase II), **\$400,000**, 10/01/2005 - 09/30/2009. Chuji Wang (**Co-PI**), Jeff Lindner, (PI, MSU-DIAL).
- 27) DOE-DIAL, In-Tank/At-Tank Characterization for Closure of Hanford Waste Tanks, **\$754,142**, 12/1/2003 - 11/30/2004. M. J. Plodinec (PI, MSU-DIAL) and Chuji Wang (**Task PI**).
- 28) DOE-DIAL, Development of Tank Leak Detection System, **\$209,350**, 12/1/2003 - 11/30/2004. M. J. Plodinec (PI, MSU-DIAL) and Chuji Wang (**Task PI**).
- 29) DOE-DIAL, In-Tank/At-Tank Characterization for Closure of Hanford Waste Tanks, **\$897,736**, 12/1/2002 - 11/30/2003. M. J. Plodinec (PI, MSU-DIAL) and Chuji Wang (**Task PI**).
- 30) Office of Research and Economic Development (ORED) at MSU, Clinic Testing and Sampling of a Breath Analyzer, **\$2,000**, 2007. Chuji Wang, sole **PI**.

## H. TEACHING/ADVISING

The standard teaching load for Research Active Faculty in the Department of Physics at MSU is 2+2 per academic year. With 50% buy-out through his research grants and highly active research activities, Dr. Wang's teaching assignments since 2006 have been consistently 1+1 per academic year. Averaged Student Class Evaluation of all courses he taught is **4.44/5.0**, as compared to 4.2 for fall 2011 average for all MSU classes and 4.1 for all physics classes. This is in spite of physics at MSU being a traditionally difficult class with high failure rates and guarding against grade inflation.

- Fall 2006, PH 2223, Physics II (Electricity and Magnetism) (3.8/5.0)
- Spring 2007, PH 8213, (Classical Mechanics) (4.6/5.0)
- Fall 2007, PH 8803, (Molecular Structure) (4.6/5.0)
- Spring 2008, PH 2233, Physics III (4.2/5.0)
- Spring 2008, PH 2233, Physics III Lab Coordinator
- Fall 2008, PH 2223, Physics II (Electricity and Magnetism) (3.8/5.0)

- Spring 2009, PH 2233, Physics III (4.1/5.0)
- Fall 2009, PH 8803, (Molecular Structure) (4.6/5.0)
- Spring 2010, PH 8213, (Classical Mechanics) (4.5/5.0)
- Fall 2010, PH 4213/PH6213, (Intermediate Mechanics I) (4.7/5.0)
- Spring 2011, PH 4223/PH6223, (Intermediate Mechanics II) (4.8/5.0)
- Fall 2011, PH 2223, Physics II (Electricity and Magnetism) (4.2/5.0)
- Spring 2012, PH 8213, (Classical Mechanics) (4.6/5.0)
- Fall 2012, PH 2223, Physics II (Electricity and Magnetism) (4.3/5.0)
- Spring 2013, PH 8213, (Classical Mechanics) (4.4/5.0)
- Fall 2014, PH 4213/PH6213, (Intermediate Mechanics I) (4.9/5.0)
- Spring 2015, PH 4223/PH6223, (Intermediate Mechanics II) (4.6/5.0)
- Fall 2015, PH 8803, (Molecular Structure) (4.6/5.0)
- Spring 2016, PH 2233, Physics III (4.3/5.0)
- Spring 2017, PH 8213, (Classical Mechanics) (4.6/5.0)
- Fall 2017, PH 2233, Physics III (4.1/5.0)
- Spring 2018, PH 8213, (Classical Mechanics) (4.5/5.0)
- Fall 2018, PH 8803, (Molecular Structure) (4.8/5.0)
- Spring 2019, PH 8213, (Classical Mechanics) (4.6/5.0)
- Fall 2019, PH 4213/PH6213, (Intermediate Mechanics I)
- Spring 2020, PH 8213, (Classical Mechanics)

Courses taught as a Teaching Assistant in the Department of Chemical Physics at University of Science and Technology of China (1994-1998):

- Molecular Spectroscopy
- Physical Chemistry (I)

#### **ADVISING:**

- Graduated **8 Ph.D.** and **9 M.S.** students
  1. Nimisha Srivastava (Ph.D. 2011) (from 2011, Research Engineer, **Intel Inc**)
  2. Susan S. Scherrer (Ph.D. 2011) (from 2011, R&D Engineer, **Southern Ionics**)
  3. Malik Kaya (Ph.D. 2013) (from 2013, **Assistant Professor**, Turkey)
  4. Peeyush Sahay (Ph.D. 2013) (from 2013, **Research Scientist**, University Memphis)
  5. Zhennan Wang (2014, Ph.D.) (**Aerodyne Research Inc**, Boston, MA)
  6. Wei Wu (Ph.D. 2016) (from 2016, **Lam Research** Corporation)
  7. Che A Fuh (Ph..D. 2018) (from 2018, **Intel Inc**)
  8. Maheshwar Ghimire (2018, Ph.D.) (from 2018, **Intel Inc**)
  9. Shane Clark (M.S. 2018) (from 2018, **BAE Systems**)

10. Zhiyong Gong (2019, Ph.D.) (from 2019, **WYATT Technology**)
  11. Sudip P. Koirala (M.S. 2005) (now, Processing Engineer, **Intel Inc**)
  12. Armstrong Mbi (M.S.2006) (Ph.D. in Medical Physics, 2012,  
Georgetown Univ. now, from 2014, NIH, Now **Goldman Sachs**)
  13. Nimisha Srivastava (M.S.2009)
  14. Chamini Gerath (M.S.2010)
  15. Peeyush Sahay (M.S.2010)
  16. Malik Kaya (M.S.2011)
  17. Wei Wu (M.S.2013)
  18. Haifa Alali (M.S. 2014)
  19. Che A Fuh (M.S. 2016)
- Advised **3** Postdoctoral Associates
    - Jason Fuller (2004-2005)
    - Pawal Cias (2004-2006)
    - Meixiu Sun (2014-2015)
  - Currently advising **5 PhD** graduate students and **1 MS** student
    1. Haifa Alali (2014-, Ph.D. student)
    2. Rongrong Wu (Fall 2017-, Ph.D. student)
    3. Yukai Ai (2019-, Ph.D. student)
    4. Pubuduni E. Mudiyansele (2018 summer, Ph.D. student)
    5. Cameron Gaito (Spring 2022, MS student)
    6. Achini Ovitigala (Spring 2022-, Ph.D. student)
  - Advisory Committee member for **42** graduate students from other research groups
  - Advised **6** undergraduate students
    - Cameron Gaito (2020-2022)
    - Jeff Headley (2016-2018) (from 2018, US Naval Oceanographic Office)
    - Andrew Cameron (2014-2015)
    - Diana Hubis (Physics Honor, 2013, NSF-REU)
    - Jonathan Mathew Miller (Physics Honor, 2013, NSF-REU)
    - Marthony Robins (Duke University, Ph.D. student from Fall 2012)



## I. SERVICES

### 1. Services and leaderships in the professional communities

**Editorial Board Member** of journal: *Recent Patent on Signal Processing  
Journal of Spectroscopy  
Measurement Science and Technology*

**Guest Editor:** *Applied Science* (2017)

**Guest Editor:** *A special issue on Recent Advance in Aerosol Science and  
Molecules* (2022)

**Guest Editor:** A special issue on Recent Advancements in the Research of Aerosol  
Science & Technology in *Molecules* (IF 4.4), (2021)

**Chair** of American Aerosol Association Research Publication Committee (2021-  
2022), *Aerosol Science and Technology*

**Scientific Publication Committee:** *Aerosol Science and Technology*

**Scientific Committee Member**, International Association of Breath Research  
(IABR) (2016-2018)

**Symposium Organizer** with two co-organizers, Special Symposium on Single  
Aerosol Particle Studies, 2016 American Aerosol Association Research  
Annual Conference (Portland, Oregon, 2016).

**Session Organizer** with two co-organizers, Dust, May 2023, Italy

**Chair** of the session on Single Aerosol Particle Studies (IV), 2016 American  
Aerosol Association Research annual conference (Portland, Oregon, 2016).

**Chair** of the session on Aerosol Physics, 2017 American Aerosol Association  
Research annual conference (Raleigh, NC, 2017).

**Chair** of the session on Aerosol Physics, 2018 American Aerosol Association  
Research annual conference (St Louis, MO, 2018).

**Chair** of the session on Aerosol Physics, 2019 American Aerosol Association  
Research annual conference (Portland, OR, 2019).

**Chair** of the 2022 AAAR symposium on Aerosol Physical Chemistry and  
Microphysics, Session V, (Durham NC, 2022)

**Chair**, Physics Working Group of the American Aerosol Association Research  
(2017-)

**Organizer/Chair** of the session on Fiber Optic Sensors at the Earth and Space 2010  
International Conference (Hawaii, March, 2010)

**Reviewer** of proposals funded by:

- National Science Foundation reviewer
- National Science Foundation review panelist for CBET (plasma, combustion and fire) and for CMMI (sensors and sensing systems)
- Department of Energy
- Ireland Health Research Board
- Hong Kong Research Grants Council
- Swiss National Science Foundation

**Referee** of publications for >30 international journals:

1. *Analytical Chemistry*
2. *Applied Physics Letters*
3. *Applied Spectroscopy*
4. *Aerosol Science and Technology*
5. *Combustion Science and Technology*
6. *European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics*
7. *IEEE Photonics*
8. *IEEE Sensors Journal*
9. *IEEE Trans on Plasma Science*
10. *J. Analytical Atomic Spectrometry*
11. *J. Aerosol Science*
12. *J. Biomedical Optics*
13. *J. Breath Research*
14. *J. Surface Coatings and Technology*
15. *J. Physical Chemistry*
16. *J. Physiology Measurements*
17. *J. Spectroscopy*
18. *Measurement Science and Technology*
19. *Nature*
20. *Optics Express*
21. *Optics Letters*
22. *Philosophical Transactions A*
23. *Photonics Research*
24. *Plasma Source Science and Technology*
25. *Proceedings of the National Academy of Sciences*
26. *Recent Patents on Signal Processing*
27. *Sensor Letters*
28. *Sensors and Actuators B*
29. *Smart Materials and Structures*
30. *Trends in Biotechnology*

## 2. Services in the departmental committees

- a. Faculty Mentor, College of A&S (2021-)
- b. Chair of Faculty Search Committee (Fall 2017-2018)
- c. Faculty Search Committee (Fall 2016-2017, 2017-2018, 2019-2020)
- d. Chair of Faculty Search Committee (Fall 2014-2015)
- e. Promotion and Tenure Committee (2014-2016, 2018-)
- f. Chair of Departmental Peer Teaching Evaluation Committee (2016-)
- g. Teaching Evaluation Committee (2014-)
- h. Departmental Seminar Committee (2007 Fall -2008 Fall, 2014-2015)
- i. College of Arts and Sciences Curriculum Committee (2010-2014)
- j. Physics Graduate Program Committee (2007-2015)
- k. Chair of Library Committee (2006 Fall - 2013)
- l. Chair of Ph.D. Preliminary Exam (Mechanics) (2007, 2008, 2010, 2012, 2016, 2017, 2018)
- m. Chair of Placement Exam (Mechanics, 2010)
- n. Spring Physics Competition Committee (2008 Fall - 2013)

## J. PROFESSIONAL MEMBERSHIPS

- American Physical Society
- American Chemical Society
- The International Society for Optical Engineering
- IEEE
- Society for Applied Spectroscopy
- American Aerosol Association Research (AAAR)

## K. AWARDS/HONOR/RECOGNITION

- **NSF Career Award (2010 converted to 2011 regular, upon the early promotion). CBET program, Program Manager, Prof. Arvind Atreya, [aatreya@umich.edu](mailto:aatreya@umich.edu).**
- **Dean's Eminent Scholar (2011)**
- **MSU Faculty Research Award (2011)**

- **James Worth Bagley Faculty Award** (2011)
- **State Pride Award** (2010)
- **Front cover**, Characterization of single fungal aerosol particles in a reactive atmospheric environment using time-resolved optical trapping-Raman spectroscopy (OT-RS), *Environmental Science: Atmospheres*, 2, 591-600 (2022). DOI: 10.1039/D2EA00030J ([Front cover](#))
- **Front cover**, *The temporal evolution process from fluorescence bleaching to clean Raman spectra of single solid particles optically trapped in air*, *Chemical Physics Letter*, 689, 100-104 (Dec. 2017)
- **Front cover**, *Optical trap-cavity ringdown spectroscopy as a single-aerosol-particle-scope*. *Applied Physics Letters*, 107, 241903 (2015).
- **ORAU Senior Fellowship** (one-year in US Army Research Lab)
- **Best Paper Award** (with \$1,000), *Sensors*, 2013, for paper “Breath Analysis Using Laser Spectroscopic Techniques: Breath Biomarkers, Spectral Fingerprints, and Detection Limits” *Sensors* 2009, 9(10), 8230-8262.
- **Best Paper Award** (with \$2,000), *IEEE Sensors Journal*, 2011, for paper “A Study on Breath Acetone in Diabetic Patients Using a Cavity Ringdown Breath Analyzer: Exploring Correlations of Breath Acetone With Blood Glucose and Glycohemoglobin A1C”, *IEEE Sensors Journal*, Vol. 10, No. 1, Jan. 2010. <http://www.ieee-sensors.org/awards>
- “**Highlighted Article**” of the journal in 2008, An acetone breath analyzer using cavity ringdown spectroscopy: an initial test with human subjects under various situations, C. Wang and A. B. Surampudi, *Measurement of Science and Technology*, 19, 105604-14 (2008).
- **Front cover** of the journal, issue 11<sup>th</sup>, Plasma-cavity ringdown spectroscopy (P-CRDS) for elemental and isotopic measurements, *Journal of Analytical Atomic Spectrometry*, 22, 1347-1363 (2007).
- “**Hot Article**”, Cavity ringdown measurements of mercury and Its hyperfine structures at 254 nm in an atmospheric microwave plasma: spectral interference and analytical performance”, *J. Analytical Atomic Spectrometry*, 20, 638 - 644 (2005).
- *Photonics Spectra*, “*Teams Try New Approaches to Fiber Sensors*”, by the Senior Editor, Breck Hitz, May 2004 Edition.
- *Opto & Laser Europe*, “*Tough fiber sensor survives extremes*”, by Editor, Oliver Graydon, 3/1/2004.

- *Nature News*, “Breath test for diabetes: Non-invasive test can pick up the whiff of disease.” Published online: 6 March 2007.
- **USA Today**, “Researchers invent diabetes test device”, reported by the Associate Press, 6/10/2004.
- **The New York Times**, “Researchers invent diabetes test device”, reported by the Associate Press, 6/10/2004.
- **American Chemical Society**, “Don’t Waste Your breath”, by the Associate Editor, Rajendrani Mukhopadhyay, 8/1/2004, *Analytical Chemistry*, 273 A.

#### **Other honors from the advised students:**

- **Robert Lee Cook Excellence in Graduate Research Award** (Zhiyong Gong, 2018, Ph.D. candidate)
- **Bagley College of Engineering Outstanding Graduate Student Award** (\$6,000), 2009, 2010 (Zhiyong Gong, Ph.D. candidate 2018)
- **Research Innovation Award (first place)** (Mahesh Grimier, 2017 -, Ph.D. candidate), the MSU Annual Graduate Student Research Symposium, 2017
- **Best Research Innovation Award** (Malik Kaya, 2009 -, Ph.D. candidate), the only one in the MSU Annual Graduate Student Research Symposium, 2012
- **Bagley College of Engineering Outstanding Graduate Student Award** (\$6,000), 2009, 2010 (Nimisha Srivastava, Ph.D. 2011)
- **Best Student Paper**, 2010 Earth and Science International Conference, Hawaii, 2010 (Chamini Herath, M.S. 2010)

#### **List of Publications (Articles, Proceedings, and Conference Presentations)**

##### **Articles in Peer-Reviewed Journals (>127)**

1. Yukai Ai, Chuji Wang, Yong-Le Pan, Gorden Videen, Characterization of single fungal aerosol particles in a reactive atmospheric environment using time-resolved optical trapping-Raman spectroscopy (OT-RS), *Environmental Science: Atmospheres*, **2**, 591-600 (2022). DOI: 10.1039/D2EA00030J ([Front cover](#))

2. Hafa Alali, Yukai Ai, Yong-le Pan, Gorden Videen, **Chuji Wang**, A Collection of Molecular Fingerprints of Single Aerosol Particles in Air for Potential Identification and Detection Using Optical Trapping-Raman Spectroscopy, *Molecules*, 27(18), 5966 (2022). <https://doi.org/10.3390/molecules27185966>
3. Yong-Le Pan, Kevin Aptowicz, Jessica Arnold, Samuel, Cheng, Aimable Kalume, P Piedra, **Chuji Wang**, Review of elastic light scattering from single aerosol particles and application in bioaerosol detection, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 279, 108067 (2022).
4. Rongrong Wu, Pedro J. Castro, Kyle Beiter, Theodore S. Dibble, **Chuji Wang**, Combined Experimental and Computational Kinetics Studies for the Atmospherically Important BrHg Radical Reacting with NO and O<sub>2</sub>, *J. Phys. Chem. A*, 126, 24, 3914–3925 (2022) [doi.org/10.1021/acs.jpca.2c02531](https://doi.org/10.1021/acs.jpca.2c02531)
5. Yong-Le Pan, Aimable Kalume, Jessica Arnold, Leonid Beresnev, **Chuji Wang**, Danielle N. Rivera, Kevin K. Crown, and Joshua Santarpia, Measurement of circular intensity differential scattering (CIDS) from single airborne aerosol particles for bioaerosol detection and identification, *Optics Express*, 30, 1442-1451(2022). <https://doi.org/10.1364/OE.448288>
6. **Chuji Wang**, Yong-Le Pan, and Gorden Videen, Optical Trapping and Laser-Spectroscopy Measurements of Single Particles in Air: A Review, *Measurement Science and Technology*, 32(10), 102005 (2021).
7. Aimable Kalume, **Chuji Wang**, and Yong-Le Pan, Optical-Trapping Laser Techniques for Characterizing Airborne Aerosol Particles and Its Application in Chemical Aerosol Study, *Micromachines*, 12(4), 466 (2021).
8. Yukai Ai, Haifa Alali, Yongle Pan, and Gorden Videen, **Chuji Wang**, Single-Particle Optical-Trapping Raman Spectroscopy for the Detection and Identification of Aerosolized Airborne Biological Particles, *Measurement Science and Technology*, 32(5), 055207 (2021).
9. Yong-Le Pan, Aimable Kalume, **Chuji Wang**, and Joshua Santarpia, Atmospheric Aging Processes of Bioaerosols under Laboratory-Controlled Conditions: A Review, *Journal of Aerosol Science*, 155, 105767 (2021).
10. Rongrong Wu, **Chuji Wang**, and Theodore S. Dibble, First Experimental Kinetic Study of the Atmospherically Important Reaction of BrHg + NO<sub>2</sub>, *Chemical Physics Letters*, 759, 137928 (2020).
11. Yukai Ai, Jing Li, Qingyuan Li, Meixiu Sun, Yingxin Li, and **Chuji Wang**, Cavity Ringdown Spectroscopy of Nitric Oxide in the Ultraviolet Region for Human Breath Test, *Journal of Breath Research*, 14(3), 037101 (2020).

12. Haifa Alali, Zhiyong Gong, Gorden Videen, Yong-Le Pan, Olga Muñoz, and **Chuji Wang**, Laser Spectroscopic Characterization of Single Extraterrestrial Dust Particles Using Optical Trapping-Cavity Ringdown and Raman Spectroscopy, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 255, 107249 (2020).
13. Che A. Fuh and **Chuji Wang**, Measurement of OH(X) in the Microwave Plasma-Assisted Ignition of Methane/Air Mixture by Cavity Ringdown Spectroscopy, *IEEE Transactions on Plasma Science*, 48(7), 2646-2652 (2020).
14. Nimisha Srivastava and **Chuji Wang**, Effect of N<sub>2</sub> and O<sub>2</sub> on OH radical production in an atmospheric helium microwave plasma jet, *Plasma Science and Technology*, 21, 115401 (2019)
15. Zhiyong Gong, Yong-Le Pan, Gorden Videen, and **Chuji Wang**, Chemical reactions of single optically trapped bioaerosols in a controlled environment, *Aerosol Science and Technology*, 53, 853-859 (2019)
16. Zhiyong Gong, Yong-Le Pan, Gorden Videen, and **Chuji Wang**, Online Characterization of Single Airborne Carbon Nanotube Particles Using Optical Trapping Raman Spectroscopy, *Applied Spectroscopy*, 73, 910-916 (2019)
17. Yong-Le Pan, Aimable Kalume, Isaac C. D. Lenton, Timo A. Nieminen, Alex B. Stilgoe, Halina Rubinsztein-Dunlop, Leonid A. Beresnev, **Chuji Wang**, and Joshua L. Santarpia, Optical-trapping of particles in air using parabolic reflectors and a hollow laser beam, *Optics Express*, 27, 33061-33069 (2019)
18. Zhiyong Gong, Yong-Le Pan, Gorden Videen, and **Chuji Wang**, Optical trapping and manipulation of single particles in air: Principles, technical details, and applications, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 214, 94–119 (2018) (Invited).
19. Zhiyong Gong, Yong-Le Pan, Gorden Videen, and **Chuji Wang**, Optical trapping-Raman spectroscopy (OT-RS) with embedded microscopy imaging for concurrent characterization and monitoring of physical and chemical properties of single particles, *Analytica Chimica Acta*, 1020, 86–94 (2018)
20. Maheshwar Ghimire, **Chuji Wang**, Kenneth Dixon, Michael Serrato, In situ monitoring of prestressed concrete using embedded fiber loop ringdown strain sensor, *Measurement*, 124, 224-232 (2018)
21. Chenyu Jiang, Meixiu Sun, Yingxin Li, **Chuji Wang**, Breath analysis using laser spectroscopy techniques: development and future, *Chinese Journal of Lasers*, 45(2): 0207015-19 (2018). (Invited)
22. Qiangu Yan, Xuefeng Zhang, Jinghao Li, El Barbary Hassan, **Chuji Wang**, Jilei Zhang, Zhiyong Cai, Catalytic conversion of Kraft lignin to bio-multilayer

- graphene materials under different atmospheres, *Journal of Materials Science*, 53, 8020-29 (2018).
23. Qiangu Yan, Jinghao Li, Xuefeng Zhang, El Barbary Hassan, **Chuji Wang**, Jilei Zhang, Zhiyong Cai, Catalytic graphitization of kraft lignin to graphene-based structures with four different transitional metals, *Journal of Nanoparticle Research* 20, 223-42 (2018).
  24. Che A. Fuh, **Chuji Wang**, A Novel Combustion Platform for Microwave Plasma-Assisted Combustion Studies, *IEEE Transactions on Plasma Science*, 46, 1800-1808, (2018)
  25. Yong-Le Pan, Aimable Kalume, **Chuji Wang**, Joshua L Santarpia, Opto-aerodynamic focusing of aerosol particles, *Aerosol Science and Technology*, 52, 13-18 (2018)
  26. Aimable Kalume, **Chuji Wang**, Joshua Santarpia, and Yong-Le Pan, Liquid–liquid phase separation and evaporation of a laser-trapped organic–organic airborne droplet using temporal spatial-resolved Raman spectroscopy, *Physical Chemistry Chemical Physics*, 20, 19151 (2018)
  27. Aimable Kalume, **Chuji Wang**, Joshua Santarpia, and Yong-Le Pan, Study of single airborne particle using laser-trapped submicron position-resolved temporal Raman spectroscopy, *Chemical Physics Letters*, 706, 255-260 (2018)
  28. Aimable Kalume, Eric Zhu, **Chuji Wang**, Joshua Santarpia, Yong-Le Pan, Position-resolved Raman spectra from a laser-trapped single airborne chemical droplet, *Optics Letters*, 42, 5113-5116 (2017)
  29. Zhiyong Gong, Yong-Le Pan, Gorden Videen, and **Chuji Wang**, The temporal evolution process from fluorescence bleaching to clean Raman spectra of single solid particles optically trapped in air, *Chemical Physics Letter*, 689, 100-104 (Dec. 2017) ([Front Cover](#)).
  30. Maheshwar Ghimire, Hong; Guo, Junpeng Guo, and **Chuji Wang**, Surface Plasmon-Based Fiber Loop Ringdown Sensor, *Sensor Letters*, 15, 565-569 (2017)
  31. Zhennan Wang, Meixiu Sun, Xiaomeng Zhao, Chenyu Jiang, Yingxin Li, and **Chuji Wang**, Study of Breath Acetone in a Rat Mode of 126 Rats with Type 1 Diabetes, *Journal of Analytical & Bioanalytical Techniques*, 8, 344, (2017) DOI: 10.4172/2155-9872.1000344
  32. Maheshwar Ghimire and **Chuji Wang**, Highly sensitive fiber loop ringdwon strain sensor with low temperature sensitivity, *Measurement Science and Technology* 28 (10), 105101 (2017).



33. Gangbing Song, **Chuji Wang**, and Bo Wang, Structural Health Monitoring (SHM) of Civil Structures, *Applied Sciences* (editorial) 7(8), 789 (2017).
34. Zhiyong Gong, Yong-Le Pan, and **Chuji Wang**, Characterization of single airborne particle extinction using the tunable optical trap-cavity ringdown spectroscopy (OT-CRDS) in the UV, *Optics Express* 25(6), 6732-6745 (2017).
35. Yong-Le Pan, **Chuji Wang**, Leonid A. Beresnev, Alex J. Yuffa, Gorden Videen, David Ligon, and Joshua L. Santarpia, Measurement of back-scattering patterns from single laser trapped aerosol particles in air, *Applied Optics*, 56, pp. B1-B4 (2017)
36. Richard Fu, **Chuji Wang**, Olga Muñoz, Gorden Videen, Joshua L. Santarpia, and Yong-Le Pan, Elastic back-scattering patterns via particle surface roughness and orientation from single trapped airborne aerosol particles, *Journal of Quantitative Spectroscopy and Radiative Transfer* 187, 224-231 (2017).
37. Che A. Fuh, Shane M. Clark, Wei Wu, and **Chuji Wang**, Electronic ground state OH(X) radical in a low-temperature atmospheric pressure plasma jet. *Journal of Applied Physics* 120, 163303 (2016).
38. Haifa Alali, and **Chuji Wang**, Fiber loop ringdown humidity Sensor. *Applied Optics* 55(31), 8938-8945 (2016).
39. Zhiyong Gong, Yong-Le Pan, and **Chuji Wang**, Optical configurations for photophoretic trap of single particles in air. *Review of Scientific Instruments* 87(10), 103104 (2016).
40. **Chuji Wang**, Zhiyong Gong, Yong-Le Pan, and Gorden Videen. Laser pushing or pulling of absorbing airborne particles. *Applied Physics Letters* 109(1), 011905 (2016).
41. Che A Fuh, Wei Wu, and **Chuji Wang**, Microwave plasma-assisted ignition and flameholding in premixed ethylene/air mixtures. *J. of Physics D: Applied Physics*, 49, 285202(2016).
42. Zhennan Wang, Meixiu Sun, and **Chuji Wang**, Detection of melanoma cancer biomarker Dimethyl Disulfide using cavity ringdown spectroscopy at 266 nm, *Applied Spectroscopy* 70(6), 1080-1085 (2016).

43. Yong-Le Pan, **Chuji Wang**, Leonid A. Beresnev, Alex J. Yuffa, Gorden Videen, David Ligon, and Joshua L. Santarpia, Measurement of back-scattering patterns from single laser trapped aerosol particles in air. *Applied Optics*, 56(3), pp. B1-B4 (2017), doi.org/10.1364/AO.56.0000B1.
44. Chenyu Jiang, Meixiu Sun, Zhennan Wang, Zhuying Chen, Xiaomeng Zhao, Yuan Yuan, Yingxin Li, and **Chuji Wang**, A portable real-time ringdown breath acetone analyzer: toward potential diabetic screening and management. *Sensors (Basel)*, 16, 1199 (2016).
45. **Chuji Wang**, Zhiyong Gong, Yong-Le Pan and Gorden Videen, Optical trap-cavity ringdown spectroscopy as a single-aerosol-particle-scope. *Applied Physics Letters*, 107, 241903 (2015). ([Front cover](#))
46. Peeyush Sahay, and **Chuji Wang**, Absolute measurements of electron impact excitation cross-sections of atoms using cavity ringdown spectroscopy. *Radiation Physics and Chemistry*, 106, 165–169 (2015).
47. Meixiu Sun, Chenyu Jiang, Zhiyong Gong, Xiaomeng Zhao, Zhuying Chen, Zhennan Wang, Meiling Kang, Yingxin Li, and **Chuji Wang**, A fully integrated standalone portable cavity ringdown breath acetone analyzer. *Review of Scientific Instruments*, Vol.86, No. 9, 095003 (2015).
48. Meixiu Sun, Xiaomeng Zhao, Huijuan Yin, Zhennan Wang, Chenyu Jiang, Weichao Liu, Zhuying Chen, Yuan Yuan, Yingxin Li, and **Chuji Wang**, Study of breath acetone and its correlations with blood glucose and blood beta-hydroxybutyrate using an animal model with lab-developed type 1 diabetic rats. *RSC Adv.* 5, 87, 71002–71010 (2015).
49. **Chuji Wang**, Yong-Le Pan, Steven C. Hill, and Brandon Redding. “Photophoretic Trapping-Raman Spectroscopy for Single Pollens and Fungal Spores Trapped in Air.” *Journal of Quantitative Spectroscopy and Radiative Transfer*, 153, 4–12 (2015).
50. Wei Wu, Che A Fuh, and **Chuji Wang**, Plasma-enhanced ignition and flame stabilization in microwave plasma-assisted combustion of premixed methane/oxygen/argon mixtures. *IEEE Transactions on Plasma Science*, 9, 3986 - 3994 (2015).
51. Brandon Redding, Steven C. Hill, Dimitri Alexson, **Chuji Wang**, and Yong-Le Pan, Photophoretic trapping of airborne particles using ultraviolet illumination, *Optics Express*, 23, 3630-3639 (2015). [Selected by the Editors, Andrew Dunn and](#)

Anthony Durkin, for publication in the *Virtual Journal for Biomedical Optics (VJBO)* **2015**.

52. Wei Wu, Che A. Fuh, and **Chuji Wang**, Comparative study on microwave plasma-assisted combustion of premixed and nonpremixed methane/air mixtures, *Combustion Science and Technology*, 187:7, 999-1020 (**2015**), DOI: 10.1080/00102202.2014.993032.
53. Meixiu Sun, Zhuying Chen, Zhiyong Gong, Xiaomeng Zhao, Chenyu Jiang, Yuan Yuan, Zhennang Wang, Yingxin Li, and **Chuji Wang**, Determination of breath acetone in 149 Type 2 diabetic patients using a ringdown breath-acetone analyzer, *Analytical and Bioanalytical Chemistry*, 407, 1641-50 (**2015**).
54. Haifa Alali, and **Chuji Wang**, Fiber loop ringdown gas flow sensors, *Measurement Science and Technology*, 25(11), 115102 (**2014**).
55. ZY Gong, MX Sun, CY Jiang, ZN Wang, ML Kang, YX Li, and **Chuji Wang**, A ringdown breath acetone analyzer: Performance and validation using gas chromatography-mass spectrometry, *Journal of Analytical & Bioanalytical Techniques*, S7-13 (**2014**).
56. Yongle Pan, **Chuji Wang**, Steven C. Hill, Mark Coleman, Leonid A. Beresnev, and Joshua L. Santarpia, Trapping of individual airborne absorbing particles using a counterflow nozzle and photophoretic trap for continuous sampling and analysis, *Applied Physics Letters*, 104(11), 113507 (**2014**).
57. Brandon Redding, Yong-Le Pan, **Chuji Wang**, and Hui Cao, Polarization-resolved near-backscattering of airborne aggregates composed of different primary particles, *Optics Letters*, 39(14), 4076-4079 (**2014**).
58. Peeyush Sahay, and **Chuji Wang**, Absolute measurements of electron impact excitation cross-sections of atoms using cavity ringdown spectroscopy, *Radiation Physics and Chemistry*, 106, 165-169, Online **2014**, [doi:10.1016/j.radphyschem.2014.07.005](https://doi.org/10.1016/j.radphyschem.2014.07.005)
59. **Chuji Wang**, Yong-Le Pan, and Mark Coleman, Experimental observation of particle cones formed by optical trapping, *Optics Letters*, 39(9), 2767-2770 (**2014**).

60. **Chuji Wang**, Yong-Le Pan, Steven C. Hill, and Brandon Redding, Photophoretic trapping-Raman spectroscopy for single pollens and fungal spores trapped in air, *Journal of Quantitative Spectroscopy and Radiative Transfer*, online 15 November 2014(2014),153,4-12 (2015), [doi:10.1016/j.jqsrt.2014.11.004](https://doi.org/10.1016/j.jqsrt.2014.11.004)
61. **Chuji Wang**, Yong-Le Pan, Deryck James, Alan E. Wetmore, and Brandon Redding, Direct on-strip analysis of size- and time-resolved aerosol impactor samples using laser induced fluorescence spectra excited at 263 and 351 nm, *Analytica Chimica Acta*, 820, 119-132 (2014).
62. **Chuji Wang**, and Wei Wu, Roles of the state-resolved OH(A) and OH(X) radicals in microwave plasma assisted combustion of premixed methane/air: An exploratory study, *Combustion and Flame*, 161(8), 2073-2084 (2014).
63. Zhennan Wang, **Chuji Wang**, and Patty Lathan, Breath acetone analysis of diabetic dogs using a cavity ringdown breath analyzer, *Sensors Journal IEEE*, 14(4), 1117-1123 (2014).
64. **Chuji Wang**, Fiber Loop Ringdown Sensors and Sensing, *Cavity-Enhanced Spectroscopy and Sensing*, 2014 – Springer.
65. **Chuji Wang** and Wei Wu, Simultaneous measurements of OH(A) and OH(X) radicals in microwave plasma jet assisted combustion of methane/air mixtures around the lean-burn limit using optical emission spectroscopy and cavity ringdown spectroscopy, *Journal Physics D: Applied Physics*. 46, 464008 (2013).
66. **Chuji Wang**, Malik Kaya, Peeyush Sahay, Haifa Alali, and Robert Reese, Fiber optic sensors and sensor networks using a time-domain sensing scheme, *Optics and Photonics Journal*, 3, 236-239 (2013).
67. Peeyush Sahay, Susan T. Scherrer and **Chuji Wang**, Measurements of the Weak UV Absorptions of Isoprene and Acetone at 261–275 nm Using Cavity Ringdown Spectroscopy for Evaluation of a Potential Portable Ringdown Breath Analyzer, *Sensors* 13, 8170-8187 (2013).
68. Zennan Wang and **Chuji Wang**, Is breath acetone a biomarker of diabetes—a historical review on breath acetone measurements, *Journal of Breath Research*, 7, 037109 (2013).
69. ZhennanWang, **Chuji Wang**, and Patty Lathan, Breath Acetone Analysis of Diabetic Dogs Using a Cavity Ringdown Breath Analyzer, *IEEE Sensors Journal*, 99, 1-5 (2013)

70. Peeyush Sahay, Malik Kaya, and Chuji Wang, Fiber loop ringdown sensor for potential real-time monitoring of cracks in concrete structures: An exploratory study, *Sensors*, 13, 39-57 (2013)
71. Chuji Wang, Fiber loop ringdown sensors and sensor network, an invited **book chapter** for *Cavity Enhanced Spectroscopy and Sensing*, Springer. Springer Series in Optical Sciences Volume 179, 2014, pp 411-461. ISBN: 978-3-642-40002-5 (online 2013, print 2014)
72. Chuji Wang, Cavity ringdown spectroscopy of plasma species, an invited **book chapter** for *Low Temperature Plasma Technology: Methods and Applications*, Publisher: CRC Press; 1 edition. ISBN-10: 1466509902. (July 12, 2013)
73. Malik Kaya, Peeyush Sahay, and **Chuji Wang**, Reproducibly reversible fiber loop ringdown water sensor embedded in concrete and grout for water monitoring, *Sensors and Actuators B*, 176, 803-10 (2012).
74. Peeyush Sahay, Susan T. Scherrer, and **Chuji Wang**, A portable OES-CRDS dual-mode plasma spectrometer for measurements of environmentally important trace heavy metals: initial test of elemental Hg, *Review Scientific Instrument*, 83, 095109-095122 (2012).
75. **Chuji Wang**, Susan T. Scherrer, and Peeyush Sahay, Electron impact excitation-cavity ringdown absorption spectrometry of elemental mercury at 405 nm, *Journal of Analytical Atomic Spectrometry*, 27, 284-292 (2012).
76. **Chuji Wang**, Malik Kaya, and Charlotte Wang, Evanescent field fiber loop ringdown glucose sensor, *Journal of Biomedical Optics*. 17(3), 037004-13 (2012).
77. Nimisha Srivastava and **Chuji Wang**, Effects of addition of trace water on OH radical generation and plasma properties in an atmospheric argon microwave plasma jet, *Journal of Applied Physics*, 110, 053304; doi:10.1063/1.3632970 (9 pages) (2011).
78. **Chuji Wang**, Peeyush Sahay, and Susan T. Scherrer, A New Optical Method of Measuring Electron Impact Excitation Cross Section of Atoms: Cross Section of the Metastable  $6s6p\ ^3P_0$  Level of Hg, *Physics Letters A*, 375, 2366-2370 (2011).
79. Chamini Herath, **Chuji Wang**, M. Kaya, and D. Chevalier, Fiber loop ringdown DNA and bacteria sensors, *Journal of Biomedical Optics Letters*, 16, 050501-3 (2011). (Selected by [Virtual Journal of Biophysics Research](#), May 15, 2011)
80. Yicheng Du, **Chuji Wang**, Hossein Toghiani, Zhiyong Cai, Xiaojian Liu, Jilei Zhang, and Qiang Yan, Synthesis of carbon-encapsulated metal nanoparticles from wood char, *Forest Prod. J.* 60(6):527–533 (2011).

81. Nimisha Srivastava and **Chuji Wang**, Determination of OH radicals in an atmospheric pressure helium microwave plasma jet, *IEEE Transaction on Plasma Science*, 39, 918-24 (2011).
82. Du, Y., J. Zhang, **Chuji Wang**, T. E. Lacy, Y. Xue, H. Toghiani, M. F. Horstemeyer, and C. U. Pittman. Kenaf bast fiber bundle-reinforced unsaturated polyester composites IV: water resistance and composite mechanical properties improvement, *Forest Products Journal*, 60(4), 366–372 (2010).
83. **Chuji Wang** and Nimisha Srivastava, Cavity ringdown spectroscopic measurements of OH number densities in atmospheric microwave plasma jets operating with different plasma gases (Ar, Ar/N<sub>2</sub>, and Ar/O<sub>2</sub>), *European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics*, 60, 465-477( 2010).
84. **Chuji Wang** and Chamini Herath, Fabrication and characterization of fiber loop ringdown evanescent field sensors, *Measurement Science and Technology*, 21, 08205-15 (2010).
85. **Chuji Wang** and Chamini Herath, High-sensitivity fiber-loop ringdown evanescentfield index sensors using single-mode fiber, *Optics Letters*, 35, 1629-1631 (2010).
86. **Chuji Wang**, Armstrong Mbi, and Mark Shepherd, A study on breath acetone in diabetic patients using a cavity ringdown breath analyzer: Exploring correlations of breath acetone with blood glucose and glycohemoglobin A1C, *IEEE Sensors Journal*, 10, 54 – 63, (2010). ([IEEE Sensors Journal Best Paper Award of the year, 2011](#))
87. **Chuji Wang**, Fiber loop ringdown--a time-domain sensing technique for multi-function fiber optic sensor platforms: current status and design perspectives, *Sensors*, 9(10), 7595-7621 (2009) (Invited contribution to a special issue (Physical Sensors) by Guest Editor, Dr. Markus W. Sigrist, Swiss Federal Institute of Technology (ETH), Zürich, Institute for Quantum Electronics, Basel, Switzerland).
88. **Chuji Wang** and Peeyush Sahay, Breath analysis using high-sensitivity laser spectroscopic techniques: breath biomarkers, spectral finger prints, and detection limits, *Sensors*, 9, 8230-8262 (2009) (Invited contribution to a special issue (Chemical Sensors) by Guest Editor, Dr. JinJun Shi, Massachusetts Institute of Technology). ([Best Paper Award, 2013](#)).
89. **Chuji Wang**, Nimisha Srivastava, and Theodore S. Dibble, Observation and quantification of OH radicals in the far downstream part of an atmospheric microwave plasma using cavity ringdown spectroscopy, *Applied Physics Letters*, 95, 051501-3 (2009).

90. Nimisha Srivastava, **Chuji Wang**, and Theodore S. Dibble, A study of OH radicals in an atmospheric AC discharge plasma using near infrared diode laser cavity ringdown spectroscopy combined with optical emission spectroscopy, *European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics*, 54, 77-86 (2009).
91. **Chuji Wang**, Nimisha Srivastava, Susan Scherrer, Ping-Rey Jang, Theodore S. Dibble, and Yixiang Duan, Optical diagnostics of a low power - low gas flow rates atmospheric-pressure argon plasma created by a microwave plasma torch, *Plasma Sources Science and Technology*, 18, 025030-41 (2009).
92. **Chuji Wang**, George P. Miller, Christopher B. Winstead, **Book Chapter**: Cavity Ringdown Laser Absorption Spectroscopy. *Encyclopedia of Analytical Chemistry*, R. A. Meyers (Ed.), *John Wiley & Sons*, 2008 (20 pages). (Wang is the corresponding author).
93. **Chuji Wang** and Anand B Surampudi, An acetone breath analyzer using cavity ringdown spectroscopy: an initial test with human subjects under various situations, *Measurement Science and Technology*, 19, 105604-14 (2008). ([selected as Highlighted Article of the journal in 2008](#))
94. **Chuji Wang**, N. Srivastava, B.A. Jones, R.B. Reese, A novel multiple species ringdown spectrometer for in situ measurements of methane, carbon dioxide, and carbon isotope, *Applied Physics B*, 92, 259-70 (2008).
95. **Chuji Wang** and A Mbi, A new acetone detection device using cavity ringdown spectroscopy at 266 nm: evaluation of the instrument performance using acetone sample solutions. *Measurement Science and Technology*, 18, 2731-2741(2007).
96. **Chuji Wang**, Plasma-cavity ringdown spectroscopy (P-CRDS) for elemental and isotopic measurements. *Journal of Analytical Atomic Spectrometry*, 22, 1347-63 (2007). ([Invited, featured on the front cover of the journal, issue 11<sup>th</sup>](#))
97. P. Cias, **Chuji Wang**, and T. S. Dibble, Absorption cross-sections of the C-H overtone of volatile organic compounds: 2 methyl-1,3-butadiene (Isoprene), 1,3-butadiene, and 2,3-dimethyl-1,3-butadiene. *Applied Spectroscopy*, 61, 230-236 (2007).
98. F-X Han, Jeff S. Lindner, and **Chuji Wang**, Making carbon sequestration a paying proposition. *Naturwissenschaften*, 94, 170-182 (2007).
99. **Chuji Wang** and Armstrong Mbi, Optical superposition in double fiber loop ringdown. *Proc. of SPIE 6377*, 6377021-8 (2006) (8 pages). (**Invited**).
100. **Chuji Wang** and Armstrong Mbi, An alternative method to develop fibre grating temperature sensors using the fibre loop ringdown scheme. *Measurement Science and Technology*, 17(7), 1741-1751 (2006).

101. **Chuji Wang**, Susan T. Scherrer, Yixiang Duan, and Christopher B. Winstead, Cavity ringdown measurements of mercury and its hyperfine structures at 254 nm in an atmospheric microwave plasma: spectral interference and analytical performance. *Journal of Analytical Atomic Spectrometry* 20(7), 638-644 (2005). ([Hot Article](#))
102. Yixiang Duan, **Chuji Wang**, Susan T. Scherrer, and Christopher B. Winstead, Development of alternative plasma sources for cavity ring-down measurements of mercury. *Analytical Chemistry*, 77(15), 4883-4889 (2005).
103. Yixiang Duan, Susan T. Scherrer, Sudip P. Koirala, **Chuji Wang**, and Christopher B. Winstead, Uranium emission spectra with a low power microwave plasma source. *Analytica Chimica Acta*, 532(1), 47-54 (2005).
104. **Chuji Wang**, Fiber ringdown temperature sensors. *Optical Engineering Letters*, 44(3), 030503-5 (2005).
105. **Chuji Wang**, Sudip P. Koirala, Susan T. Scherrer, Yixiang Duan, and Christopher B. Winstead, Diode laser microwave induced plasma cavity ringdown spectrometer: Performance and perspective. *Review of Scientific Instruments*, 75(5), 1305-13 (2004).
106. **Chuji Wang** and Susan T. Scherrer, Fiber loop ringdown for physical sensor development: pressure sensor. *Applied Optics*, 43(35), 6458-64 (2004).
107. **Chuji Wang** and Susan T. Scherrer, Fiber ringdown pressure sensors. *Optics Letters*, 29(4), 352-4 (2004).
108. **Chuji Wang**, Susan T. Scherrer, and D. Hossain, Measurements of cavity ringdown spectroscopy of acetone in the ultraviolet and near-infrared spectral regions: Potential for development of a breath analyzer. *Applied Spectroscopy*, 58(7), 784-791 (2004).
109. **Chuji Wang**, Fabio J. Mazzotti, Sudip P. Koirala, Christopher B. Winstead, and George P. Miller, Measurements of OH radicals in a low-power atmospheric inductively coupled plasma by cavity ringdown spectroscopy. *Applied Spectroscopy*, 58(6), 734-740 (2004).
110. **Chuji Wang**, Christopher B. Winstead, Yixiang Duan, Susan T. Scherrer, Sudip P. Koirala, Ping-Rey Jang, George P. Miller, and Fabio J. Mazzotti, Plasma cavity ringdown spectrometer for elemental and isotopic measurements: Past, present and future. *Environmental Chemistry*, 44(1), 518-522 (2004).
111. Yixiang Duan, **Chuji Wang**, and Christopher B. Winstead, Exploration of microwave plasma source cavity ring-down spectroscopy for elemental



- measurements. *Analytical Chemistry*, 75(9), 2105-2111 (2003).
112. **Chuji Wang**, Fabio J. Mazzotti, George P. Miller, and Christopher B. Winstead, Isotopic measurements of uranium using inductively coupled plasma cavity ringdown spectroscopy. *Applied Spectroscopy*, 57(9), 1167-1172 (2003).
113. **Chuji Wang**, Fabio J. Mazzotti, George P. Miller, and Christopher B. Winstead, Cavity ringdown spectroscopy for diagnostic and analytical measurements in an inductively coupled plasma. *Applied Spectroscopy*, 56(3), 386-397 (2002).
114. **Chuji Wang**, Wei Deng, Liat G. Shemesh, Michael D. Lilien, David R. Katz, and Theodore S. Dibble, Observation of Fluorescence Excitation Spectra of tert-Pentoxy and 3-Pentoxy Radicals. *Journal of Physical Chemistry A*, 104(45), 10368-10373 (2000).
115. Deng W, **Chuji Wang**, David R. Katz, G. R. Gawinski, A. J. Davis, and Theodore S. Dibble, Direct kinetic studies of the reactions of 2-butoxy radicals with NO and O<sub>2</sub>. *Chemical Physical Letters*, 330, 541-5 (2000).
116. **Chuji Wang**, Liat G. Shemesh, Wei Deng, Michael D. Lilien, and Theodore S. Dibble, Laser-Induced Fluorescence Excitation Spectra of tert-Butoxy and 2-Butoxy Radicals. *Journal of Physical Chemistry A*, 103(41), 8207-8212 (1999).
117. **Chuji Wang**, Yingsheng Xiao, Qin Ran, Congxiang Chen, Shuqin Yu, and Xingxiao Ma, Laser-induced fluorescence excitation spectra of supersonic jet-cooled CF<sub>2</sub>. *Chinese Journal of Chemical Physics*, 11(1), 31-36 (1998).
118. **Chuji Wang**, Yingsheng Xiao, Congxiang Chen, Shuqin Yu, and Xingxiao Ma, Laser-induced fluorescence excitation spectra of supersonic jet-cooled SO<sub>2</sub> 1A<sub>2</sub>1A<sub>1</sub>. *Chinese Journal of Chemical Physics*, 11(6), 542-547 (1998).
119. **Chuji Wang**, Congxiang Chen, Jinghua Dai, and Xingxiao Ma, Laser-induced fluorescence studies of jet-cooled CF<sub>2</sub>: determination of A-state stretching frequencies. *Chemical Physics Letters*, 288 (2,3,4), 473-480 (1998).
120. Limin Zhang, Jun Chen, Jinghua Dai, **Chuji Wang**, Tao Zhang, Congxiang Chen, and Xingxiao Ma, Multiphoton dissociation and ionization of CS<sub>2</sub> in the range 242-260 nm. *Chinese Journal of Physical Chemistry*, 14(11), 1007-1012 (1998).
121. **Chuji Wang**, Jun Chen, Tao Zhang, Limin Zhang, Jinghua Dai, Congxiang Chen, and Xingxiao Ma, Rotational analyses of laser-induced fluorescence excitation spectra of the supersonic jet-cooled SO<sub>2</sub>(~A 1A<sub>2</sub>~X 1A<sub>1</sub>) system. *Wuli Xuebao*, 47(8), 1258-1264 (1998).
122. **Chuji Wang**, Jian Wang, and Xingxiao Ma, Theoretical treatment of radiation trapping of atomic fluorescence in V-E energy transfer. *Wuli Xuebao*, 47(2), 198-

207 (1998).

123. **Chuji Wang**, Yingsheng Xiao, Qin Ran, Yiwei Chu, Congxing Chen, Shuqin Yu, and Xingxiao Ma, Determination of A-state stretching frequencies of CF<sub>2</sub> radical. Chinese Journal of Physical Chemistry, 13(4), 297-300 (1997).
124. Jian Wang, **Chuji Wang**, Re Lai, and Xingxiao Ma, Validity of detail balance in hyperfine structure with radiation trapping. Chinese Journal of Quantum Electronics, 14(1)1, 18-22 (1997).
125. **Chuji Wang**, Yingshen Xiao, Qin Ran, Yiwei Chu, Congxiang Chen, Shuqin Yu, and Xingxiao Ma, Measurement of A-state stretching frequencies of CF<sub>2</sub> radical. Chinese Acta Physico-chimica Sinica, 13, 297-302 (1997).
126. Yang Chen, JinianShu, **Chuji Wang**, Congxiang Chen, Shuqin Yu, and Xingxiao Ma, Laser-induced fluorescence excitation spectrum of C<sub>3</sub> cooled in a supersonic free jet. Chinese Journal of Chemical Physics, 9(4), 287-292 (1996).
127. Jian Wang, **Chuji Wang**, Re Lai, and XingXiao Ma, Detailed balance in hyperfine structure with radiation trapping. Zeitschrift fuer Physik D: Atoms, Molecules and Clusters, 38(2), 113-117 (1996).

### **Peer-reviewed Conference Proceedings (13)**

1. Aimable Kalume, **Chuji Wang**, Joshua Santarpia, and Yong-Le Pan, Submicron position-resolved Raman spectra for characterizing laser-trapped single airborne particles, Biophotonics Congress: Biomedical Optics Congress 2018, OSA Technical Digest, paper JW3A.39, <https://doi.org/10.1364/TRANSLATIONAL.2018.JW3A.39>
2. Aimable Kalume, Zhiyong Gong, **Chuji Wang**, Joshua Santarpia, Yong-Le Pan, Detection and characterization of chemical and biological aerosols using laser-trapping single-particle Raman spectroscopy, WIT Transactions on Ecology and the Environment, 230:323–329 (2018). <https://doi.org/10.2495/AIR180301>.
3. Maheshwar Ghimire and **Chuji Wang**, Development of high-sensitivity fiber loop ringdown micro air-gap strain sensor, Advanced Photonics 2017 (IPR, NOMA, Sensors, Networks, SPPCom, PS) OSA Technical Digest (online) (Optical Society of America, 2017), paper <https://doi.org/10.1364/SENSORS.2017.SeW1E.4>
4. Wei Wu, Che Fuh, and **Chuji Wang**, Two dimensional OH radical measurements in argon plasma-assisted combustion flame of premixed and nonpremixed methane/air mixtures using cavity ringdown spectroscopy, 44th American Institute of Aeronautics and Astronautics, June 16-20, 2014, Atlanta GA.

5. Che Fuh, Weiwu, and **Chuji Wang**, Effects of a microwave induced argon plasma jet on premixed and nonpremixed methane/air mixtures, 44th American Institute of Aeronautics and Astronautics, June 16-20, 2014, Atlanta GA.
6. W. Wu, C. Fuh, and **Chuji Wang**, “2-D measurements of OH radicals in PAC of premixed and nonpremixed methane/air mixture,” in *International Conference on Plasma Science (ICOPS)*, Washington DC, May 25-29, 2014.
7. **Chuji Wang**, “Invited Minicourse lecture (60 mins), entitled ‘Cavity Ringdown Spectroscopy for Atmospheric Plasma,’” in *in the International Conference in Plasma Science*, Washington DC, May 25-29, 2014.
8. Malik Kaya and **Chuji Wang**, Fiber loop ringdown glucose sensor—initial test in human urine, Proceedings of the SPIE, May 6-9, Baltimore, MD, 2014.
9. Malik Kaya and **Chuji Wang**, Fiber loop ringdown glucose sensor (8 pages), Proceedings of SPIE, Photonics, San Diego, CA, August **2012**.
10. **Chuji Wang** and Chamini Herath, A Fiber Loop Ringdown Evanescent Field Sensing Platform: High Sensitivity Index Sensor (5 pages), Proceedings of 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 7-10, Atlanta, GA, **2011**.
11. **Chuji Wang** and An emerging time-domain sensing technique for large scale, multi-function fiber optic sensor networks, Proceedings of SPIE 7647, 76471M (2010). SPIE Smart Structure and Materials & Nondestructive Evaluation and Health Monitoring, March 7 – 11, San Diego, CA **2010**.
12. **Chuji Wang**, Launch Cavity Ringdown Spectroscopy from Earth to Space, Proceedings of the 12th ASCE Aerospace Division International Conference, Intelligent Sensors and Actuators, pg. 1644, doi: 10.1061/41096(366)149, (2010). The Biannual Earth & Space 2010 International Conference, Hawaii, March, 14-19, **2010**.
13. Chamini Herath and **Chuji Wang**, High precision fiber loop ringdown chemical corrosion sensors, Proceedings of the 12th ASCE Aerospace Division International Conference, Intelligent Sensors and Actuators, pg. 1609, doi: 10.1061/41096(366)145, (2010). The Biannual Earth & Space 2010 International Conference, March, 14-19, **2010**. Hawaii.

### **Conference Presentations (137)**

1. Rongrong Wu and Chuji Wang, Measuring Multiple Plasma Reactive Species in Complex Settings Using an Innovative Approach of Cavity Ringdown

Spectroscopy, The 48th The International Conference on Plasma Science (ICOPS), Lake Tahoe, NV, USA, Sep. 12 – 16, **2021**.

2. Rongrong Wu, Chuji Wang, and Theodore Dibble, Experimental Kinetics Study of Missing Mercury Oxidation Pathways of BrHg + O<sub>3</sub> and NO, ACS 2021 Fall Meeting, Atlanta, GA, USA, Aug. 22-26, **2021**.
3. Rongrong Wu, Chuji Wang, and Theodore Dibble, Kinetics of the Reactions of BrHg radical with NO<sub>2</sub> and O<sub>3</sub>, APS 2021 March Meeting, Virtual, USA, Mar. 15-19, **2021**.
4. Rongrong Wu, Chuji Wang, and Theodore Dibble, Kinetics of the reactions of BrHg radical with NO<sub>2</sub> and O<sub>3</sub>, The 19th Graduate Student Research Symposium, Virtual, USA, Feb. 26, **2021**.
5. Cameron Gaito, Rongrong Wu, Chuji Wang, and Theodore Dibble, Kinetic Study of the Atmospheric Reaction of BrHg Radical with O<sub>3</sub>, Mississippi State University Spring 2021 Virtual Undergraduate Research Symposium, Virtual, United, Apr 8-9, **2021**.
6. Cameron Gaito, Rongrong Wu, Chuji Wang, and Theodore Dibble, Kinetic Study of the Atmospheric Reaction of BrHg Radical with O<sub>3</sub>, Mississippi Local Section of the American Chemical Society 2021 Virtual Undergraduate Research Symposium, Virtual, United States, Apr 8-9, **2021**.
7. Theodore Dibble, Khiri, Dorra, Louis, Florent, Černušák, Ivan, Rongrong Wu, and Chuji Wang, Recent Advances in Understanding Mercury Redox Chemistry. EnvChem2020: Chemistry of the Whole Environment Research, York, UK, Jul. 9-10, **2020**.
8. Rongrong Wu, Chuji Wang, and Theodore Dibble, First Experimental Kinetic Study of the Atmospherically Important Reaction of BrHg + NO<sub>2</sub>, ACS Fall 2020 Virtual Meeting & Expo, Virtual, United States, Aug. 17-20, **2020**.
9. Haifa Alali, Zhiyong Gong, Gorden Videen, Yong-Le Pan, Olga Muñoz, and Chuji Wang, Optical Trapping-Cavity Ringdown and Raman Spectroscopy for Characterization of Single Extraterrestrial Dust Particles, OSA Frontiers in Optics Laser Science APS/DLS, Washington, DC, United States, Sept.14-17, **2020**.
10. Pubudini Ekanayaka and Chuji Wang, Generation and Characterization of HgBr Radical in Low Temperature Atmospheric Pressure Plasma Jets, Gaseous Electronics Conference, GEC, 73rd Annual Conference, Virtual, United States, Oct. 5-9, **2020**.

11. Chuji Wang, Yukai Ai, Haifa Alali, Gorden Videen, and Yongle Pan, Optical Trapping-Raman Spectroscopy for Detection of Chemical and Biological Agents in Air, the 38th American Aerosol Association Research Annual Conference, Virtual, United States, Oct. 5-9, **2020**.
12. Haifa Alali, Zhiyong Gong, Gorden Videen, Yong-Le Pan, Olga Muñoz, and Chuji Wang, Characterization of Single Extraterrestrial Dust Particles Using Optical Trapping-Cavity Ringdown and Raman Spectroscopy, FACSS Scix 2020, Virtual, United States, Oct. 12-15, **2020**.
13. Chuji Wang, Cavity Ringdown Measurement of OH(x) in the Microwave Plasma-Assisted Ignition (Abstract #: TA2-S7-027), The 47th The International Conference on Plasma Science (ICOPS), Singapore, Dec. 6-10, **2020**.
14. Theodore S Dibble, Rongrong Wu, and Chuji Wang, First Experimental Studies of the Kinetics of BrHg Radical Reactions Relevant to the Atmosphere, AGU Fall Meeting 2019, San Francisco, California, Dec. 09-13, **2019**.
15. Chuji Wang, Zhiyong Gong, Yong-Le Pan, Aimable Kalume, and Gorden W. Videen, Optical Trapping-Raman-Cavity Ringdown Spectroscopy for Single-Particle Sensing of Chemical and Biological Agents in Air, 2019 CBD S&T Conference, Cincinnati, Ohio, Nov. 18-21, **2019**.
16. Yong-Le Pan, Aimable Kalume, and Zhiyong Gong, Detection and characterization of single airborne particles using laser spectroscopy and universal optical trap, 2019 CBD S&T Conference, Cincinnati, Ohio, Nov. 18-21, **2019**.
17. Chuji Wang and Che A Fuh, Cavity ringdown measurement of OH(X) in the microwave plasma-assisted ignition, 72nd Annual Gaseous Electronics Conference, College Station, Texas, Oct. 28 – Nov. 1, **2019**.
18. Chuji Wang, Zhiyong Gong, Gorden Videen, and Yong-Le Pan, Chemical Reactions on Optically Trapped Single Particles, AAAR 37th Annual Conference, Portland, Oregon, Oct.14-18, **2019**.
19. Chuji Wang, Zhiyong Gong, Gorden Videen, and Yong-Le Pan, Optical trapping and manipulations for single airborne particle studies, 50th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Milwaukee, Wisconsin, May 27–31, **2019**.
20. Yong-Le Pan, Aimable Kalume, Zhiyong Gong, Chuji Wang, and Joshua Santarpia, Study of single airborne particle using laser spectroscopy and universal optical-trapping, Optical Manipulation and Its Applications, Tucson, Arizona, Apr.15–17, **2019**.

21. Zhiyong Gong, Yong-Le Pan, Gorden Videen, Chuji Wang, Touch-free chemical analysis of single airborne particles using optical trapping-Raman spectroscopy (OT-RS), FACSS. Atlanta, Georgia, Oct. 21-26, **2018**.
22. Rongrong Wu, Che Fuh, Chuji Wang, and Theodore Dibble, Laser photolysis-cavity ringdown spectroscopy study of atomic bromine-initiated oxidation of elemental mercury in atmosphere, FACSS. Atlanta, GA, Oct. 21-26, **2018**.
23. Maheshwar Ghimire and Chuji Wang, Integration of surface plasmon-based sensor in fiber loop ringdown system, FACSS. Atlanta, GA, Oct. 21-26, **2018**.
24. Chuji Wang, Meixiu Sun, Chenyu Jiang, Yukai Ai, Yingxin Li, Laser spectroscopy for breath analyzers from instrumentation to clinical application, FACSS. Atlanta, GA, Oct. 21-26, **2018**.
25. Aimable Kalume, Chuji Wang, Joshua Santarpia, Yong-Le Pan, Anatomy of single airborne aerosol particle using laser-trapped submicron position-resolved temporal Raman spectra, 10th International Aerosol Conference, St. Louis, MI, Sept. 2-7, **2018**.
26. Aimable Kalume, Chuji Wang, Joshua Santarpia, Patricio Piedra, Yong-Le Pan, Dynamics of liquid-liquid phase-separation using spatial-resolved Raman spectroscopy of a laser-trapped mixed organic-organic aerosol droplet. 10th International Aerosol Conference, St. Louis, MI, Sept. 2-7, **2018**.
27. Zhiyong Gong, Yong-Le Pan, Gorden Videen, Chuji Wang, Optical trapping-Raman spectroscopy (OT-RS) for concurrent characterization and monitoring of physical and chemical properties of single airborne particles, 10th International Aerosol Conference, St. Louis, MI, Sept. 2-7, **2018**.
28. Chuji Wang, Zhiyong Gong, Gorden Videen, Yong-Le Pan, Single airborne particle studies using optical trapping and manipulations: What we have and what we have not, 10th International Aerosol Conference, St. Louis, MI, Sept. 2-7, **2018**.
29. Zhiyong Gong, Chuji Wang, Yong-Le Pan, and Gorden Videen, Measuring physical properties and heterogeneous chemistry of single airborne particles concurrently using OT-RS, 11th Laser-light and Interactions with Particles conference, College Station, TX, Mar. 04-09, **2018**.
30. Zhiyong Gong, Chuji Wang, Yong-Le Pan, and Gorden Videen, Characterizing physical properties and heterogeneous chemistry of single particles in air using optical trapping-Raman spectroscopy, AGU Fall meeting, New Orleans, LA, Dec. 11-15, **2017**.

31. Chuji Wang, Zhiyong Gong, Yong-Le Pan, and Gorden Videen, Single aerosol particle studies using optical trapping Raman and cavity ringdown spectroscopy, AGU Fall meeting, New Orleans, LA, Dec. 11-15, **2017**.
32. Maheshwar Ghimire and Chuji Wang, Development of high-sensitivity fiber loop ringdown micro air-gap strain sensor, in: Adv. Photonics 2017, New Orleans LA, July 24-27, **2017**.
33. Maheshwar Ghimire and Chuji Wang, Simultaneous in situ monitoring of axial stress in post tensioned concrete and rod using fiber loop ringdown sensors, IEEE Photonics Conference, Orlando FL, Oct 1-5, **2017**.
34. Chuji Wang, Zhiyong Gong, Yong-Le Pan, and Gorden Videen, Single airborne aerosol particle Raman and cavity ringdown spectroscopy, AAAR, Raleigh, NC, Oct. 16-20, **2017**.
35. Yong-Le Pan, Aimable Kalume, Chuji Wang, Joshua L. Santarpia, Opto-aerodynamic manipulating and focusing of aerosol particles, AAAR, Raleigh, NC, Oct. 16-20, **2017**.
36. Chuji Wang, Investigation of chemical agitations on single chemical and biological aerosol particles in air using optical trapping-Raman spectroscopy, US Army Research Office Annual Project Review Meeting, Raleigh, NC, Aug. 7-11, **2017**.
37. Chuji Wang, Zhiyong Gong, Yong-Le pan, and Gorden Videen, Single airborne aerosol particle Raman and cavity ringdown spectroscopy, Isalsars 2017, Heife, China, June 19-23, **2017**.
38. Yong-Le Pan, Richard Fu, Gorden Videen, Chuji Wang, Joshua L. Santarpia, Simultaneous measurement of elastic back-scattering patterns and images from laser-trapped single airborne particles, Isalsars 2017, Heife, China, June 19-23, **2017**.
39. Che Fuh, Wei Wu and Chuji Wang, Microwave plasma-assisted ignition and flameholding premixed ethylene/air mixtures, The 44<sup>th</sup> International Conference on Plasma Science, Atlantic City, New Jersey, May 21-25, **2017**.
40. Zhiyong Gong, Chuji Wang and Yong-Le Pan, Optical trapping and manipulation configurations for measuring light extinctions of single particles, The 16<sup>th</sup> Electromagnetic and Light Scattering Conference (ELS-XVI), College park, Maryland, Mar. 19-25, **2017**.
41. Zhiyong Gong, Yong-Le Pan, and Chuji Wang, Optical configurations for photophoretic trap of single particles in air, American Aerosol Association Research, 35<sup>th</sup> Annual Conference, Portland, Oregon, Oct. 17-22, **2016**.

42. Chuji Wang, Zhiyong Gong, Yong-Le Pan, Gorden Videen, Laser pushing or pulling of absorbing airborne particles, American Aerosol Association Research, 35<sup>th</sup> Annual Conference, Portland, Oregon, Oct. 17-22, **2016**.
43. Yong-Le Pan, Brandon Redding, Chuji Wang, Steven C. Hill, Joshua L. Santarpia, Optical trap for both transparent and absorbing particles in air using a single shaped laser beam for measuring Raman spectra, American Aerosol Association Research, 35<sup>th</sup> Annual Conference, Portland, Oregon, Oct. 17-22, **2016**.
44. Chuji Wang, Meixiu Sun, Chenyu Jiang, Zhennan Wang, Xiaomeng Zhao, Zhuying Chen, Yuan Yuan, and Yingxin Li, Laser-based breath gas instrumentation: breath acetone analyzer, 2016 International Association of Breath Research Summit, ETH Zurich, Switzerland, Sept. 13-16, **2016**.
45. Meixiu Sun, Zhennan Wang, Xiaomeng Zhao, Zhuying Chen, Yingxin Li and Chuji Wang. LaserBreath-001 ringdown breath acetone analyzer and its clinical applications. The 5<sup>th</sup> International Conference on Biomedical Engineering and Biotechnology, Hangzhou China, August 1–4, **2016**.
46. Zhennan Wang, Meixiu Sun, Zhuying Chen, Xiaomeng Zhao, Yingxin Li and Chuji Wang. Application of LaserBreath-001 for breath acetone measurement in subjects with diabetes mellitus. SPIE 2016 Photonics Asia, Beijing China, October 12–14, **2016**.
47. Chuji Wang, Yong-Le Pan, Zhiyong Gong, Brandon Redding, Optical Trap, Manipulation, and Characterization of Light-absorbing Single Aerosol Particles in Air, American Aerosol Association Research, 34<sup>th</sup> Annual Conference, Mininapolis, MN, Oct. 12-16, **2015**.
48. Yong-Le Pan, Chuji Wang, Brandon Redding, Dimitri Alexson, Steve Hill, Mark Coleman, Joshua Santarpia, Continuously sample, trap, & measure, & release of individual single airborne particles, American Aerosol Association Research, 34<sup>th</sup> Annual Conference, Mininapolis, MN, Oct. 12-16, **2015**.
49. Chuji Wang, Meixiu Sun, Chenyu Jiang, Zhiyong Gong, Xiaomeng Zhao, Zhuying Chen, Zhennan Wang, Meiling Kang, Yingxin Li, A fully-integrated standalone portable cavity ringdown breath acetone analyzer and its clinical applications, international association of breath research summit, Vienna, Austria, Sept. 13-17, **2015**.
50. Chuji Wang, Zhiyong Gong, Brandon Redding, Steven C. Hill, Yong-Le Pan, Advantages and challenges in single-aerosol-particle spectroscopy (saps), innovations in aerosol physics and chemistry, Washington Univ. in St. Louis, July 13-15, **2015**.



51. Brandon Redding, Steven C. Hill, Dimitri Alexson, Chuji Wang, and Yong-Le Pan: Photophoretic trapping of airborne particles using ultraviolet illumination, The 2015 Defense Threat Reduction Agency Chemical and Biological Defense Science and technology Conference, May 12-14, **2015**, St. Louis, Missouri.
52. Zhennan Wang, Meixiu Sun, and Chuji Wang. Detection of melanoma cancer biomarker dimethyl disulfide using cavity ringdown spectroscopy at 266 nm. The 9<sup>th</sup> International Conference on Bioinformatics and Biomedical Engineering, Shanghai China, September 18–20, **2015**.
53. Meixiu Sun, Zhuying Chen, Xiaomeng Zhao, Zhennan Wang, Yuan Yuan, Chenyu Jiang, Yingxin Li, and Chuji Wang, Determination of Breath Acetone in 312 Type 2 Diabetic Patients using a Ringdown Breath Acetone Analyzer, World Congress on Medical Physics and Biomedical Engineering , Toronto, Canada, June 7-12, **2015**
54. Wei Wu, Che Fuh, and Chuji Wang, 2-D measurements of OH radicals in PAC of premixed and nonpremixed methane/air mixture, International Conference on Plasma Science (ICOPS), May 25-29, **2014**, Washington DC.
55. Chuji Wang, **Invited** Minicourse lecture (60 mins), entitled “Cavity Ringdown Spectroscopy for Atmospheric Plasma” in the International Conference in Plasma Science, May 25-29, **2014**, Washington DC.
56. Chuji Wang, **Invited**, Time-resolved photophoretic trapping Raman spectroscopy for single bioaerosol particles in air, Workshop on Optical Characterization of Bioaerosols, Austin, TX, March 26-28, **2014**.
57. Meixiu Sun, Zhiyong Gong, Chenyu Jiang, Zhuying Chen, Yingxin Li, and Chuji Wang, Validation of cavity ringdown breath analyzer using GC-MS, Vienna, Austria, Feb. 8-11, **2014**.
58. Zhuying Chen, Meixiu Sun, Chenyu Jiang, Zhiyong Gong, Zhennan Wang, Meiling Kang, Yingxin Li, and Chuji Wang, A portable cavity ringdown breath acetone analyzer for clinical breath analysis, 5th International Conference and Exhibition on Analytical & Bioanalytical Techniques, Beijing, China, August 18-20, **2014**.
59. Malik Kaya, Chuji Wang, Fiber loop ringdown glucose sensors: sensing human diabetic urines, SPIE, May 6-9, **2014**, Baltimore, MD. 9098-24.
60. Chuji Wang, Yongle Pan, Deryck Lames, Alan Wetmore, Atmospheric aerosol sensing using rotating drum impactor-dual wavelength UV laser induced fluorescence spectra, SPIE, May 6-9, **2014**, Baltimore, MD. 9073-36.

61. Yongle Pan, Chuji Wang, Mark Coleman, Continuously sample, trap, and measure Raman spectra of individual single aerosol airborne particles, SPIE, May 6-9, **2014**, Baltimore, MD. 9101-22.
62. Brandon Redding, Yongle Pan, Chuji Wang, and Hui Cao, Polarization resolved back scattering of single aerosol particles, SPIE, May 6-9, **2014**, Baltimore, MD.
63. Wei Wu, Che Fuh, and Chuji Wang, Two dimensional OH radical measurements in argon plasma-assisted combustion flame of premixed and nonpremixed methane/air mixtures using cavity ringdown spectroscopy, 44th American Institute of Aeronautics and Astronautics, June 16-20, **2014**, Atlanta GA.
64. Che Fuh, and Chuji Wang, Effects of a microwave induced argon plasma jet on premixed and nonpremixed methane/air mixtures, 44th American Institute of Aeronautics and Astronautics, June 16-20, **2014**, Atlanta GA.
65. Chuji Wang, Wei Wu, Che Fuh, Meixiu Sun, and Yingxing Li, Microwave plasma assisted combustion of premixed methane/air: Roles of OH(A) and OH(X) radicals, The 9th International Symposium on Non-Thermal/Thermal Plasma Pollution Control Technology & Sustainable Energy (ISNTP-9), Dalian, China, June 16-20, **2014**.
66. Yongle Pan, Chuji Wang, Steven Hill, and Joshua Santarpia, Trapping of individual airborne absorbing particles using a counterflow nozzle and photophoretic trap for continuous sampling and analysis, American Association for Aerosol Research, AAAR 33rd Annual Conference Rosen Shingle Creek, Orlando, Florida, USA, October 20-24, **2014**.
67. Haifa Alali and Chuji Wang, Fiber loop ringdown gas flow sensor, International Conference and Exhibition on Lasers, Optics & Photonics, Hilton San Antonio Airport, TX, USA, October 07-09, 2013.
68. Chuji Wang and Wei Wu, Microwave plasma assisted combustion of premixed methane/air: Roles of OH(A) and OH(X) radicals, Bulletin of American Physical Society, 66<sup>th</sup> Annual Gaseous Electronics Conference, Vol.58, No.8 P, 2013.
69. Wei Wu and Chuji Wang, Simultaneous measurements of OH(A) and OH(X) radicals in microwave plasma jet-assisted combustion of methane/air mixtures, Bulletin of American Physical Society, 66<sup>th</sup> Annual Gaseous Electronics Conference, Vol.58, No.8 P, 2013.
70. Chuji Wang, Malik Kaya, Peeyush Sahay, Haifa Alali, and Robert Reese, Fiber optic sensors and sensor networks using a time-domain sensing scheme,

2013 International Symposium on Photonics and Optoelectronics , Beijing China, May 22-24, 2013.

71. Chuji Wang and Yongle Pan, Cavity ringdown spectroscopy for single aerosol particles, Optical Characterization of Atmospheric Aerosols conference, Slovakia Republic, Nov. 2-8, 2013.
72. Chuji Wang, Cavity ringdown spectroscopy for measurement, diagnostics, and sensing, **invited talk** at Baylor University, Feb. 22, 2013.
73. Chuji Wang, When is a breath analyzer ready for diabetes diagnostics? 2012 International Breath Analysis Meeting, Sonoma, CA, Oct.28-Nov.1, 2012.
74. Peeyush Sahay, Susan T. Scherrer, and Chuji Wang, A Plasma Based OES-CRDS Dual-mode Portable Spectrometer for Trace Element Detection: Emission and Ringdown Measurements of Mercury, 65<sup>th</sup> Gaseous Electronics Conference, Austin, TX, Oct. 22-26, 2012.
75. Wei Wu and Chuji Wang, Cavity ringdown measurements of OH radicals in microwave induced argon plasma assisted combustion of methane/air mixtures, 65<sup>th</sup> Gaseous Electronics Conference, Austin, TX, Oct. 22-26, 2012.
76. Chuji Wang, Fiber loop ringdown sensors and sensing, **invited talk** at University, of Southern Mississippi, Oct.14, 2012.
77. Chuji Wang and Wei Wu, Microwave plasma assisted combustion, 65<sup>th</sup> Gaseous Electronics Conference, Austin, TX, Oct. 22-26, 2012.
78. Malik Kaya and Chuji Wang, Fiber loop ringdown glucose sensor, SPIE Optics and Photonics, San Diego, CA, August 12- 16, 2012.
79. Chuji Wang and Wei Wu, Absolute number density measurements of OH radicals in microwave plasma jet assisted combustion, **Gordon Research Conference**—Plasma Processing Science, Bryant University, RI, July 22-27, 2012.
80. Chuji Wang, A multi-function fiber optic sensor platform using a time-domain sensing scheme, 2012 NSF Engineering Research and Innovation Conference, Boston, MA, July. 8-12, 2012.
81. Chuji Wang, Cavity ringdown spectroscopy for single aerosol measurements, Electromagnetic scattering for aerosol characterization workshop. Memphis TN, May 16-17, 2012.
82. Nimisha Srivastava and Chuji Wang, Effect of Different Gases on OH Radical Concentration in Ar and He Atmospheric Pressure Microwave Plasma Jet, 53rd

Annual Meeting of the APS Division of Plasma Physics, Salty Lake City, Nov. 14 – 18, 2011.

83. Chuji Wang, “Cavity ringdown spectroscopy for measurement, diagnostics, and sensing”, **Invited talk** in the University of Houston Distinguished Seminar Series hosted by the Department of Mechanical Engineering at University of Houston, Oct. 13, 2011.
84. Chuji Wang, Cavity ringdown spectroscopy for plasma and combustion diagnostics, **Gordon Research Conference**—Laser Diagnostics in Combustion, Waterville Valley Resort, NH, August 14-19, 2011.
85. Chuji Wang, “Cavity ringdown spectroscopy for biomedical applications”, **Invited talk** in The Biomedical Engineering Institute, Academy of Chinese Medical Sciences, Tianjin, China, June 12, 2011.
86. Nimisha Srivastava and Chuji Wang, Effect of addition of water on the OH generation in an atmospheric plasma jet, 38<sup>th</sup> IEEE International Conference on Plasma Science (ICOPS), Chicago, IN, June 26 - 30, 2011.
87. Peeyush Sahay, Susan T. Scherrer, and Chuji Wang, Development of Ultra-Sensitive, Real-time, Field-Deployable Mercury, Beryllium, and other Contaminants Plasma Ringdown Spectrometer, WM2011 Conference, Phoenix, AZ, Feb. 27 – March 3, 2011.
88. Chuji Wang and Chamini Herath, High Sensitivity Fiber Loop Ringdown Evanescent Field Sensors, 2011 SPIE Smart Structures/NDE, San Diego, USA, March 7-10, 2011.
89. Chuji Wang, A Fiber Loop Ringdown Evanescent Field Sensing Platform: High Sensitivity Index Sensor, 2011 NSF Engineering Research and Innovation Conference, Atlanta, GA, Jan. 4-7, 2011.
90. Nimisha Srivastava, Chuji Wang, and Sterling Harper, Effect of addition of water vapor on OH radical concentration in an atmospheric pressure microwave argon plasma jet, 52nd Annual Meeting of the Division of Plasma Physics, Chicago, IL, USA, November 8-12, 2010.
91. Susan T. Scherrer, Peeyush Sahay, and Chuji Wang, Portable, computer-controlled, compact microwave plasma spectrometer for *in situ* monitoring of trace elements, at the Joint 66th Southwest and 62nd Southeastern Regional Meeting of the ACS, New Orleans, LA, Dec. 1-4, 2010.
92. Peeyush Sahay, Susan T. Scherrer, and Chuji Wang, Determination of UV absorption cross-sections of isoprene and acetone around 266 nm using OPO-cavity

ringdown spectroscopy, at the Joint 66th Southwest and 62nd Southeastern Regional Meeting of the ACS, New Orleans, LA, Dec. 1-4, 2010.

93. Du Y., Chuji Wang, H. Toghiani, Z. Cai, X. Liu, and J. Zhang. Synthesis of carbon shell-encapsulated iron core nanoparticles through thermal treatment of biochar. The 18th Annual International Conference on Composites/Nano Engineering (ICCE - 18). Anchorage, Alaska, USA. July 4-10, 2010.
94. Nimisha Srivastava and Chuji Wang, Effect of plasma gases on OH radical generation in atmospheric pressure microwave plasma jet using UV cavity ringdown spectroscopy, 37<sup>th</sup> IEEE International Conference on Plasma Science (ICOPS), Norfolk, VA, June 20 - 24, 2010.
95. Chuji Wang and Chamini Herath, An emerging time-domain sensing technique for large scale, multi-function fiber optic sensor networks, SPIE Smart Structure and Materials & Nondestructive Evaluation and Health Monitoring, March 7 – 11, San Diego, CA 2010.
96. Chuji Wang, “Launch Cavity Ringdown Spectroscopy from Earth to Space”, a 30 min **invited talk** in the biannual Earth & Space 2010 international conference, March, 14-19, 2010. Hawaii.
97. Chamini Herath and Chuji Wang, High precision fiber loop ringdown chemical corrosion sensors, Earth & Space 2010 international conference, March, 14-19, 2010. Hawaii.
98. Chuji Wang and Nimisha Srivastava, Study of OH radical Generation in Atmospheric Pressure Microwave Plasma Jets of Ar, N<sub>2</sub> and O<sub>2</sub> Gases Using Pulsed Cavity Ringdown Spectroscopy, 51th Annual Meeting of the Division of Plasma Physics, November 2-6, 2009, Atlanta, GA, USA.
99. Chuji Wang and Nimisha Srivastava, Determination of OH Radicals in the Far Downstream of an Atmospheric Pressure Microwave Helium Plasma jet, 51th Annual Meeting of the Division of Plasma Physics, November 2-6, 2009, Atlanta, GA, USA.
100. Chuji Wang, Nimisha Srivastava, and Theodore S. Dibble, Determination of Absolute Number Densities of OH Radicals in an Atmospheric Microwave Plasma Jet Using Cavity Ringdown Spectroscopy, 62nd Annual Gaseous Electronics Conference, October 20-23, 2009, Saratoga Springs, NY, USA.
101. Chuji Wang, Cavity Ringdown Spectroscopy -- a new tool to study mechanisms of plasma-assisted combustion through measuring absolute number densities, 5<sup>th</sup> International Workshop and Exhibition on Plasma Assisted Combustion (IWEPAC), September 15 -18, 2009, Alexandria, VA, USA.

102. Chuji Wang, Fiber loop ringdown—a time domain sensing technique for multi-function fiber optic sensors and sensor networks, the US NSF-the China NSF Optical Fiber Sensor Workshop, July 7 – 10, 2009, Wuhan, China. **(Invited as one of the 13 US speakers).**
103. Chuji Wang, N. Srivastava, S. Scherrer, P.-R. Jang, T. S. Dibble and Y. Duan, Characterization of a low temperature atmospheric-pressure argon microwave induced plasma using visual imaging, OES, and CRDS combined, 36<sup>th</sup> International Conference on Plasma Science, San Diego, CA, USA, 2009.
104. Chuji Wang and N. Srivastava, Measurements of OH radicals in low temperature atmospheric plasmas using pulsed and cw-CRDS techniques, 36<sup>th</sup> International Conference on Plasma Science, San Diego, CA, USA, 2009.
105. Chuji Wang, Ping-Rey Jang, Nimisha Srivastava, Susan. Scherrer, Theodore. S. Dibble, and Yixiang. Duan, A time-resolution study of converging point of atmospheric microwave plasma, 50th Annual Meeting of the Division of Plasma Physics - Dallas, TX, November 17-21, 2008.
106. Nimisha Srivastava, Chuji Wang, and Theodore. S. Dibble, Study of atmospheric air AC glow discharge using optical emission spectroscopy and near infrared diode laser cavity ringdown spectroscopy, 50th Annual Meeting of the Division of Plasma Physics - Dallas, TX, November 17-21, 2008.
107. Chuji Wang, Armstrong Mbi, Andy Shrapudi, and Mark Shepherd, Observation of Correlations of Breath Acetone with Blood Glucose and Glycohemoglobin A1C Using a Noninvasive Laser Detection Technique, **Gordon Research Conference--Lasers in Medicine and Biology**, Holderness School, NH, July 20-25, 2008.
108. Chuji Wang, Armstrong Mbi, and Mark Shepherd, A Ringdown Breath Analyzer for Diabetes Monitoring: Breath Acetone in Diabetic Patients, American Physical Society Annual Meeting, New Orleans, LA, March 10-14, 2008.
109. Chuji Wang, “Applications of Cavity Ringdown Spectroscopy” at Anhui Normal University, invited by Professor Zhifeng Cui, Dean of College of Physics and Information Electronics, Wuhu Anhui, China, May 21-26, 2008. **(Invited).**
110. Chuji Wang, “Cavity Ringdown Spectroscopy in Deep-Sea Exploration”, at Ocean University of China, invited by Professor Ronger Zheng, Associated Dean for Research, College of Electronics and Information Engineering, Qin Dao, Shandong, China, June 3-6, 2008 **(Invited).**
111. Chuji Wang, Nimisha Srivastava, John Cambre, Bryan A. Jones, and Robert B. Reese, Development of a Portable Ringdown Spectrometer for Greenhouse

Gases and Carbon Isotope, The 34th FACSS Annual Meeting Memphis, TN, October 14 – 18 (2007).

112. Susan T. Scherrer, Chuji Wang, F-X. Han, Yixiang Duan, Real-time Measurement of Elemental Mercury Naturally Evaporating from Contaminated Samples Using Cavity Ringdown Spectroscopy, The 34th FACSS Annual Meeting Memphis, TN, October 14 – 18 ( 2007).
113. Chuji Wang, Yixiang Duan, and T. S. Dibble, Plasma Diagnostics Using Cavity Ringdown Spectroscopy Combined with Optical Emission Spectroscopy, 2007 IEEE International Plasma Science Conference, Albuquerque, NM, June 17-22 (2007).
114. Chuji Wang, S. T. Scherrer, Yixiang Duan, and C. B. Winstead, Plasma Source Cavity Ringdown Spectroscopy for Environmental Applications: Detections of Elemental Mercury and its Stable Isotopes, 2007 IEEE International Plasma Science Conference, Albuquerque, NM, June 17-22 (2007).
115. Armstrong Mbi and Chuji Wang, Exploration of Detection Sensitivity of Biomarker Acetone in Aqueous Samples Using Cavity Ringdown Spectroscopy, 2007 APS March Meeting , Denver, Colorado, March 5–9 (2007).
116. Chuji Wang and Armstrong Mbi, Optical Superposition in Double Fiber Loop Ringdown, OpticsEast 2006, Boston, October 1-4 (2006). (**Invited**).
117. Christopher B. Winstead, Susan Scherrer, Stephen C. Foster, and Chuji Wang, Near-Infrared Cavity Ringdown Measurement of C-H Stretching Overtones in Selected Volatile Organic Compounds, 232nd ACS National Meeting, San Francisco, CA, United States, Sept. 10-14, 2006 (2006)
118. Chuji Wang, Biomedical Applications of Cavity Ringdown Spectroscopy: Present and Perspective, Abstracts, 57th Southeast/61st Southwest Joint Regional Meeting of the American Chemical Society, Memphis, TN, United States, November 1-4 (2005),
119. Chuji Wang, Susan T. Scherrer, M. John Plodinec, and Jeff Lindner, Cavity Ringdown in MMV Technologies for Carbon Sequestration, 4<sup>th</sup> Annual Conference on Carbon Capture & Sequestration, Hilton Alexandria Mark Center, Alexandria Virginia, May 2-5 (2005).
120. Chuji Wang, Susan T. Scherrer, M. John Plodinec, and Jeff Lindner, A Survey of MM&V Technologies for Geologic Sequestration, 4<sup>th</sup> Annual Conference on Carbon Capture & Sequestration, Hilton Alexandria Mark Center, Alexandria Virginia, May 2-5, (2005).

121. Pawel Cias, Chuji Wang, and Theodore S. Dibble, Detection of Atmospherically Relevant Hydrocarbons by Diode Laser Cavity Ringdown Spectroscopy, 60<sup>th</sup> International Symposium on Molecular Spectroscopy, Columbus, OH, June 20-24 (2005).
122. Susan T. Scherrer, Chuji Wang, and Christopher B. Winstead, Near Infrared Measurements of Volatile Organic Compounds Using Diode Laser cavity Ringdown Spectroscopy, 60<sup>th</sup> International Symposium on Molecular Spectroscopy, Columbus, OH, June 20-24 (2005).
123. Chuji Wang, Fiber Loop Ringdown for Physical Sensor Development: Temperature Sensor, CLEO/QELS 2005, International Conference on Lasers and Electro-Optics Quantum Electronics and Laser Science, Baltimore, MD, 5/22-5/27, (2005).
124. Chuji Wang, Christopher B. Winstead, Yixiang Duan, Susan T. Scherrer, Sudip P. Koirala, Ping-Rey Jang, George P. Miller, and Fabio J. Mazzotti, Plasma Cavity Ringdown Spectrometer for Elemental and Isotopic Measurements: Past, Present and Future, Abstracts of Papers, 227<sup>th</sup> American Chemical Society National Meeting, Anaheim, CA, United States, March 28-April 1, (2004).
125. Yixiang Duan, Chuji Wang, Susan T. Scherrer, Sudip P. Koirala, and Christopher B. Winstead, Exploration of Plasma Source Cavity Ringdown Spectroscopy for Elemental and Isotopic Measurements: Performance and Perspectives, Abstracts of Papers, 227<sup>th</sup> American Chemical Society National Meeting, Anaheim, CA, United States, March 28-April 1, (2004).
126. Chuji Wang, Sudip P. Koirala, Susan T. Scherrer, Yixiang Duan, and Christopher B. Winstead, Instrument Development Using Plasma-Cavity Ringdown Spectroscopy with Compact Plasma Source and a Diode Laser, The Pittsburgh Conference Presents, Chicago, IL. United States, March 7-12, (2004).
127. Sudip P. Koirala, Susan T. Scherrer, Chuji Wang, Yixiang Duan, Christopher B. Winstead, Development of Plasma-Cavity Ringdown Spectrometer, The Pittsburgh Conference Presents, Orlando, FL. United States, March 9-14, (2003).
128. Sudip P. Koirala, Susan T. Scherrer, Chuji Wang, Yixiang Duan, and Christopher B. Winstead, Elemental and Isotopic Measures Using Plasma Diode Laser Ringdown Spectroscopy, The Federation of Analytical Chemistry and Spectroscopy Societies, Ft. Lauderdale, FL. United States, Oct. 19-23, (2003).
129. Yixiang Duan, Chuji Wang, and Christopher B. Winstead, Exploration of Plasma Source Cavity Ringdown Spectroscopy for Highly Sensitive Elemental and Isotopic Measurements, 3<sup>rd</sup> Topical Conference on Plutonium and Actinides, American Physical Society, Albuquerque, NM. United States, July 6-10, (2003).



130. Chuji Wang, Susan T. Scherrer, Ping-Rey Jang, Dave L. Monts, Development of Sensitive and Inexpensive Sensors Using Fiber Loop Ringdown Spectroscopy, The Federation of Analytical Chemistry and Spectroscopy Societies, Ft. Lauderdale, FL. United States, Oct. 19-23, (2003).
131. Chuji Wang, Delwar Hossain, and Susan T. Scherrer, Development of Breath Analyzer for Diabetes Diagnosis Using Cavity Ringdown Spectroscopy, The Federation of Analytical Chemistry and Spectroscopy Societies, Ft. Lauderdale, FL. United States, Oct. 19-23, (2003).
132. Chuji Wang, Fabio J. Mazzotti, Jerzy Mierzwa, George P. Miller, Yixiang Duan, and Christopher B. Winstead, Cavity Ringdown Spectroscopy in Atmospheric Pressure Plasma Applications, Pittcon 2002, New Orleans, LA. USA, March 13-17, (2002).
133. Theodore S. Dibble, Chuji Wang, Wei Deng, Liat Shemesh, and David Katz, Laser-Induced Fluorescence Spectroscopy of *tert*-Pentoxy and 3-Pentoxy Radicals, Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, (2000).
134. Theodore S. Dibble, Chuji Wang, Liat G. Shemesh, Wei Deng, Michael D. Lilien, David R. Katz, Spectroscopy of Alkoxy Radicals, Book of Abstracts, 218th ACS National Meeting, New Orleans, Aug. 22-26 (1999).
135. Chuji Wang, Wei Deng, Liat G. Shemesh, Michael D. Lilien, Theodore S. Dibble, Observation of Fluorescence Excitation Spectra of *tert*-Pentoxy and 3-Pentoxy Radicals, 55<sup>th</sup> International Molecular Spectra Symposium, Columbus, OH, June 11-16, (2000).
136. Theodore S. Dibble, Chuji Wang, Liat G. Shemesh, Wei Deng, and Michael D. Lilien, Laser-induced Fluorescence Spectroscopy of *tert*-Butoxy and 2-Butoxy Radicals, 54<sup>th</sup> International Molecular Spectra Symposium, Columbus, OH, June 14-18, (1999).
137. Chuji Wang, Congxiang Chen, Jinghua Dai, and Xingxiao Ma, Laser Induced Fluorescence Studies of Jet-Cooled CF<sub>2</sub> : Determination of A-State Stretching Frequencies, 53<sup>rd</sup> International Molecular Spectra Symposium, Columbus, OH, June 15-19, (1998).

## **Books**

Song, G., Wang, C. and Wang, B. Eds. **2018**. Structural Health Monitoring (SHM) of Civil Structures, ISBN 978-3-03842-783-4 (Pbk); ISBN 978-3-03842-784-1 (PDF), MDPI.