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PERSONAL STATEMENT

I recently retired from the Los Alamos National Laboratory (LANL) in New Mexico after 38 years as a physicist and a laboratory Fellow. My goal is to adapt the technologies I developed over the years for US the government for applications related to health-care, threat reduction, and various industrial needs. I have a very wide range of interests and background that help me solve difficult technical problems in many fields. I started my career as a postdoctoral fellow in the field of low-temperature physics. In 1983, I moved to the Rockwell International Corporation in California where, as a senior scientist, where I developed 2D infrared detector arrays for space applications. I returned to LANL in 1986 as a staff scientist and developed ultra-high-speed measurement techniques, femtosecond lasers, thermionic integrated circuits, and sensors based on Langmuir-Blodgett films. Next, I switched my research career and taught myself acoustics. I ended up developing the Acoustic Resonance Spectroscopy and the Swept Frequency Acoustic Interferometry techniques specifically to solve some challenging technical problems. These techniques served as the foundation for the development of sensors that range from detecting biological and chemical warfare agents to sensors for oil exploration. My recent research involved imaging objects with sound, developing noninvasive measurement techniques, manipulation of particles with sound including both concentration and separation, creating novel materials using sound, and nonlinear acoustics. Developing new sensing techniques and sensors for human health monitoring and medical diagnosis with emphasis on imaging that are simple and inexpensive is something that I am really passionate about.

PROFESSIONAL EXPERIENCE

AWE Technologies, Bay Shore, NY: CTO and Co-Founder

Los Alamos National Laboratory Fellow

Member of International Editorial Board: Emerging Materials Research Journal

Editor: Sensors – Ultrasonics (Journal)

Board Member: Society for Brain Mapping & Therapeutics

May 2018 – present: CTO and Co-Founder of AWE Technologies, Bay Shore, NY

January 1996 – April 2018: Leader, Acoustics and Sensors Team, MPA-11, LANL
Responsible for building this team from ground up and establishing the acoustics and sensors research laboratory at LANL. As a leader, I was responsible for innovation, creative technical problem solving, and developing a wide range of sensors to support government and industry needs.

January 1993 – December 1996: Project Leader, NDE programs for treaty verification, LANL Developed acoustic-based noninvasive sensors for chemical and biological weapons in support of UN treaty verification, homeland defense, and nonproliferation activities. This focused on the development of the Acoustic Resonance Spectroscopy (ARS) and the Swept Frequency Acoustic Interferometry (SFAI) techniques for noninvasive and stand-off interrogation of chemicals in sealed containers. The instruments developed were used worldwide by the US government.

January 1986 - December 1993: Technical Staff Member, MPA-11, LANL
Developed novel high-speed electronic measurement technique using femtosecond lasers and photo-conducting switch; developed thermionic integrated circuits for high temperature operations; used organic thin films as sensitive chemical sensors for the environment; worked on the development of high-temperature superconductor devices; and designed novel spectroscopic techniques for electrochemical cells.

June 1983 - December 1986: Senior Member of Technical Staff, Rockwell International, CA Responsible for developing characterization techniques for Hg-Cd-Te infrared 2D detector arrays for space applications.

July 1980 - June 1983: Director's Postdoctoral Fellow, Condensed Matter Physics, LANL Studied the dynamics of phase transitions in liquid He³-He⁴ mixtures experimentally. Developed novel optical spectroscopic techniques for studying such phase transitions.

EDUCATION:

Ph.D., Physics, Portland State University, Oregon, 1980.

D.I.I.T. Post-Graduate Diploma in Industrial Physics, Indian Institute of Technology, Kharagpur, India, 1973.

M. Sc., Physics, Indian Institute of Technology, Kharagpur, India, 1972. B. Sc., Physics with Honors, St. Xavier's College, Ranchi, India, 1970.

AWARDS AND HONORS

2014 Richard P. Feynman Innovation Award

2014 **R&D 100 Award** for Safire

2010 Distinguished Licensing Award, Los Alamos National Laboratory

2008 Distinguished Patent Award, Los Alamos National Laboratory

2007 Distinguished Patent Award, Los Alamos National Laboratory

2005 Distinguished Performance Award for contributions to starting the Chevron-LANL Alliance, Los Alamos National Laboratory

- 2003 Siemens-Westinghouse Mentor Award
- 2001 Distinguished Licensing Award – Los Alamos National Laboratory
- 2001 Outstanding Alumni Award, Portland State University
- 2000 **R&D 100** Award for ANDE-Advanced Nondestructive Evaluation System
- 1997 Distinguished Performance Award for contributions to Arms Control and Chemical Weapons Treaty Verification, Los Alamos National Laboratory
- 1995 **R&D 100** Award for ARS Chemical Fill Detector
- 1992 Popular Science - Best of What's New award for Acoustic Salmonella Detector
- 1990 **R&D 100** Award for Solid State Nitrogen Dioxide Sensor

MAJOR TECHNICAL ACHIEVEMENTS

- Developed an all solid state, simple and inexpensive acoustic Bessel beam source for highly collimated sound beams at low frequencies that is almost two orders of magnitude more intense than possible with parametric arrays.
- Demonstrated broadband ultrasound penetration and propagation through human skull with very little loss for deep brain stimulation.
- Developed an acoustic based fabrication technique using nano/micro particles for creating novel materials (tunable periodic structures in 1D, 2D and 3D) that is rapid (~10 s), inexpensive, and table-top. Once fully developed and refined, it is expected to have a major impact in the area of nanofabrication
- Demonstrated metamaterial-based sound beam shaping for underwater communication.
- Developed high power, low-frequency, highly collimated sound-beam generation. This has applications in down-hole imaging and also imaging of objects in highly attenuating materials, such as drilling mud.
- Acoustic manipulation of gas in chemical reactors and also in multiphase flow systems.
- Developed the Swept Frequency Acoustic Interferometry (SFAI) technique for the noninvasive identification of chemical warfare agents in munitions and sealed containers. This became a major DoD funded project in support of chemical weapons treaty verification and counter-proliferation, and brought LANL a lot of recognition. The chemical weapons detection work received an R&D 100 award. This has since become a general purpose acoustic technique for fluid characterization. Chevron is currently in the process of commercializing this technique for oil exploration related work.
- Developed the technique of sound projection (collimated beam at low frequency) coupled with laser Doppler resonance vibration measurement to identify chemicals in sealed containers from a distance of 10-15 feet. It received an R&D 100 award. Others have since adapted this technique for stand-off underground mine detection and concealed weapons detection.
- Conceived and developed a novel approach to acoustic concentration of aerosol and biological cells. This resulted in a major tech transfer to industry and the development of commercial product – Acoustic Flow Cytometer. This work was also

- picked as the top 5 inventions for 2005 by McGraw-Hill and Scientific American.
- Developed a unique acoustic flashlight technique for imaging with applications ranging from biomedical imaging to near borehole imaging in oil exploration.
 - Chemistry at a distance: developed the technique to launch chemicals in a vortex ring as a transporter to seed the air at a distance with fluorescent labels for detecting biological warfare agents from a distance. DARPA originally funded this as a proof-of-concept effort. This has since served as the seed for a major multimillion dollar effort by DARPA.
 - Developed the acoustic salmonella detector that received worldwide recognition and publicity. It resulted in a Popular Science 100 (Best of What is New) award.
 - Invented a very simple solid-state nitrogen dioxide detector. This effort resulted in an R&D 100 award.
 - Developed a novel magnetoresistive thermometry technique for the first measurement of homogenous nucleation temperature of liquid helium. National Institute of Standards and Technology (NIST) considers these measurements as the standard. Later generalized this technique for use with any cryogenic liquid.

PATENTS

44 US patents issued, 10 pending, 25 International patents

Patents licensed to companies: 24 (Chevron Corporation, GE, Interferometrics, Edge Technology, Safety Scan Technology, and ACS (Life Technologies). NDA with 47 companies).

1. US Patent 10,054,676, **Dipen N. Sinha** and John F. Brady, "Acoustic Camera", August 21, 2018
2. US Patent 9,843,400, **Dipen N. Sinha** and Cristian Pantea, "Broadband unidirectional ultrasound propagation", December 12, 2017
3. US Patent 9,442,094, **Dipen N. Sinha** and Cristian Pantea, "Apparatus and method for acoustic monitoring of steam quality and flow", Sep 13, 2016
4. US Patent 9,404,890, **Dipen N. Sinha**, Curtis Osterhoudt, and Anirban Chaudhuri, "Method for noninvasive determination of acoustic properties of fluids inside pipes", Aug 2, 2016
5. US Patent 9,354,346, Cung Vu; **Dipen N. Sinha**; Cristian Pantea; "Acoustic source for generating an acoustic beam", May 31, 2016
6. US Patent 9,354,094, **Dipen N. Sinha**, "Apparatus and method for noninvasive particle detection using Doppler spectroscopy", May 31, 2016
7. US Pat No. 9,234,779, **Dipen N. Sinha**, "Integrated acoustic phase separator and multiphase fluid composition monitoring apparatus and method"
8. US Pat No. 9,199,217, Naveen N. Sinha, **Dipen N. Sinha**, Gregory Russ Goddard, "Material fabrication using acoustic radiation forces"
9. US Pat No. 9,103,944, Cung Vu, **Dipen N. Sinha**, Cristian Pantea, "System and

- method for sonic wave measurements using an acoustic beam source”
10. US Pat No. 9,074,979, Gregory Kaduchak, Greg Goddard, Gary Salzman, **Dipen N. Sinha**, John C. Martin, Christopher Kwiatkowski, Steven Graves, “Ultrasonic analyte concentration and application in flow cytometry”
 11. US Pat No. 8,820,147, **Dipen N. Sinha**, “Multiphase fluid characterization system”
 12. US Pat No. 8,783,109, Gregory Kaduchak, Greg Goddard, Gary Salzman, **Dipen N. Sinha**, John C. Martin, Christopher Kwiatkowski, Steven Graves, “Ultrasonic analyte concentration and application in flow cytometry”
 13. US Pat No. 8,722,155, Bart Raeymaekers, **Dipen N. Sinha**, “Method to manufacture bit patterned magnetic recording media”
 14. US Pat No. 8,640,529, **Dipen N. Sinha**, “Integrated acoustic phase separator and multiphase fluid composition monitoring apparatus and method “
 15. US Pat No. 8,559,269: Cung Vu, **Dipen N. Sinha**, Cristian Pantea, “Device and method for generating a beam of acoustic energy from a borehole, and applications thereof”.
 16. US Pat No. 8,547,791: Cung Vu, **Dipen N. Sinha**, Cristian Pantea, “Device and method for generating a beam of acoustic energy from a borehole, and applications thereof”.
 17. US Pat No. 8,547,790: Cung Vu, **Dipen N. Sinha**, Cristian Pantea, “Device and method for generating a beam of acoustic energy from a borehole, and applications thereof”.
 18. US Pat No. 8,259,530: Cung Vu, **Dipen N. Sinha**, Cristian Pantea, Kurt Nihei, Denis P. Schmitt, and Christopher Skelt, ‘System for generating a beam of acoustic energy from a borehole, and applications thereof’, Sep 4, 2012.
 19. US Pat No. 8,233,349: Cung Vu, **Dipen N. Sinha**, Cristian Pantea, Kurt Nihei, Denis P. Schmitt, and Christopher Skelt, “System for generating a beam of acoustic energy from a borehole, and applications thereof”.
 20. US 8,231,707: **Dipen N. Sinha**, “Gas separation using ultrasound and light absorption”, July 31, 2012
 21. US Pat No. 8,176,783, **Dipen N. Sinha**, “Non-contact fluid characterization in containers using ultrasonic waves”, May 15, 2012
 22. US Pat No. 8,166,801, **Dipen N. Sinha**, “Non-invasive fluid density and viscosity measurement”, May 1, 2012
 23. US Pat No. 7,963,165, **Dipen N. Sinha**, “Non-contact feature detection using Lamb waves”
 24. US Pat No. 7,852,091, **Dipen N. Sinha**, “Microwave determination of location and speed of an object inside a pipe”
 25. US Pat No. 7,839,718, Cung Vu, **Dipen N. Sinha**, Cristian Pantea, Kurt Nihei, Denis P. Schmitt, and Christopher Skelt, “Device and method for generating a beam of acoustic energy from a borehole, and applications thereof”
 26. US Pat. No. 7,340,957: Gregory Kaduchak , Greg Goddard, Gary Salzman, **Dipen Sinha**, John Martin, Christopher C. Kwiatkowski, Steven Graves, “Ultrasonic analyte concentration and application in flow cytometry”.
 27. US 7,228,740, Dipen N. Sinha, “Noninvasive characterization of a flowing

- multiphase fluid using ultrasonic interferometry”
28. US Pat. No. 7,114,390: David C. Lizon, Gregory Kaduchak, and **Dipen N. Sinha**, “Ultrasonic liquid level monitor”.
 29. US Pat. No. 6,959,601: **Dipen N. Sinha**, “Noninvasive characterization of a flowing multiphase fluid using ultrasonic interferometry”.
 30. US Pat. No. 6,889,560: **Dipen N. Sinha**, “Noninvasive characterization of a flowing multiphase fluid using ultrasonic interferometry”.
 31. US Pat. No. 6,644,119: **Dipen N. Sinha**, “Noninvasive characterization of a flowing multiphase fluid using ultrasonic interferometry”.
 32. US Pat. No. 6,644,118: Gregory Kaduchak and **Dipen N. Sinha**, “Cylindrical acoustic levitator/concentrator having non-circular cross-section”.
 33. US Pat. No. 6,467,350: Gregory Kaduchak and **Dipen N. Sinha**, “Cylindrical Acoustic Levitator/Concentrator”.
 34. US Pat. No. 6,186,004: Greg Kaduchak and **Dipen N. Sinha**, "Apparatus and method for remote, noninvasive characterization of structures and fluids inside containers".
 35. US Pat. No. 6,117,089: **Dipen N. Sinha**, "Method for Noninvasive Intra-cranial Pressure Measurement".
 36. US Pat. No. 6,035,041: **Dipen N. Sinha**, "Noninvasive Method for Determining the Liquid Level and Density inside of a Container”.
 37. US Pat. No. 5,886,262: **Dipen N. Sinha**, "Apparatus and Method for Comparing Corresponding Acoustic Resonances in Liquids".
 38. U.S. Pat. No. 5,767,407: **Dipen N. Sinha**, "Noninvasive Identification of Fluids by Swept-Frequency Acoustic Interferometry".
 39. U.S. Pat. No. 5,739,432: **Dipen N. Sinha**, "Ultrasonic Characterization of Single Drops of Liquids".
 40. U.S. Pat. No. 5,606,130: **Dipen N. Sinha**, Brian W. Anthony, "Method for Determining the Octane Rating of Gasoline Samples by Observing Corresponding Acoustic Resonances Therein".
 41. U.S. Pat. No. 5,426,977: **Dipen N. Sinha**, Roger G. Johnston, "Method for Establishing the Presence of Salmonella Bacteria in Eggs".
 42. U.S. Pat. No. 5,375,595: **Dipen N. Sinha**, William O. Wray, "Apparatus and Method for Noncontact, Acoustic Resonance Determination of Intraocular Pressure".
 43. U.S. Pat. No. 5,222,388: **Dipen N. Sinha**, William H. Christensen, Stephen F. Agnew, "Nitrogen Dioxide Detection".
 44. U.S. Pat. No. 4,912,355: Darryl L. G. Smith, **Dipen N. Sinha**, Bruce W. Noel, "Superlattice Strain Gage".

PUBLICATIONS AND PRESENTATIONS

Book: (Eds. Moises Levy, Dipen Sinha, and Richard Raspet) *Handbook of Elastic Properties of Solids, Liquids, and Gases, Volume IV*, Academic Press (2001); This book has found wide spread use in libraries all around the world.

Book Chapter: Dipen N. Sinha and Greg Kaduchak, "Noninvasive Determination of Sound Speed and Attenuation in Chemical Warfare Agents" in *Elastic Properties of Fluids: Liquids and Gases*, Volume IV, Chapter 1, p. 3-21, Volume Editors: Moises Levy, Dipen Sinha, and Richard Raspet, Academic Press, 2001.

Book Chapter: Dipen N. Sinha and Gregory Kaduchak, "Noninvasive Determination of Sound Speed and Attenuation in Liquids", *Modern Acoustical Techniques for the Measurement of Mechanical Properties*, Vol. 39. Academic Press, September 2001.

Top five inventions in acoustics for the year 2005 by McGraw-Hill and Scientific American, Gregory Kaduchak, Christopher Kwiatkowski, **Dipen Sinha**, "Ultrasonic aerosol concentration and positioning", **Cover Page**, Scientific Computing & Automation, June 1998.

Nonlinear Acoustic, Acoustic Manipulation, Collimated Acoustic Beam, Metamaterials

- Yu Chen, Kai Gao, Eric S. Davis, Dipen N. Sinha, Cristian Pantea, and Lianjie Huang, "Full-waveform inversion and least-squares reverse-time migration imaging of collimated ultrasonic-beam data for high-resolution wellbore integrity monitoring", *Appl. Phys. Lett.* 113, 071903 (2018).
- Eric S. Davis, Cristian Pantea, Blake Sturtevant, and Dipen N. Sinha, "Probing dynamic response to temperature changes in Berea Sandstone using acoustic time-of-flight and resonant ultrasound spectroscopy", *J. Acoust. Soc. Am.*, 143(3):1960-1960 (2018).
- Blake Sturtevant, Dipen N. Sinha, and Cristian Pantea, "An ultrafast broadband digital signal processing approach to pulse echo measurements", *J. Acoust. Soc. Am.*, 143(3):1960-1960 (2018).
- Maruti Mudunuru, Vamshi Krishna Chillara, Satish Karra, and Dipen N. Sinha, "A machine learning framework to understand multiphase flow using acoustic signals (Conference Presentation)", *Disruptive Technologies in Information Sciences*
- Vamshi Krishna Chillara, Cristian Pantea, and Dipen N. Sinha, "Radial modes of laterally stiffened piezoelectric disc transducers for ultrasonic collimated beam generation," *Wave Motion*, 76, 19-27 (2018).
- Vamshi Krishna Chillara, Cristian Pantea, and Dipen N. Sinha "Low-frequency ultrasonic Bessel-like collimated beam generation from radial modes of piezoelectric transducers," *Applied Physics Letters*, 110, 6, 064101 (2017).
- Christian Vanhille, Cristian Pantea, and Dipen N. Sinha, "Acoustic Characterization of Fluorinert FC-43 Liquid with Helium Gas Bubbles: Numerical Experiments"; *Shock and Vibration*, vol. 2017, (2017), 2518168.
- B. T. Sturtevant, C. Pantea, and Dipen N. Sinha, "High frequency signal acquisition using a smartphone in an undergraduate teaching laboratory: Applications in ultrasonic resonance spectra", *J. Acoust. Soc. Am.*, vol. 140, issue 4, (2016), pp. 2810.
- V.K. Chillara, C. Pantea and Dipen N. Sinha, "Coupled electromechanical modeling of piezoelectric disc transducers for low-frequency ultrasonic collimated beam generation", *Proceedings of SPIE*, vol. 10170, (2017), Article no. 1017024.
- V.K. Chillara, B.T. Sturtevant, C. Pantea and Dipen N. Sinha, "Ultrasonic Sensing for Noninvasive Characterization of Oil-water-gas Flow in a Pipe", 43rd Annual Review of

- Progress in Quantitative Nondestructive Evaluation, Volume 36, *AIP Conf. Proc.*, vol. 1806, (2017), pp. 090014.
- Blake T Sturtevant, Cristian Pantea, Dipen N Sinha, "The acoustic nonlinearity parameter in Fluorinert up to 381 K and 13.8 MPa", *J. Acoust. Soc. Am.* **138** (1), July 2015, EL31
 - B.T. Sturtevant, C. Pantea, D.N. Sinha, "The Acoustic Nonlinearity Parameter in Fluorinert FC-43 up to 381 K and 13.8 MPa," *J. Acoust. Soc. Am. Express Letters* (2015), DOI: 10.1121/1.4922537.
 - Christian Vanhille, Cleofe Camplos-Pozuelo, and Dipen N. Sinha, "Nonlinear frequency mixing in a resonant cavity: Numerical simulations in a bubbly liquid", *Ultrasonics* 54(8), November 2015, 2051-2054.
 - B.T. Sturtevant, Cristian Pantea, Dipen N. Sinha, "Evaluating the Effectiveness of the Transmission Line Model in Pulse Echo Couplant Layer Corrections," *IEEE Trans. Ultrason., Ferroelect., Freq. Contr.*, Vol 60, No. 5, May 2013, pp. 943-953
 - Cristian Pantea, Dipen N Sinha: "Broad-band acoustic low frequency collimated beam for ultrasonic imaging". *The Journal of the Acoustical Society of America* 05/2013; **133**(5):3423.
 - Dipen N Sinha, Cristian Pantea: "Broadband directional ultrasound propagation using sonic crystal and nonlinear medium". *The Journal of the Acoustical Society of America* 05/2013; **133**(5):3461.
 - Dipen N. Sinha, Cristian Pantea: "Broadband unidirectional ultrasound propagation using sonic crystal and nonlinear medium", *Emerging Materials Research*. 04/2013; 2(EMR3):117-126
 - Cristian Pantea, Curtis F Osterhoudt, Dipen N Sinha: "Determination of acoustical nonlinear parameter β of water using the finite amplitude method", *Ultrasonics* vol. 53, no. 5, (2013), pp. 1012-1019.
 - B.T. Sturtevant, Cristian Pantea, Dipen N. Sinha, "Determination of the parameter of nonlinearity in liquid water up to 250C and 14 MPa," *Proc. of 2012 IEEE Int'l Ultrason. Symp.*, doi: 10.1109/ULTSYM.2012.0070.
 - B.T. Sturtevant, Cristian Pantea, Dipen N. Sinha, "An Acoustic Resonance Measurement Cell for Liquid Property Determinations up to 250C ," *Rev. Sci. Instrum.* **83**, 115106 (2012); doi: 10.1063/1.4765746.
 - Bart Raeymaekers, Cristian Pantea, Dipen N Sinha: "Creating a collimated ultrasound beam in highly attenuating fluids", *Ultrasonics* 12/2011; 52(4):564-70.
 - John F Brady, Dipen N Sinha: "A multi-beam array technique for acoustical imaging", *The Journal of the Acoustical Society of America* 10/2011; 130(4):2411.
 - F G Mitri, F H Garzon, D N Sinha: "Characterization of acoustically engineered polymer nanocomposite metamaterials using x-ray microcomputed tomography". *The Review of scientific instruments* 03/2011; 82(3):034903.
 - F G Mitri and Dipen N Sinha: "Creating a nanocomposite metamaterial structure using the radiation force of ultrasound standing waves", 2011 IEEE INTERNATIONAL ULTRASONICS SYMPOSIUM (IUS) Pages: 1556-1558 DOI: 10.1109/ULTSYM.2011.0386

Published: 2012.

- Cristian Pantea, Dipen N. Sinha: "Acoustical filters and nonlinear acoustic wave propagation in liquids", The Journal of the Acoustical Society of America 01/2011; 129.
- F. G. Mitri, D. N. Sinha: "Metamaterial synthesis using the acoustic radiation force and characterization with x-ray microcomputed tomography". The Journal of the Acoustical Society of America 01/2011; 129.
- Bart Raeymaekers, Cristian Pantea, Dipen N. Sinha: "Manipulating 5 nanometer diamond nanoparticles in user-defined patterns using bulk acoustic waves". The Journal of the Acoustical Society of America 01/2011; 129.
- Bart Raeymaekers, Cristian Pantea, Dipen N. Sinha: "Manipulation of diamond nanoparticles using bulk acoustic waves", Journal of Applied Physics 01/2011; 109(1):014317.
- Bart Raeymaekers, Cristian Pantea, Dipen Sinha: "Manipulation of diamond nano-particles using bulk acoustic waves", The Journal of the Acoustical Society of America 10/2010; 128(4):2338.
- Cristian Pantea, Dipen N Sinha: "Acoustical shock formation in highly nonlinear fluids", The Journal of the Acoustical Society of America 03/2010; 127(3):1948.
- Bart Raeymaekers, Cristian Pantea, Curtis F Osterhoudt, Dipen N Sinha: "Ultrasonic imaging and characterization of objects submerged in highly attenuating fluids", The Journal of the Acoustical Society of America 03/2010; 127(3):1845.
- Cristian Pantea, Dipen N Sinha, Curtis F Osterhoudt, Paul C Mombourquette: "Acoustic nonlinearity in fluorinert FC-43", The Journal of the Acoustical Society of America 05/2009; 125(4):2720.
- Greg Kaduchak and Dipen N. Sinha, "Resonance Acoustic Concentration of Suspended Particles for Optical Discrimination of Aerosols", Proceedings of the Resonance Meeting. Volume 1. Transcripts, ADPO 11293
- Gregory Kaduchak, Christopher Kwiatkowski, Dipen Sinha, "Ultrasonic aerosol concentration and positioning", in AccessScience@McGraw-Hill, <http://www.accessscience.com>, DOI 10.1036/1097-8542.YB050550, last modified: December 6, 2005. The technology developed here at LANL is considered one of the top five inventions in acoustics for the year!
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- Gregory Kaduchak, Christopher Kwiatkowski, and Dipen Sinha, "Low-power, cylindrical, air-coupled acoustic levitation concentration devices", J. Acoustic Soc. Am., 114 (4), 2387 (2003)
- Greg Kaduchak and Dipen N. Sinha, "Ultrasonic particle concentration in a line-driven cylindrical tube," presented at the 145th meeting of the Acoustical Society of America.
- Shulim Kogan, Greg Kaduchak, and Dipen N. Sinha, "Acoustic concentration of

particles in piezoelectric tubes: Theoretical modeling of cavity shape and symmetry breaking", J. Acous. Soc. Am., 116 (41), 1967-1974 (2004).

- Greg Kaduchak, Chis Kwiatkowski, and Dipen N. Sinha, "Concentrating and Levitating Aerosols Using Sound", presented at the 146th meeting of the Acoustical Society of America in November 2003.
- Gregory Kaduchak, Aleksandr S. Kogan, Christopher S. Kwiatkowski, and Dipen N. Sinha, "Low-power, cylindrical, air-coupled acoustic levitation/concentration devices: Symmetry breaking of the levitation volume", J. Acoust. Soc. Am. Volume 112, Issue 5, pp. 2242 (2002)
- Greg Kaduchak, Dipen N. Sinha, and David C. Lizon, "A novel low-cost, low-power, off-the-shelf, air-coupled acoustic levitator/concentrator", Review of Scientific Instruments, 73, 1332-1336 (2002).
- Gregory Kaduchak and Dipen N. Sinha, "Low-Power Acoustic Harvesting of Aerosols", 2001 IEEE International Ultrasonics Symposium Proceedings, 607-610 (2001).
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- Christopher Kwiatkowski and Dipen N. Sinha, "Ultrasonic Frequency Difference Generation to Characterize Fluids in Saturated Berea Sandstone", 2001 IEEE International Ultrasonics Symposium Proceedings, 475-478 (2001).
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- G. Kaduchak and D. N. Sinha, "Resonance acoustic concentration of suspended particles for optical discrimination of aerosols," presented at the 'Resonances' meeting at the National Center for Physical Acoustics, May 1999 (published in proceedings).
- Dipen N. Sinha, G. Kaduchak, and M. J. Keleher, "Remote ultrasonic classification of fluids using the acoustic resonance characteristics of the container," presented at the 'Resonances' meeting at the National Center for Physical Acoustics, May 1999 (published in proceedings)

Swept Frequency Acoustic Interferometry, Acoustic resonance Spectroscopy, Acoustics, NDT, Sensors and Arms Control

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- Blake Sturtevant, Cristian Pantea, and Dipen N. Sinha, "Evaluation of the Transmission Line Model for Couplant Layer Corrections in Pulse-Echo

- Measurements”, IEEE transactions on ultrasonics, ferroelectrics, and frequency control April 2013, 60(5):943-53 .
- Blake Sturtevant, Dipen N Sinha: “Sound speed and frequency-dependent attenuation determination in highly attenuating lubrication fluids”. The Journal of the Acoustical Society of America 11/2013; 134(5):4129.
 - Anirban Chaudhuri, Dipen N Sinha: “Multiple methods for calculating ultrasonic attenuation in liquids from non-invasive swept frequency experiments.” The Journal of the Acoustical Society of America 11/2013; 134(5):4226.
 - Blake Sturtevant, Cristian Pantea, Dipen Sinha: “Evaluation of the transmission line model for couplant layer corrections in pulse-echo measurements”. IEEE transactions on ultrasonics, ferroelectrics, and frequency control 05/2013; 60(5):943-53.
 - Blake T Sturtevant, Cristian Pantea, Dipen N Sinha: “An acoustic resonance measurement cell for liquid property determinations up to 250 °C”, The Review of scientific instruments 11/2012; 83(11):115106., doi: 10.1063/1.4765746
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 - Anirban Chaudhuri, Curtis F. Osterhoudt, Dipen N. Sinha: “An Algorithm for Determining Volume Fractions in Two-Phase Liquid Flows by Measuring Sound Speed”, Journal of Fluids Engineering 01/2012; 134(10):101301.
- Blake T. Sturtevant, Cristian Pantea, Dipen N. Sinha: “Coupling layer corrections in pulse echo time-of-flight measurements in solids revisited”, The Journal of the Acoustical Society of America 01/2011; 129.
- Anirban Chaudhuri, Curtis F. Osterhoudt, Dipen N. Sinha: “Using sound speed to determine volume fractions in a two-phase flow”, The Journal of the Acoustical Society of America 01/2011; 129.
 - Cristian Pantea, Blake T Sturtevant, Dipen N Sinha: “Resonant ultrasound spectroscopy of sandstone”, The Journal of the Acoustical Society of America 10/2010; 128(4):2453.
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TV appearance: Good Morning America, BBC, CBS, Channel 13.

Radio talk show (CBC, Canada)

PROFESSIONAL MEMBERSHIP

American Physical Society

Acoustical Society of America

IEEE

Society for Brain Mapping and Therapeutics (Member of the board)