

Chuji Wang

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A. CURRENT RESEARCH INTERESTS

- 1) Low-temperature nonthermal plasmas (laser diagnostics, plasma-assisted combustion, plasma processing, magnetized dust plasma)
- 2) Optical trapping and manipulations (CRDS, Raman and LIF) of single aerosol particles
- 3) Sensors and actuators (chemical, physical, and biomedical sensors)
- 4) High sensitivity and high precision instrumentation (for energy, environment, and medicine)
- 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

2013- **Professor**

2013 – 2014 US Army Research Laboratory, Adelphi, MD, one-year Senior ORAU fellowship

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

1982 – 1986 **B.S.**, Physics, Anhui Normal University, China

D. ADJUNCT/GUEST/VISITING PROFESSORSHIP

Adjunct professor, Department of Chemistry, Physics & Atmospheric Sciences,
Jackson State University, MS

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)

- >**114** peer-reviewed journal articles
- >**114** conference presentations
- **13** peer-reviewed proceedings
- **3** invited book chapters (Publishers: *John Wiley & Sons; GRC; Springer*)
- **1** Book
- **9** articles with “**featured stories**”, “**Best Paper Award**”, “**Front cover**”, “**Hot Article**”, or “**Highlighted Article**”
- H-index **29** (Google Scholar), total citation >**3500**.

G. RESEARCH FUNDING (2002- May 2020)

Total: \$ 7,687,671

- **6** from National Science Foundation (2004, 2007, 2009, 2011, 2012, 2016)
- **4** from US Department of Defense (2013, 2013, 2016, 2021)
- **1** from US Department of Energy Office of Science (2002)
- **2** from US Department of Energy Office of Fusion Energy Science (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 (2002-2011)
- **1** from MSU (2007)

Awarded grants (2002 – May 2021)

- 1) US Department of Defense, Army Research Office, Study of surface and heterogeneous of mercury using a single-particle approach, Grant # W911NF-16-1-0483, **\$358,490**, 5/10/2021-5/9/2024, Chuji Wang, **sole PI**.
- 2) 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 # 0000256628, **\$199,999**, 03/15/2021 to 03/14/2023, Chuji Wang, **Sole PI**.
- 3) Department of Energy, Office of Fusion Energy Sciences, Optical trapping and manipulation of single particles for MDP, Grant # 0000254805, **\$214,721**, 09/1/2020-08/31/2022, Chuji Wang, **sole PI**.

- 4) 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).
- 5) 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).
- 6) 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).
- 7) 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**.
- 8) 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**.
- 9) 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**.
- 10) 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**.
- 11) 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**.
- 12) Department of Agriculture, Production and Characterization of Carbon-based Nanomaterials from Beetle Killed Wood, Grant # 11-JV-1111124-129, \$ **55,000**, 08/17/11 - 07/31/14, Chuji Wang **Co-PI** with PI (Dr. Jilei Zhang).
- 13) 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**.

- 14) 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**.
- 15) Department of Energy, Monitoring of ISD Using Fiber Optic Sensors, Grant # AC84132N, **\$ 75,000**, 06/15/2011-12/31/2012, Chuji Wang, **sole PI**.
- 16) 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**.
- 17) 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.
- 18) 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.
- 19) Department of Energy, National Energy Technology Laboratory, Ringdown Spectrometer for CH₄, CO₂ and C-13 isotope, Grant # DE-RQ26-05NT500832, **\$90,000**, 9/28/2005 - 8/31/2007. Chuji Wang, **sole PI**.
- 20) 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.
- 21) 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**).
- 22) 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**).
- 23) 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**).

- 24) 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.
- 25) 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).
- 26) 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**).
- 27) 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**).
- 28) 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**).
- 29) 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)

Courses taught as a full-time Instructor in the Department of Physics at Anhui Normal University (1986-1993):

- University Physics I, II, III (Equivalent to PH 2213, 2223, and 2233, respectively)
- Modern Physics Experiment (for Physics major seniors, equivalent to PH 4152)

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 **4** graduate students and **1** undergraduate 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. Mudiyanseelage Egod (2018 summer, Ph.D. student)
 5. Cameron Gaito (Physics senior)
 - Advisory Committee member for **30** graduate students from other research groups
 - Advised **5** undergraduate students
 - 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. Service in the professional communities

Editorial Board Member of journal: *Recent Patent on Signal Processing*

Guest Editor: *Applied Science* (2017)

Chair of American Aerosol Association Research Publication Committee (2021-2022)

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).

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, 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 Office of Science
- Ireland Health Research Board
- Hong Kong Research Grants Council
- Swiss National Science Foundation

Referee of publications for **28** international journals:

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

2. Services in the departmental committees

- a. Chair of Faculty Search Committee (Fall 2017-2018)
- b. Faculty Search Committee (Fall 2016-2017, 2017-2018, 2019-2020)
- c. Chair of Faculty Search Committee (Fall 2014-2015)
- d. Promotion and Tenure Committee (2014-2016, 2018-)
- e. Chair of Departmental Peer Teaching Evaluation Committee (2016-)
- f. Teaching Evaluation Committee (2014-)
- g. Departmental Seminar Committee (2007 Fall -2008 Fall, 2014-2015)
- h. College of Arts and Sciences Curriculum Committee (2010-2014)

- i. Physics Graduate Program Committee (2007-2015)
- j. Chair of Library Committee (2006 Fall - 2013)
- k. Chair of Ph.D. Preliminary Exam (Mechanics) (2007, 2008, 2010, 2012, 2016, 2017, 2018)
- l. Chair of Placement Exam (Mechanics, 2010)
- m. 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

- **Dean's Eminent Scholar** (2011)
- **MSU Faculty Research Award** (2011)
- **James Worth Bagley Faculty Award** (2011)
- **State Pride Award** (2010)
- **Front cover**, *Optical trap-cavity ringdown spectroscopy as a single-aerosol-particle-scope*. Applied Physics Letters, 107, 241903 (2015).
- **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)
- **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 11th, 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 (>110)

1. Nimisha Srivastava and Chuji Wang, Effect of N₂ and O₂ on OH radical production in an atmospheric helium microwave plasma jet, *Plasma Science and Technology*, 21, 115401 (2019)
2. 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)
3. 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)
4. 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)
5. 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](#)).
6. 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)

7. 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)
8. 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). ([Invite d](#))
9. 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).
10. 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).
11. Che A. Fuh, **Chuji Wang**, A Novel Combustion Platform for Microwave Plasma-Assisted Combustion Studies, *IEEE Transactions on Plasma Science*, 46, 1800-1808, (2018)
12. Yong-Le Pan, Aimable Kalume, **Chuji Wang**, Joshua L Santarpia, Opto-aerodynamic focusing of aerosol particles, *Aerosol Science and Technology*, 52, 13-18 (2018)
13. 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)
14. 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)
15. 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)
16. 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](#)).
17. Maheshwar Ghimire, Hong; Guo, Junpeng Guo, and **Chuji Wang**, Surface Plasmon-Based Fiber Loop Ringdown Sensor, *Sensor Letters*, 15, 565-569 (2017)

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8. 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**.
9. 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**.

10. Maheshwar Ghimire and Chuji Wang, Integration of surface plasmon-based sensor in fiber loop ringdown system, FACSS. Atlanta, GA, Oct. 21-26, **2018**.
11. 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**.
12. 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**.
13. 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**.
14. 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**.
15. 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**.
16. 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**.
17. 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**.
18. 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**.
19. 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**.

20. 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**.
21. 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**.
22. 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**.
23. 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**.
24. 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**.
25. 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**.
26. Che Fuh, Wei Wu and Chuji Wang, Microwave plasma-assisted ignition and flameholding premixed ethylene/air mixtures, The 44th International Conference on Plasma Science, Atlantic City, New Jersey, May 21-25, **2017**.
27. Zhiyong Gong, Chuji Wang and Yong-Le Pan, Optical trapping and manipulation configurations for measuring light extinctions of single particles, The 16th Electromagnetic and Light Scattering Conference (ELS-XVI), College park, Maryland, Mar. 19-25, **2017**.
28. Zhiyong Gong, Yong-Le Pan, and Chuji Wang, Optical configurations for photophoretic trap of single particles in air, American Aerosol Association Research, 35th Annual Conference, Portland, Oregon, Oct. 17-22, **2016**.
29. Chuji Wang, Zhiyong Gong, Yong-Le Pan, Gorden Videen, Laser pushing or pulling of absorbing airborne particles, American Aerosol Association Research, 35th Annual Conference, Portland, Oregon, Oct. 17-22, **2016**.
30. 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, 35th Annual Conference, Portland, Oregon, Oct. 17-22, **2016**.

31. 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**.
32. Meixiu Sun, Zhennan Wang, Xiaomeng Zhao, Zhuying Chen, Yingxin Li and Chuji Wang. LaserBreath-001 ringdown breath acetone analyzer and its clinical applications. The 5th International Conference on Biomedical Engineering and Biotechnology, Hangzhou China, August 1–4, **2016**.
33. 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**.
34. 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, 34th Annual Conference, Mininapolis, MN, Oct. 12-16, **2015**.
35. Yong-Le Pan, Chuji Wang, Brandon Redding, Dimitri Alexson, Steve Hill, Mark Coleman, Joshua Santarpi, Continuously sample, trap, & measure, & release of individual single airborne particles, American Aerosol Association Research, 34th Annual Conference, Mininapolis, MN, Oct. 12-16, **2015**.
36. 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**.
37. 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**.
38. 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.
39. Zhennan wang, Meixiu Sun, and Chuji Wang. Detection of melanoma cancer biomarker dimethyl disulfide using cavity ringdown spectroscopy at 266 nm. The 9th International Conference on Bioinformatics and Biomedical Engineering, Shanghai China, September 18–20, **2015**.

40. Meixiu Sun, Zhuying Chen, Xiaomeng Zhao, Zhennang 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**
41. 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.
42. 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.
43. Chuji Wang, **Invited**, Time-resolved photophoretical trapping Raman spectroscopy for single bioaerosol particles in air, Workshop on Optical Characterization of Bioaerosols, Austin, TX, March 26-28, **2014**.
44. 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**.
45. 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**.
46. Malik Kaya, Chuji Wang, Fiber loop ringdown glucose sensors: sensing human diabetic urines, SPIE, May 6-9, **2014**, Baltimore, MD. 9098-24.
47. Chuji Wang, Yongle Pan, Deryck Lames, Alan Wetmore, Atmospheric aerosol sensing using rotating drum impactor-dual wave length UV laser induced fluorescence spectra, SPIE, May 6-9, **2014**, Baltimore, MD. 9073-36.
48. 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.
49. Brandon Redding, Yongle Pan, Chuji Wang, and Hui Cao, Polarization resolved back scattering of single aerosol particles, SPIE, May 6-9, **2014**, Baltimore, MD.
50. 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.

51. 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.
52. 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**.
53. 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**.
54. 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.
55. 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, 66th Annual Gaseous Electronics Conference, Vol.58, No.8 P, 2013.
56. 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, 66th Annual Gaseous Electronics Conference, Vol.58, No.8 P, 2013.
57. 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.
58. Chuji Wang and Yongle Pan, Cavity ringdown spectroscopy for single aerosol particles, Optical Characterization of Atmospheric Aerosols conference, Slovakia Republic, Nov. 2-8, 2013.
59. Chuji Wang, Cavity ringdown spectroscopy for measurement, diagnostics, and sensing, **invited talk** at Baylor University, Feb. 22, 2013.

60. Chuji Wang, When is a breath analyzer ready for diabetes diagnostics? 2012 International Breath Analysis Meeting, Sonoma, CA, Oct.28-Nov.1, 2012.
61. 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, 65th Gaseous Electronics Conference, Austin, TX, Oct. 22-26, 2012.
62. Wei Wu and Chuji Wang, Cavity ringdown measurements of OH radicals in microwave induced argon plasma assisted combustion of methane/air mixtures, 65th Gaseous Electronics Conference, Austin, TX, Oct. 22-26, 2012.
63. Chuji Wang, Fiber loop ringdown sensors and sensing, **invited talk** at University, of Southern Mississippi, Oct.14, 2012.
64. Chuji Wang and Wei Wu, Microwave plasma assisted combustion, 65th Gaseous Electronics Conference, Austin, TX, Oct. 22-26, 2012.
65. Malik Kaya and Chuji Wang, Fiber loop ringdown glucose sensor, SPIE Optics and Photonics, San Diego, CA, August 12- 16, 2012.
66. 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.
67. 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.
68. Chuji Wang, Cavity ringdown spectroscopy for single aerosol measurements, Electromagnetic scattering for aerosol characterization workshop. Memphis TN, May 16-17, 2012.
69. 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.
70. 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.

71. 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.
72. 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.
73. Nimisha Srivastava and Chuji Wang, Effect of addition of water on the OH generation in an atmospheric plasma jet, 38th IEEE International Conference on Plasma Science (ICOPS), Chicago, IN, June 26 - 30, 2011.
74. 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.
75. 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.
76. 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.
77. 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.
78. 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.
79. 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.
80. 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.

81. Nimisha Srivastava and Chuji Wang, Effect of plasma gases on OH radical generation in atmospheric pressure microwave plasma jet using UV cavity ringdown spectroscopy, 37th IEEE International Conference on Plasma Science (ICOPS), Norfolk, VA, June 20 - 24, 2010.
82. 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.
83. 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.
84. Chamini Herath and Chuji Wang, High precision fiber loop ringdown chemical corrosion sensors, Earth & Space 2010 international conference, March, 14-19, 2010. Hawaii.
85. Chuji Wang and Nimisha Srivastava, Study of OH radical Generation in Atmospheric Pressure Microwave Plasma Jets of Ar, N₂ and O₂ Gases Using Pulsed Cavity Ringdown Spectroscopy, 51th Annual Meeting of the Division of Plasma Physics, November 2-6, 2009, Atlanta, GA, USA.
86. 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.
87. 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.
88. Chuji Wang, Cavity Ringdown Spectroscopy -- a new tool to study mechanisms of plasma-assisted combustion through measuring absolute number densities, 5th International Workshop and Exhibition on Plasma Assisted Combustion (IWEPAC), September 15 -18, 2009, Alexandria, VA, USA.
89. 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**).
90. 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, 36th International Conference on Plasma Science, San Diego, CA, USA, 2009.

91. Chuji Wang and N. Srivastava, Measurements of OH radicals in low temperature atmospheric plasmas using pulsed and cw-CRDS techniques, 36th International Conference on Plasma Science, San Diego, CA, USA, 2009.
92. 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.
93. 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.
94. 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.
95. 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.
96. 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**).
97. 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**).
98. 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).
99. 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).

100. 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).
101. 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).
102. 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).
103. Chuji Wang and Armstrong Mbi, Optical Superposition in Double Fiber Loop Ringdown, OpticsEast 2006, Boston, October 1-4 (2006). (**Invited**).
104. 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)
105. 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),
106. Chuji Wang, Susan T. Scherrer, M. John Plodinec, and Jeff Lindner, Cavity Ringdown in MMV Technologies for Carbon Sequestration, 4th Annual Conference on Carbon Capture & Sequestration, Hilton Alexandria Mark Center, Alexandria Virginia, May 2-5 (2005).
107. Chuji Wang, Susan T. Scherrer, M. John Plodinec, and Jeff Lindner, A Survey of MM&V Technologies for Geologic Sequestration, 4th Annual Conference on Carbon Capture & Sequestration, Hilton Alexandria Mark Center, Alexandria Virginia, May 2-5, (2005).
108. Pawel Cias, Chuji Wang, and Theodore S. Dibble, Detection of Atmospherically Relevant Hydrocarbons by Diode Laser Cavity Ringdown Spectroscopy, 60th International Symposium on Molecular Spectroscopy, Columbus, OH, June 20-24 (2005).
109. Susan T. Scherrer, Chuji Wang, and Christopher B. Winstead, Near Infrared Measurements of Volatile Organic Compounds Using Diode Laser cavity Ringdown Spectroscopy, 60th International Symposium on Molecular, Spectroscopy, Columbus, OH, June 20-24 (2005).

110. 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).
111. 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, 227th American Chemical Society National Meeting, Anaheim, CA, United States, March 28-April 1, (2004).
112. 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, 227th American Chemical Society National Meeting, Anaheim, CA, United States, March 28-April 1, (2004).
113. 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).
114. 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).
115. 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).
116. Yixiang Duan, Chuji Wang, and Christopher B. Winstead, Exploration of Plasma Source Cavity Ringdown Spectroscopy for Highly Sensitive Elemental and Isotopic Measurements, 3rd Topical Conference on Plutonium and Actinides, American Physical Society, Albuquerque, NM. United States, July 6-10, (2003).
117. 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).
118. 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).

119. 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).
120. 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).
121. 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).
122. 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, 55th International Molecular Spectra Symposium, Columbus, OH, June 11-16, (2000).
123. 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, 54th International Molecular Spectra Symposium, Columbus, OH, June 14-18, (1999).
124. Chuji Wang, Congxiang Chen, Jinghua Dai, and Xingxiao Ma, Laser Induced Fluorescence Studies of Jet-Cooled CF₂ : Determination of A-State Stretching Frequencies, 53rd International Molecular Spectra Symposium, Columbus, OH, June 15-19, (1998).

Books

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