A BRIEF DESCRIPTION OF DR. TRIBIKRAM KUNDU

Professor Tribikram Kundu received his bachelor degree in Mechanical Engineering from the Indian Institute of Technology, Kharagpur in 1979. His MS and PhD were from the Department of Mechanics and Structures at the University of California, Los Angeles in 1980 and 1983, respectively. He joined the Department of Civil Engineering and Engineering Mechanics of the University of Arizona as an Assistant Professor in August 1983 and was promoted to full professor in August 1994.

Dr. Kundu has made significant and original contributions in both basic and applied research in nondestructive testing (NDT) and structural health monitoring (SHM) by ultrasonic and electromagnetic techniques. His fundamental research interests are in the analysis of elastic and electromagnetic wave propagation in multi-layered solids, fracture mechanics, biomechanics and computational mechanics. Application areas of his research findings include civil and structural materials, aerospace materials, geomaterials, electronic and biological materials. He has published 7 books (2 text books and 5 research monographs), 15 book chapters and 320 technical papers, 161 of these papers have been published in refereed scientific journals. As of June 7, 2017, according to Google Scholar (http://scholar.google.com/citations?user=zKRoHmwAAAAJ&hl=en) his publications have been cited 5613 times with an h-index of 43 (*i.e.* at least 43 of his publications have been cited 43 times or more) and i10-index is 135 (*i.e.* 135 of his papers have been cited 10 times or more). According to Web of Science his h-index and citation numbers are 26 and 2467, respectively as of June 7, 2017). He has also edited 22 conference proceedings, supervised 37 PhD students [33 at the University of Arizona (9 jointly) and 4 in foreign universities] and 26 MS students [25 at the University of Arizona (2 jointly) and 1 in a foreign university]. Currently he is supervising 2 MS and 4 PhD students (1 jointly in a foreign university). He is Fellow of five societies - ASME (American Society of Mechanical Engineers), ASCE (American Society of Civil Engineers), ASA (Acoustical Society of America), ASNT (American Society of Nondestructive Testing) and SPIE (The International Society for Optics and Photonics) - and a life member of AvHAA (Alexander von Humboldt Association of America). He is the Chairman of the SPIE yearly conference on Health Monitoring of Structural and Biological Systems (held in March of every year). He has served as the Chairman of the ASME NDE Engineering Division from 2003 to 2005.

He is the founding Editor-in-Chief of the *ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems* (serving as EIC since April 2017). He was also the founding Editor-in-Chief of the *Journal of Civil Engineering and Science*, (served as EIC from 2012 to 2017). He is currently serving as an Associate Editor (AE) of *Ultrasonics* since 2014 and served as an AE of the *Journal of the Acoustical Society of America* (2012-2017), *ASME Journal of Pressure Vessel Technology* (2006-2012) and *Structural Health Monitoring: An International Journal* (2008-2017). He served on the editorial advisory board of the *International Journal of Geomechanics* (2001-2006) and *Structural Longevity journal* (2009-2017). He has extensive collaborations with international and US scientists. He has spent 28 months in the Department of Biology, J. W. Goethe University, Frankfurt, Germany, first as an Alexander von Humboldt Fellow and then as a Humboldt Research Prize winner. He has also spent minimum one month to several years in each of the following institutes as an Invited Professor

- Department of Mechanics, **Chalmers University of Technology**, Gothenburg, Sweden
- Acoustic Microscopy Center, **Semienov Institute of Chemical Physics**, Russian Academy of Science, Moscow
- Department of Civil Engineering, **EPFL** (Swiss Federal Institute of Technology in Lausanne), Switzerland
- Department of Mechanical Engineering, **University of Technology, Compiegne**, France
- Laboratory of Mechanics and Physics, **University of Bordeaux**, France
- Electrical Engineering Department (SATIE Lab.), **Ecole Normale Superieure** (ENS), Cachan, France
- **Aarhus University Medical School**, Aarhus, Denmark
- Department of Applied Physics, **University of Leipzig**, Germany
- Graduate School of Frontier Sciences, **University of Tokyo**, Japan
- **Technical University of Valencia (UPV)**, Spain
- **KAIST** (Korea Advanced Institute of Science and Technology), Daejeon, South Korea

- **AGH University of Science and Technology**, Krakow, Poland
- Centre for Mechanics of Machines; **Polish Academy of Sciences**, Gdansk, Poland
- Nondestructive Evaluation branch of the **Wright-Patterson Material Laboratory**, Air Force Research Laboratory (AFRL), Dayton, Ohio.

Dr. Kundu has received a number of recognitions; some of those are listed below.

- **Humboldt Research Prize** from Germany, Senior Scientist Award, 2003
- **Humboldt Fellowship Award** from Germany in 1996-97 and 1989-90
- **NDE Lifetime Achievement Award** 2012 from SPIE (The International Society for Optics and Photonics) (the award certificate was given in March 2012 at the SPIE's annual symposium on Smart Structures/NDE).
- **2015 Research Award for Sustained Excellence** from ASNT (The American Society for Nondestructive Testing) in recognition of his outstanding and sustained contributions in NDE/NDT (the award was given on March 18, 2015 at the ASNT's research symposium in Anaheim, California)
- **2015 SHM Lifetime Achievement Award** chosen by the researchers and educators in the field of Structural Health Monitoring. This award was given at the International Workshop on Structural Health Monitoring at Stanford University in September 2015. Details are in http://structure.stanford.edu/workshop/awards.html
- **Structural Health Monitoring Person of the Year** 2008 (chosen by the SHM community & SHM Journal)
- **Engineering Faculty Fellow** of the University of Arizona 2012 – for his research contribution the Engineering College of the University of Arizona recognized him as the Engineering Faculty Fellow that comes with a salary raise, similar to Chair Professorships in some other universities. Selected few faculty members are given this distinguished honor. The College of Engineering of the University of Arizona does not have any Chair Professorship but instead has Engineering Research Faculty Fellow and Teaching Faculty Fellow recognitions.
- **Elected Fellow of ASA** (The Acoustical Society of America), 2013
- **Elected Fellow of ASNT** (The American Society for Nondestructive Testing), 2013
- **Elected Fellow of SPIE** (The International Society for Optics and Photonics), 2005
- **Elected Fellow of ASCE** (The American Society of Civil Engineers), 2000
- **Elected Fellow of ASME** (The American Society of Mechanical Engineers), 1999
- **Best Paper Award** 2004 from SPIE
- **Best Paper Award** 2000 from SPIE
- **Best Paper Award** 2001 from ASME NDE Division (awarded to his PhD student who is the leading author)
- **Invited Professor** from a number of foreign Universities (Chalmers University of Technology, Gothenberg, Sweden, 1989; Swiss Federal Institute of Technology, Lausanne, Switzerland, 1996; University of Technology of Compiegne, France, 1997; University of Bordeaux, France, 1997, 2009; Ecole Normale Superior (ENS), Cachan, France, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010; University of Leipzig, Germany, 2003; University of Tokyo, Japan, 2010, 2011, 2012, 2013; Technical University of Valencia or UPV, Spain, 2012; Korea Advanced Institute of Science and Technology or KAIST, South Korea, 2013; AGH University of Science and Technology, Krakow, Poland, 2014; Hohai University in Nanjing, Harbin Institute of Technology, Jilin University, Xiamen University and Sichuan University, China, 2015.
- **Plenary and Keynote talks** in a number of conferences and workshops
  - Plenary talk at the IMECE (International Mechanical Engineering Congress and Exposition), Phoenix, Arizona, USA, Nov. 16, 2016
  - Plenary talk at the ASNT Research Symposium in Anaheim, California, USA, March 18, 2015;
  - One of four Plenary speakers at the 2013 Smart Structures/NDE Symposium, in San Diego, USA, March 10-14, 2013;
  - Plenary talk at the SMART'09 (Smart Structures and Materials IV), Porto, Portugal, July 13-15, 2009;
  - Keynote talk in 2nd CANEUS Fly-by-Wireless Workshop, Montreal, Canada, June 8-12, 2009;
  - One of six Keynote talks at the International Symposium on Nondestructive Testing of Materials and Structure (NDTMS-2011), Instanbul, Turkey, May 16-18, 2011;
  - Keynote talk in 150-Year Anniversary Conference at Bengal Engineering and Science University, Shibpur, West Bengal, India, Jan. 11-14, 2007,
  - Four more Keynote talks in International Conference on Theoretical, Applied, Computational and

Experimental Mechanics (ICTACEM) IIT Kharagpur, India in Dec. 1998, 2001, 2004 and 2007.

- **Certificate of Appreciation** from ASME Pressure Vessels and Piping (PVP) Division in 'Deep Appreciation for His Valued Service in Advancing the Engineering Profession', presented at the Honors and Awards Luncheon of PVP Conference in Toronto, Canada, July 18, 2012
- **Outstanding Faculty Award** from the Department of Civil Engineering & Engineering Mechanics for undergraduate teaching, selected by undergraduate students, 2009.
- **Award for Excellence at the Students Interface**, award from the Dean's Office, May 2009
- **Outstanding Honors College Faculty Award** by the University of Arizona Honors College, 2002
- **Outstanding Asian Faculty Member of the year award** at the University of Arizona in 1995
- **UCLA Alumni Award - Outstanding Graduate Student of the year** in the College of Engineering, 1981
- **President of India Gold Medal** (PGM) for ranking first among all graduating engineers from I.I.T. Kharagpur in 1979
- **Hortense Fishbaugh Memorial Scholarship** 1982-83 from UCLA
- **University of California Regents' Fellowship** 1979-81
- **Jagadish Bose National Science Talent Search Scholarship** – one of 8 recipients in India – 1974-79

PROFESSIONAL SOCIETY AND OTHER ORGANIZATIONAL ACTIVITIES

Dr. Kundu was one of the four organizers of the Second International Conference on *Constitutive Laws for Engineering Materials* that was held in Tucson in January 1987.

Organized the First Symposium on *Acousto-Optics and Acoustic Microscopy* in 1992 ASME Winter Annual Meeting in Anaheim California.

Organized A Second Symposium on *Acoustic Microscopy for Material Characterization* in 1998 International Mechanical Engineering Congress and Exposition in Anaheim California.

Organized a symposium on the *Recent Advances of the Ultrasonic NDE and Composite Material Characterization* in the International Mechanical Engineering Congress and Exposition in Nashville, Tennessee, Nov.14-19, 1999.

Dr. Kundu co-organized a symposium on NDE entitled *Nondestructive Evaluation and Characterization of Engineering Materials for Reliability and Durability Predictions*, in the International Mechanical Engineering Congress and Exposition in Orlando, Florida, Nov.5-10, 2000.

March 2000, Vice-Chairman of the SPIE (the International Society for Optical Engineering) conference on NDE of Aging Airplanes and Aircraft Structures, Newport Beach, California.

January 2001, Co-chairman of the 10^{th} International Conference of IACMAG (International Association for Computer Methods and Advances in Geomechanics), Tucson, Arizona, January 7-12, 2001

March 4-8, 2001, Chairman of the SPIE conference on the Advanced NDE for Health Monitoring of Structural and Biological Materials (ND01), SPIE's 6^{th} Annual International Symposium, in Newport Beach, California. As the chairman he doubled the number of conference participants in comparison to the previous year.

April 23-25, 2001, Co-Chairman of the 7^{th} ASME NDE Topical Conference in San Antonio Texas

December 27-30, 2001, Chairman of the Scientific/Technical Committee of the Second International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Kharagpur IIT, India

March 17-21, 2002, Chairman of the SPIE conference on Smart NDE for Health Monitoring of Structural and Biological Systems, San Diego, California.

July 10-12, 2002, and July 7-9, 2005 International Scientific Committee member of the First and Second European Workshop on Structural Health Monitoring, at ENS Cachan, France.

Dr. Kundu served as the Program representative of the ASME NDE Division in 1999, 2000, 2001 and 2002 for the IMEC&E (Int. Mech. Engineering Congress and Exposition). As the program representative he initiated the participation of the NDE Division at IMEC&E.

In 2002 IMEC&E he served as the M&S (Materials and Structures) group representative. As the group representative he is in charge of allocating sessions to the Materials Division, Pressure Vessels and Piping Division and NDE Division.

March 2-6, 2003, Chairman of the SPIE conference on Smart NDE and Health Monitoring of Structural and Biological Systems, San Diego, California

March 14-18, 2004, Chairman of the SPIE conference on Health Monitoring and Smart NDE of Structural and Biological Systems, San Diego, California

One of two Co-organizers from the US side (the other co-organizer was Prof. M. P. Singh of Virginia Tech.) for the Joint US-India Workshop on Advanced Sensing Systems and Smart Structures Technologies, in cooperation with IIT Bombay, on December 20-22, 2004. This workshop was jointly funded by the NSF and IIT Bombay.

Organizing Committee Co-Chairman of the 3nd International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2004) in Kharagpur, India, Dec. 28-30, 2004

March 6-10, 2005, Chairman of the SPIE conference on Health Monitoring and Smart NDE of Structural and Biological Systems, San Diego, California

2003 - 2005, Chairman of the NDE Engineering Division of ASME. NDE is one of 37 Technical Divisions of ASME.

February 26 - March 2, 2006, Chairman of the SPIE conference on Health Monitoring and Smart NDE of Structural and Biological Systems, San Diego, California

March 18-20, 2007, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 10-13, 2008, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 9-12, 2009, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 7-11, 2010, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 6-10, 2011, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 11-15, 2012, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 10-14, 2013, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 9-13, 2014, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 8-12, 2015, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, San Diego, California

March 20-24, 2016, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, Las Vegas, Nevada; Vice-Chairman of the SPIE Symposium on Smart Structures and NDE which is composed of 8 different conferences. The symposium was attended by about 800 delegates.

March 25-30, 2017, Chairman of the SPIE conference on Health Monitoring of Structural and Biological Systems, Portland, Oregon; Vice-Chairman of the SPIE Symposium on Smart Structures and NDE which is composed of 8 different conferences. The symposium was attended by about 800 delegates.

Service Activities within the University of Arizona

At the University of Arizona Dr. Kundu Represented the College of Engineering at the Undergraduate Council, the University Committee that makes the recommendation to the President and Provost's office on any policy change related to the undergraduate education, 2005-2007.

Dr. Kundu represented the Civil Engineering and Engineering Mechanics Department in the College Advisory Committee that advises the Dean of Engineering on college policies and affairs.

Served in the Promotion and Tenure (P&T) Committee (also known as the Faculty Status Committee) and Post-Tenure Review Committee for the College of Engineering

Served as the Chairman of the P&T Committee of the Dept. of Civil Engineering and Engineering Mechanics

Served as the Chairman of the Annual Performance Evaluation and Post Tenure Review Committee of the Civil Engineering and Engineering Mechanics Department. Dr. Kundu, as the Chairman of this important committee, was the main architect of the faculty performance evaluation guidelines.

A BRIEF DESCRIPTION OF THE RESEARCH INTEREST

Dr. Kundu has made significant and original contributions in both basic and applied research in structural health monitoring (SHM) and nondestructive testing techniques (NDT) for material characterization by ultrasonic and electromagnetic waves. His research interests include acoustic microscopy, elastic wave propagation in multilayered solids, fracture mechanics, computational mechanics, and numerical modeling. Application areas of his research findings can be in aerospace materials, civil and structural materials, geomaterials, electronic as well as biological materials. His research on biological material characterization has also received international acclaim. He has won the Humboldt research prize (also known as the Senior Scientist Award) from Germany for his research on biological cell characterization. He has developed a new mesh-free semi-analytical/numerical technique called distributed point source method (DPSM) in collaboration with his French colleagues. This technique has been found to be superior to the finite element method (FEM) for solving many ultrasonic, electrostatic and electro-magnetic problems. He has co-authored the first book on DPSM.

Dr. Kundu has collaborated with European scientists on theoretical and experimental research on engineering and biological materials. Most of his European collaborations have been funded by foreign funding agencies in Germany (Alexander von Humboldt Foundation), Belgium (NATO, North Atlantic Treaty Organization), France (French Ministry of Education), Denmark (Aarhus University Medical School), Spain, Poland, Sweden, Switzerland, Japan, South Korea, India and China. Among domestic sources, the National Science Foundation and the Air Force Office of Scientific Research have provided the lion share of his research funding. Besides Humboldt Research Prize he has won the NDE Life Time Achievement Award from SPIE and Research Award for Sustained Excellence from ASNT for his research contributions.

He has organized a number of international conferences and symposia on the topics of his research interest in USA and abroad as mentioned in the previous section.

TEACHING EXPERIENCE

Professor Kundu has taught a variety of courses on mechanics and numerical methods. These include undergraduate courses on Statics, Dynamics, Strength of Material, Numerical Analysis with MATLAB, Structural Analysis, and Finite Element Method. At the graduate level he has taught courses on Continuum Mechanics, Elasticity, Plasticity, Advanced Finite Element Analysis, Fracture Mechanics and Elastic Wave Propagation in Solids. He has developed the last three graduate courses at the University of Arizona and thoroughly revised the first three. He has authored a textbook on fracture mechanics that also includes elasticity theory in its first chapter, co-authored a textbook on Introductory Finite Element Method and edited a book on Ultrasonic Nondestructive Evaluation that can be used as a textbook for a graduate level course on elastic waves. He has supervised 24 MS students (2 jointly), 35 PhD students (9 jointly and 3 in Foreign Institutes), and 7 post-doctoral research scholars. He is currently supervising 2 MS and 4 PhD (1 jointly) students. In 1999 his MS student (Y.C. Jung) received the best MS thesis award at the University of Arizona. Only one MS thesis was selected for this award in 1999 among all fields of science, engineering and humanities. In three consecutive years 2000, 2001 and 2002 his PhD student C. M. Dao received the Bill Gates Millennium scholarship and was selected for the Outstanding Graduate Student of the CEEM (Civil Engineering & Engineering Mechanics) Department in 2007. His PhD students Samik Das and Ehsan Kabiri Rahani also received the Outstanding Graduate Student of the CEEM Department award in 2008 and 2011, respectively. In 2009 he received the outstanding faculty award for his teaching, selected by the undergraduate students of the CEEM department. In the year 2000 Dr. Kundu received a Letter of Commendation from the Graduate College of the University of Arizona for his contributions in graduate teaching, research and mentoring activities. In May 2002 he received a special recognition as the *Outstanding Honors Faculty*, awarded by the University of Arizona and the Honors College for his 'outstanding and dedicated service in guiding undergraduate students of the Honors College'. His former graduate students are now faculty members in USA (University of South Carolina, California State University at Northridge, North Carolina State University and State University of New York at Buffalo), and abroad - South Korea, India, Brazil, Qatar and Turkey.

CURRICULUM VITAE

TRIBIKRAM KUNDU, Professor (Engineering Faculty Fellow Professor)
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tkundu@email.Arizona.edu

PERSONAL DATA: Citizen of U.S.A., Married, Two Children

EDUCATION:

1979 B.Tech.	Mechanical Engineering, I.I.T. Kharagpur, India Ranked first among all graduating engineers (about 300) of all majors.
1980 MS	Solid Mechanics, UCLA, USA, GPA - 4.0/4.0 Thesis: Diffraction of Elastic Waves by a Surface Crack in a Plate. Ranked first among all MS candidates in engineering.
1983 PhD	Solid Mechanics, UCLA, USA GPA - 4.0/4.0 Dissertation: Elastic Wave Propagation in Multilayered Solids Graduate Advisor: Professor A. K. Mal

ACADEMIC EXPERIENCE:

~~Aug 2012 - present~~	~~Engineering Faculty Fellow Professor, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona (Faculty Fellow Recognition at UA is similar to Chair professorship at other universities).~~
Aug 1994 - present	Professor, Department of Civil Engineering and Engineering Mechanics, Director of NDE Laboratory, University of Arizona, Tucson, Arizona.
Aug 2012 – Aug 2015	Engineering Faculty Fellow Professor, Department of Civil Engineering and Engineering Mechanics, University of Arizona (Engineering College recognizes outstanding research achievements of selected few faculty members for a 3 year appointment as the engineering faculty fellow that comes with salary raise).
Aug 1989 - July 1994	Associate Professor, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona.
Aug 1983 - July 1989	Assistant Professor, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, Arizona.

HONORS AND AWARDS:

Humboldt Research Prize from Germany - also known as the **Senior Scientist Award** - 2003

NDE Lifetime Achievement Award 2012 from **SPIE** (the International Society for Optics and Photonics)

Research Award for Sustained Excellence 2015 from ASNT (The American Society for Nondestructive Testing)

in recognition of his outstanding and sustained contributions in NDE/NDT (the award certificate was given in March 2015 at the ASNT's research symposium in Anaheim, California). Details about this award can be found at the website https://www.asnt.org/MinorSiteSections/AboutASNT/Awards/ResearchCouncil-Excellence.aspx

2015 SHM Lifetime Achievement Award chosen by the researchers and educators in the field of Structural Health Monitoring. This award was given at the International Workshop on Structural Health Monitoring at Stanford University in September 2015. Details are in http://structure.stanford.edu/workshop/awards.html

Alexander von Humboldt Stiftung Fellowship from Germany in 1996-97 and 1989-90

Structural Health Monitoring Person of the Year Award 2008 (chosen by the SHM Journal Editorial Board)

Engineering Faculty Fellow of the University of Arizona - In 2012 the College of Engineering at the University of Arizona recognized him as the ***Engineering Faculty Fellow Professor for Research*** that comes with a salary raise, similar to Chair Professorships in some other universities. Selected few faculty members are given this distinguished honor for their teaching or research accomplishments. The College of Engineering of the University of Arizona does not have any Chair Professorship but instead has *Engineering Research Faculty Fellow* and *Teaching Faculty Fellow* positions to recognize outstanding research and teaching contributions, respectively. ~~In the Civil Engineering and Engineering Mechanics Department T. Kundu is the *Engineering Research Faculty Fellow.*~~

Elected Fellow of ASA (Acoustical Society of America), 2013

Elected Fellow of ASNT (American Society of Nondestructive Testing), 2013

Elected Fellow of SPIE (The International Society for Optics and Photonics, the old name - Society of Photo-Optical Instrumentation Engineers) 2005

Elected Fellow of ASCE, 2000

Elected Fellow of ASME, 1999

Best Paper Award 2004 from SPIE – Received for the paper, "Bio-soft matter imaging and micro-metrology by Phase-sensitive ultrasonic microscopy", by W. Ngwa, W. Grill and T. Kundu presented at the *Health Monitoring and Smart Nondestructive Evaluation of Structural and Biological Systems* conference at the SPIE's 9th Annual International Symposium on NDE for Health Monitoring and Diagnostics, March 15-17, 2004, San Diego, California, 2004. The award was formally given at the SPIE's 10th Annual International Symposium on NDE for Health Monitoring and Diagnostics, in March 2005.

Best Paper Award 2000 from SPIE - The International Society for Optical Engineering or SPIE's 5th International Symposium on Nondestructive Evaluation and Health Monitoring of Aging Infrastructure, Newport Beach California, March 5-9, 2000. The paper on the near Lamb mode imaging co-authored by Kundu, Potel and de Belleval was selected as the best paper of the four NDE conferences combined. These four conferences are, "Nondestructive Evaluation of Aging Materials and Composites", "Nondestructive Evaluation of Aging Aircraft, Airports, and Aerospace Hardware", "Health Monitoring of the Highway Transportation Infrastructure", and "Utility and Pipeline Systems and Components". The award was formally given at the SPIE's 6th Annual International Symposium on NDE for Health Monitoring and Diagnostics, in March 2001.

Best Student Paper Award 2001 from ASME - Na, W. B., and T. Kundu, "Underwater Pipe Inspection using Guided Waves", presented at the ASME Symposium on NDE Challenges of the 21st Century, Theory and Practice in IMECE 2001 Conference, New York, Nov.11-16, 2001 was selected as the best paper among all papers where leading author is a graduate student.

Certificate of Appreciation from ASME Pressure Vessels and Piping (PVP) Division in 'Deep Appreciation for His Valued Service in Advancing the Engineering Profession', presented at the Honors and Awards Luncheon of PVP Conference in Toronto, Canada, July 18, 2012

Invited Professorship from a number of European Universities (Chalmers University of Technology, Gothenberg, Sweden, 1989; Swiss Federal Institute of Technology, Lausanne, Switzerland, 1996; University of Technology of Compiegne, France, 1997; University of Bordeaux, France, 1997, 2009; Ecole Normale Superior (ENS), Cachan, France, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010; University of Leipzig, Germany, 2003, University of Tokyo, Japan, 2010, 2011, 2012, 2013 Technical University of Valencia or UPV, Spain 2012, Korean Advanced Institute of Science and Technology or KAIST, South Korea, 2013)

Plenary and Keynote talks in a number of conferences and workshops

- Plenary talk at the IMECE (International Mechanical Engineering Congress and Exposition), Phoenix, Arizona, USA, Nov. 16, 2016
- Plenary talk at the ASNT Research Symposium in Anaheim, California, USA, March 18, 2015
- One of four Plenary speakers at the 2013 Smart Structures/NDE Symposium, in San Diego, USA, March 10-14, 2013;
- Plenary talk at the SMART'09 (Smart Structures and Materials IV), Porto, Portugal, July 13-15, 2009;
- Keynote talk in 2nd CANEUS Fly-by-Wireless Workshop, Montreal, Canada, June 8-12, 2009;
- One of six Keynote talks at the International Symposium on Nondestructive Testing of Materials and Structure (NDTMS-2011), Instanbul, Turkey, May 16-18, 2011;
- Keynote talk in 150-Year Anniversary Conference at Bengal Engineering and Science University, Shibpur, West Bengal, India, Jan. 11-14, 2007,
- Four more Keynote talks in International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM) IIT Kharagpur, India in Dec. 1998, 2001, 2004 and 2007.

Outstanding Honors Faculty, May 2002, awarded by the University of Arizona and the Honors College for outstanding and dedicated service in guiding undergraduate students of the Honors College.

Outstanding Asian Faculty Member of the Year, Oct.1995, awarded by the Asian Faculty, Staff and Alumni Association of the University of Arizona for overall contributions of an individual in teaching, research and service

President of India Gold Medal for ranking first among all graduating engineers (~300) from all disciplines in I.I.T. Kharagpur, 1979.

Hortense Fishbaugh Memorial Scholarship, U.C.L.A., academic year 1982-83. Ten graduate students from all disciplines of U.C.L.A. are awarded this scholarship every year based on their academic achievements.

Outstanding Master Student Award from U.C.L.A. Engineering Alumni Association, March 1981, for ranking first among all Master students who graduated from the Engineering College of U.C.L.A. in 1980.

Regents' Fellowship from the University of California, academic years '79-80 and '80-81. UCLA, USA.

Jagadish Bose National Science Talent Search Scholarship, July '74 to June '79. Calcutta, India. Eight high school graduates from a total of one million are selected for this award every year.

INVITED/VISITING POSITIONS:

June 1989 - Aug 1989	Invited Professor, Chalmers University of Technology, Division of Mechanics, Gothenberg, Sweden.
Sept 1989 - Aug 1990	Alexander von Humboldt Fellow, Biology Department, University of Frankfurt, Frankfurt am Main, Germany.
Summer of '92 & '94	Summer Faculty Fellowship, Wright-Patterson Material Laboratory, Non Destructive Evaluation Branch Air Force Base, Dayton, Ohio.
Aug'94, May, June '95	Invited Scientist, Russian Academy of Science, Moscow.
May & June 1996	Invited Professor, Department of Civil Engineering, EPFL (Swiss Federal Institute of Technology, Lausanne), Switzerland.
July 1996 - Feb. 1997	Alexander von Humboldt Fellow, Biology Department, University of Frankfurt, Frankfurt am Main, Germany.
May 16 - June 15, 1997	Invited Professor, Materials Laboratory, University of Bordeaux, France.
June 16 - August 15, 97	Invited Professor, Department of Mechanical Engineering, University of Technology of Compiegne, France.
June 1 - July 31, 1999	Invited Professor, LESIR Laboratory, Electrical Engr. Dept., ENS Cachan, France.
August 1 - 15, 1999	Invited Scientist, Medical School of Aarhus University, Denmark.
June 1 - July 31, 2000	Invited Professor, LESIR Laboratory, Electrical Engr. Dept., ENS Cachan, France.
August 1 - 15, 2000	Invited Scientist, Medical School of Aarhus University, Denmark.
June 1 - July 31, 2001	Invited Professor, LESIR Laboratory, Electrical Engr. Dept., ENS Cachan, France.
August 1 - 18, 2001	Invited Scientist, Medical School of Aarhus University, Denmark.
June 1 - July 31, 2002	Invited Professor, LESIR Laboratory, Electrical Engr. Dept., ENS Cachan, France.
June 1 - June 30, 2003	Invited Professor, Department of Applied Physics, University of Leipzig, Germany.
July 1 - Dec 31, 2003	Invited US Senior Scientist as the winner of the Humboldt Research Prize, Biology Department, University of Frankfurt, Frankfurt am Main, Germany.
June 1 - June 30, 2004	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France.
July 1 - July 31, 2004	Invited US Senior Scientist, Biology Dept., Univ. Frankfurt, Frankfurt/Main, Germany.
May 1 - May 31, 2005	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France.
June 1 – July 31, 2005	Visiting Faculty at the Air Force Research Laboratory, Dayton, Ohio
June and August, 2006	Visiting Faculty at the Air Force Research Laboratory, Dayton, Ohio

July, 2006	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France
July 2007	Visiting Faculty at the Air Force Research Laboratory, Dayton, Ohio
June, 2008	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France
July 2008	Visiting Faculty at the Air Force Research Laboratory, Dayton, Ohio
June, 2009	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France
July, 2009	Invited Professor, Materials Laboratory, University of Bordeaux, France
June, 2010	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France
July-Sept, 2010	Invited by the Humboldt Foundation of Germany to conduct collaborative research at the University of Leipzig and University of Applied Science, Frankfurt, Germany as the Senior US Scientist.
Oct 2010-Jan 2011	Invited Professor, Graduate School of Frontier Sciences, University of Tokyo, Japan
June and July, 2011	Invited Professor, Graduate School of Frontier Sciences, University of Tokyo, Japan
May 15- Aug 12, 2012	Invited Professor, Technical University of Valencia (UPV), Spain
Dec 17, ’12 – Feb 16, ’13	Invited Professor, University of Tokyo and Tokyo Institute of Technology, Japan
April 17 – Aug 16, 2013	Invited Professor, Korea Advanced Institute of Science & Technology (KAIST), South Korea
June 1 – July 13, 2014	Invited Professor, AGH University of Science and Technology, Krakow, Poland
July 14 – Aug 17, 2014	Invited Professor, Centre for Mechanics of Machines; Institute of Fluid Flow Machinery; Polish Academy of Sciences, Gdansk, Poland
Jan 29 – Feb 28, 2015	Invited Professor, SATIE Laboratory, Electrical Engr. Dept., ENS Cachan, France
April 19 – July 19, 2015	Invited Professor to 5 universities in China – Hohai University, Nanjing (April 19 – May 27); Harbin Institute of Technology (May 27 – June 3); Jilin University, Changchun (June 3 – 10); Xiamen University (June 10 to July 5); Sichuan Univ, Chengdu (July 5-19)
Dec 21, ’15 – Feb 20, ’16	Satish Dhawan Chair Professor (Invited Honorary Chair Professorship), Indian Institute of Science, Bangalore, India
March 5 – Aug 15, 2016	Invited Professor at Jilin University, Changchun, China
Jan. 26 – Feb. 24, 2017	Invited Professor at Nanyang Institute of Technology, Singapore
May 1 – June 30, 2017	Invited Professor at Jilin University, Changchun, China
July 1 – July 15, 2017	Invited Professor at Sichuan University, Chengdu

July 20 - Oct 20, 2017	Invited by the Humboldt Foundation of Germany to conduct collaborative research at the Fraunhofer Institute (in Dresden and Berlin) for 1 month and University of Applied Science, Frankfurt, Germany for 2 months as the Senior US Scientist.
Oct 21- Nov 5, 2017	Invited by Technical University of Valencia (UPV), Spain
Nov 6,'17 – Jan 6,'18	Invited by University of Naples, Italy

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EDITOR OF CONFERENCE AND SYMPOSIUM PROCEEDINGS:

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INVITED PLENARY AND KEYNOTE TALKS:

Invited Plenary talk at the IMECE (International Mechanical Engineering Congress and Exposition), Phoenix, Arizona, USA, Nov. 16, 2016

Invited Plenary talk at the ASNT Research Symposium in Anaheim, California, USA, March 18, 2015

Invited Plenary Talk delivered on August 28, 2014 at the KSNT (Korean Society for Nondestructive Testing) 20th Anniversary Workshop of the Ultrasonic Division in Busan, South Korea, August 28-29, 2014; Invited by the Conference Chair Prof. Younho Cho.

Invited Plenary Talk "Ultrasonic and Electromagnetic Waves for NDE and SHM – Experiment and Modeling", delivered on March 12, 2013 at the SPIE's 2013 Annual International Symposium on Smart Structures and Nondestructive Evaluation, San Diego, California, March 10-14, 2013.

Kundu, T. "Guided Waves for Nondestructive Testing – Experiment and Analysis", one of 7 **Invited talks** in the International Symposium on Nondestructive Testing of Materials and Structures, NDTMS, Istanbul, Turkey, May 16-18, 2011. The paper was published in Rilem Bookseries, Vol. 6, Nondestructive Testing of Materials and Structures, Eds. O. Buyukozturk, M. A. Tasdemir, O. Guenes and Y. Akkaya, pp. 567-576, published in 2013.

Kundu, T. , "Ultrasonic Guided Wave for Structural Health Monitoring", **Invited Plenary Talk** in SMART'09, Smart Structures and Materials, IV Eccomas Thematic Conference, Porto, Portugal, July 13-15, 2009, Paper published in the conference proceedings, Eds. A. Cunha and J. Dias Rodrigues, pp. 281-290, 2009.

Kundu, T., **Invited Keynote Talk** on Structural Health Monitoring at the 2nd CANEUS (Canadian, European and US Research Consortium) Fly-by-Wireless Workshop (http://www.caneus.org/fbw/program.aspx) in Montreal, Canada, June 8-12, 2009. Invited by Dr. Milind Pimprikar, founder of CANEUS

Kundu, T. **Invited Keynote Talk** "Theoretical and Experimental Investigations on Ultrasonic Guided Waves for Structural Health Monitoring Applications", presented at the 150-Year Anniversary Conference at Bengal Engineering and Science University, Shibpur, West Bengal, India, Jan. 11-14, 2007. The paper by T. Kundu and S. Banerjee was published in Proc. of the International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges (CENeM-2007), Vol. 1, pp. 289-308, 2008.

Kundu, T., "Importance of Mesh-Free Modeling for Ultrasonic Nondestructive Evaluation of Structures", (**Invited Keynote Talk**)" at the 4th International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2007), IIT Kharagpur, India, Dec. 27-29, 2007; paper published in the conference proceedings, Eds. S. K. Bhattacharya, D. K. Maiti and B. N. Singh, Pub. Aerospace Engineering Department, IIT Kharagpur, 2007

Kundu, T., S. Banerjee, S. Das and C. M. Dao, "Recent Developments in Theoretical and Experimental Investigations with Ultrasonic Sensors", **Invited Talk** (invited by Prof. William Spencer**),** paper published in the Proceedings of the World Forum on Smart Materials and Smart Structures Technology SMSST'07, Chongqing and Nanjing, China, May 22-27, 2007.

Kundu. T., **Invited Talk**, at the US-Japan Workshop on advanced integrated sensor technologies for safe and secure societies and better quality of life, (invited by Prof. M. Tomizuka), Tokyo, Japan, July 21-23, 2007.

Kundu, T. and S. Banerjee, "Elastic Wave Propagation Modeling by DPSM", **Invited Talk,** International Symposium on Mechanical Waves in Solids (ISOMWS06), (invited by Prof. J. D. Achenbach), Hangzhou, China, May 15-18, 2006.

Kundu, T., "Ultrasonic Guided Waves for Structural Health Monitoring", **Invited Keynote Talk** delivered in the Third International Conference on Theoretical, Applied, Computational and Experimental Mechanics, (ICTACEM), Dec.28-30, Kharagpur, India, Proceedings published in a CD, 2004.

Recent Invited seminar presentations (since 2010) at different universities in USA and abroad (full or partial travel expenses for these talks were covered by the inviting institutes):

Domestic Invitations:

May 1, 2014 – State University of New York at Buffalo (Department of Civil, Structural and Environmental Engineering, invited by Prof. Salvatore Salamone)
April 2012 – Northwestern University (Mechanical Engineering Department, invited by Prof. Jan Achenbach)
April 2010 – University of Pittsburgh (Civil Engineering Department, invited by Prof. Piero Rizzo)

International Invitations:

June 27, 2016 – Beihua University, Jilin, China
May 21, 2016 – Tongliao University, Tongliao, China
March 4, 2015 – Imperial College, London, United Kingdom (Mechanical Engineering Department, invited by Prof. P. Cawley and Prof. M. Lowe)
January 26, 2014 – Indian Institute of Science, Bangalore, India (Center of Nano-Science and Engineering, invited by Center Director Prof. R. Pratap)
August 9, 2013 - Hanyang University, Seoul South Korea (Mechanical Engineering Department, invited by Prof. K. Y. Jhang)
July 26, 2013 – Engineering Institute of Korea, Cho Bun National University, Jeonju, South Korea (Aerospace and Mechanical Engineering Department, invited by Prof. J. R. Lee)
July 22, 2013 – Hong Kong Polytechnic University (Mechanical Engineering Department, invited by Prof. Z. Su)
June 12, 2013 – UNIST (Ulsan National Institute of Science and Technology, South Korea, Department of Civil Engineering, invited by Prof. Chung Bang Yun)
June 11, 2013 – Busan National University, South Korea (invited by Prof. Younho Cho, Head of the Mechanical System Design Department)
May 31, 2013 – Pukyoung National University, South Korea (Ocean Engineering Department, invited by Prof. W. B. Na)
Jan 21, 2013 – Ehime University, Matsuyama, Japan (invited by Prof. Kazuyuki Nakahata)
June 2012 – INSA, Lyon, France (invited by Prof. Goran Pavic)
July 2011 – University of Kyoto (invited by Prof. Shiro Biwa)
July 2011 – Tokyo Institute of Technology (invited by Prof. Kentaro Nakamura)

CONFERENCE PRESENTATION WITH PUBLISHED ABSTRACTS:

1. Kundu, T., E. K. Rahani and T. Hajzargarbashi, "Distributed point source method and its applications in solving acoustic wave scattering problems", The Journal of the Acoustical Society of America, 162nd Meeting of the Acoustical Society of America, San Diego, Oct. 31- Nov. 4, 2011, p. 2436, Vol. 130(4), 2011.
2. Wada, Y., T. Kundu and K. Nakamura, "Distributed point source method (DPSM) for modelling guided wave propagation in viscous fluid layer trapped between two solid plates", The Journal of the Acoustical Society of America, 164th Meeting of the Acoustical Society of America, Kansas City, Oct 22-26, 2012, p. 1963, Vol. 132(3), 2012.
3. Eiras, J. N., T. Kundu, , J. S. Popovics, J. Monzo and J. Paya"Monitoring material nonlinearity and attenuation variations in mortar subjected to freezing-thawing cycles", Journal of the Acoustical Society of America, 166th Meeting Acoustical Society of America, San Francisco, Dec. 2-6, 2013, p. 4104, Vol. 134(5), 2013.
4. Liu, P., H. Sohn and T. Kundu, "Noncontact fatigue crack detection using nonlinear wave modulation spectroscopy", Journal of the Acoustical Society of America, 166th Meeting Acoustical Society of America, San Francisco, Dec. 2-6, 2013, p. 4105, Vol. 134(5), 2013.

INVITED SCIENTIFIC ARTICLE IN MAGAZINE:

Banerjee, S. and T. Kundu, "Modeling of Ultrasonic Wave Scattering by Internal Anomalies for NDE/SHM Application", Column – Industrial Sensing and Measurement, SPIE News Room, Optical Engineering Magazine, DOI: 10.1117/2.1200708.0834, 2007.

PATENT

1. Worldwide patent publication number (WO 2004/044790 A1, published in 2004), "Method of evaluating a physical quantity representative of an interaction between a wave and an obstacle", D. Placko, N. Liebeaux and T. Kundu ; US Patent awarded on July 22, 2008, US Patent #7403879 B2; French Patent Application Number BF 02 14108, "Procédé pour évaluer une grandeur physique representative d'uneinteraction entre une onde et un obstacle", November 8, 2002, institutes involved, CNRS, ENS Cachan and University of Arizona.

Patent details in French: Inventeurs: D.PLACKO, N.LIEBEAUX, T.KUNDU, Titre: "Procédé pour évaluer une grandeur physique representative d'une interaction entre une onde et un obstacle". Demande de dépôt de Brevet N° 02 14108 ENS Cachan/CNRS/Université d'Arizona, déposée le 8 novembre 2002. Extension PCT (tous pays) déposée le 10 novembre 2003. http://patentscope.wipo.int/search/en/WO2004044790

2. Worldwide patent publication number (WO 2007/071735 A1, published in 2007), "Universal method for modeling interactions between at least one wave and at least one object", D.Placko, N.Liebeaux, A.Crau and T. Kundu, Institutes involved ENS Cachan, CNRS and University of Arizona.
http://patentscope.wipo.int/search/en/WO2007071735

Awarded French Patent - Inventeurs: D.Placko, N.Liebeaux, A.Crau and T. Kundu, Titre: "Procédé universel de modelisation des interactions entre au moins une onde et au moins un objet, la surface de chaque objet definissant une interface entre au moins deux milieux". Demande de dépôt de Brevet N° 05/13219 ENS, N° de publication : 2 895 544 Cachan/ CNRS/ Université d'Arizona, déposée le 23 décembre 2005, Date de la mise a disposition du public du brevet d'invention : 19 septembre 2008

RESEARCH GRANT AWARDS
(For joint Projects names of co-investigators are given in parenthesis after the title):

Agency:	Association of Universities for Research in Astronomy, Incorporated/ National Optical Astronomy Observatories (NOAO) /
Amount:	$110,496 Period: 4/1/2015 - 12/31/2015,
Title:	Mechanical/Thermal Analysis and Simulation of Telescope Optical Systems (Joint Project, C. Chan (17%), T. Kundu (43%) & S. Missoum(40%))
Agency:	Association of Universities for Research in Astronomy, Incorporated/ National Optical Astronomy Observatories (NOAO)
Amount:	$8,819 Period: 1/1/2015 - 6/30/2015,
Title:	Numerical Simulation and Validation for Optical Systems
Agency:	Air Force Research Laboratory through AOARD office
Amount:	$70,000 Period: 2/18/2011 - 08/17/2012,
Title:	A Fundamental Study of Heat Transfer Phenomenon in Periodic Structures
Agency:	National Science Foundation (CMMI 1044018)
Amount:	$10,000 Period: 8/1/2010 - 7/31/2013
Title:	Travel Grant to Japan for Planning and Initiating Cooperative Research on Detection of Barely Visible Impact Damage in Composite Laminate Panels
Agency:	NIST (through Acellent Technologies)
Amount:	$150,000 Period: 2/1/2009 - 8/31/2012
Title:	Development of SCANS for Advanced Health Management of Civil Infrastructures – my

responsibility was the wave field modeling to simulate scattering of ultrasonic waves by defects in structures with complex geometry.

Agency: Air Force Office of Scientific Research
Amount: $459,489 Period: 6/1/2008 - 11/30/2012, Award #FA9550-(08-1-0318, 09-1-0204)
Title: Modeling of Ultrasonic and Terahertz Radiations in Defective Tiles for Condition Monitoring of Thermal Protection Systems

Agency: Air Force Office of Scientific Research (through Nextgen Aeronautics)
Amount: $33,999 Period: 5/2009 - 2/28/2010
Title: Real-time In-situ Impact and Damage Locator in Anisotropic Aerospace Structures

Agency: Air Force Research Laboratory through UTC
Amount: $50,000 Period: 9/1/2008 - 12/31/2009, Contract #08-S508-009-25-C1, F33615-03-D-5204
Title: Electromagnetic and Ultrasonic Radiation Modeling with Emphasis on THz Ray and Material Interaction

Agency: Air Force Research Laboratory, Dayton OH & Center for Nondestructive Evaluation, Ames, Iowa
Amount : $200,000 Period: 6/1/2005 - 5/31/2009, Contract # 4212593
Title: Ultrasonic Technique for Structural Health Monitoring – Experimental and Analytical Investigation

Agency: National Science Foundation (OISE-0352680)
Amount: $28,780, Period: 4/1/2004 - 3/31/2010
Title: US-India Cooperative Research: Health Monitoring and Retrofitting of Infrastructure

Agency: National Science Foundation (CMS-9901221,CMMI-0226466, 0443494, 0530991, 0631224)
Amount: $340,335, Period: 10/1/99 - 9/30/08
Title: Development of Non-Contact Sensors for Pipe Inspection by Lamb Wave.

Agency: National Science Foundation (CMMI-0434248)
Amount: $37,010, Period: 9/15/04 - 9/14/05
Title: Joint U.S. India Workshop on Advanced Sensing Systems and Smart Structures Technologies (Joint Project, P.I. M. P. Singh of Virginia Tech. & Co-P.I.: T. Kundu)

Agency: National Optical Astronomy Observatories (NOAO)(FRS #340740)
Amount: $15,550, Period: 8/2/04 - 1/2/05
Title: Static and Dynamic Analysis due to Gravity and Wind Load for the Advanced Technology Solar Telescope.

Agency: National Optical Astronomy Observatories (NOAO) (FRS #4177800)
Amount: $25,912, Period: 7/18/03 - 5/31/04
Title: Static and Dynamic Analysis due to Gravity and Wind Load for the Advanced Technology Solar Telescope and the Giant Segmented Mirror.

Agency: Alexander von Humboldt Foundation of Germany (Senior Scientist Research Prize)
Amount : $75,000, Period: 6/1/03 - 7/31/04
Title: Ultrasonic/Acoustic Microscopical Analysis of Multi-Layered Biological Cells

Agency: National Science Foundation (INT-9912549)

Amount: $16,875, Period: 7/15//00 - 12/31/02
Title: US-France-Sweden Cooperative Research: Ultrasonic Sensors Design, Fabrication and Testing.

Agency: National Science Foundation (CMS-9800345)
Amount: $149,986, Period: 7/98 - 12/02
Title: Ultrasonic Evaluation of Delamination Defects at FRP/Concrete Interface.
(Joint Project, Co-P.I.s: T. Kundu & M. Ehsani)

Agency: National Science Foundation, Sandia Lab, Boeing Electronic and Hughes Missile Systems
Amount: $435K(NSF- 290K, Sandia - 45K, Boeing – 60K, Hughes-40K), Period: 9/98 - 8/01
Title: Testing and Constitutive Modeling for Design and Reliability in Electronic Packaging.
(Joint Project, Co-P.I.s: C. S. Desai, T. Kundu, J. L. Prince & M. Rassaian)

Agency: Transportation Research Board
Amount: $67,602, Period: 8/98 - 7/99
Title: A Novel Approach for Prediction of Remaining Life of Concrete Bridge Structures
(Joint Project, Co-P.I.s: C. S. Desai & T. Kundu)

Agency: National Science Foundation (CMS-9523349 & 9896182) and
Electric Power Research Institute (W08031-14 & EP-P241/C110)
Amount: $267K(NSF- 152K, EPRI - 115K), Period: 9/95 - 12/00
Title: Lamb Wave Sensors for Inspecting Civil Infrastructures.

Agency: National Science Foundation (CMS-9622403)
Amount: $90,000 (includes $10,000 REU support), Period: 9/96 - 8/98
Title: Non-Destructive Evaluation of Structures Retrofitted with Fiber Composites.
(Joint Project, Co-P.I.s: T. Kundu & M. Ehsani)

Agency: North Atlantic Treaty Organization (NATO, HTECH.LG931353)
Amount: 1,189,000 Belgian Francs (US $35,873) & Univ. of Az $1,000, Period: 1/94 - 1/96
Title: Imaging and Property Determination of 3-D Objects by Acoustic Microscopy

Agency: National Science Foundation
Amount: $109,000 (Univ. of Az Matching Fund $33,000), Period: 8/93 - 6/95
Title: Acoustic Microscopy for Detecting Kissing and Slip Bonded Interfaces.

Agency: National Science Foundation
Amount: $400,000, Period: 9/93 - 8/96
Title: Unified Constitutive Modelling, Testing and Computer Design for Semiconductor Devices with Emphasis on Interface Behavior (Joint Project, P.I.: C. S. Desai, Co-P.I.s: T. Kundu and J. Prince)

Agency: MER Corporation, Tucson
Amount: $5,800, Period: 2/93 - 2/95.
Title: Stress Analysis at the Metal-Carbon Composite Interface

Agency: National Research Council of National Academy of Sciences
Amount: $11,100, Period: 10/93 - 6/94
Title: The Application of the Acoustic Microscopy Methods for Characterization of Subsurface Defects.

Agency: Air Force Office of Scientific Research
Amount: $20,000, Period: 1/93 - 12/93,

Title: Detection of Internal Defects in Multilayered Plates by Lamb Wave Acousutic Microscopy.

Agency: Universal Technology
Amount: $10,000 (equipment), Period: 6/92 - 12/92,
Title: Ultrasonic Transducer Characterization for Nondestr. Testings.

Agency: National Science Foundation
Amount: $182,826, Period: 9/91 - 2/94,
Title: Constitutive Modelling of Mechanical Response of Materials in Semiconductor Devices with Emphasis on Interface Behavior (Joint Project, P.I.: C. S. Desai, Co-Investigator: T. Kundu and J. Prince)

Agency: National Science Foundation and University of Arizona
Amount: $99,000 (Univ of Az: $20,000), Period: 9/88 - 2/91, DMC-8807661
Title: Acoustic Actuators for Quality Control in Manufacturing (Joint Project, P.I.: T. Kundu, Co-Investigator: A. Mahalanobis)

Agency: National Science Foundation
Amount: $59,138, Period 6/85 - 12/87, MSM-8502120
Title: Computation of the Dynamic Stress Intensity Factor of an Interfacial Finite Crack in a Plate.

Agency: National Science Foundation
Amount: $170,257, Period: 9/87 - 2/90, CES-8711764
Title: Constitutive Modelling of the Dynamic Anisotropic Response of Soils (Joint Project, P.I.: C.S. Desai, Co-Investigator: T. Kundu)

Agency: Alexander von Humboldt Foundation, Germany
Amount: $50,000 (A fellowship to T. Kundu for his stay in Germany), Period: 9/89 - 8/90 & 6/96 - 3/97.
Title: Study of Cell Metabolic Response by its Acoustic Signature

Agency: University of Arizona (Small Grants Program)
Amount: $5000, Period: 1/89 - 12/89
Title: Acoustic Microscopy for Crack Detection in Materials

Agency: University of Arizona (International Project Development Fund)
Amount: $2000, Period: 7/89 - 6/90
Title: An International Collaboration on Acoustic Microscopy

Agency: Air Force Office of Scientific Research
Amount: $18,000, Period: 8/87 - 6/88
Title: Measurement of Damage and Modelling of Behavior of Joints (Joint Project, P.I.: C.S. Desai, Co-Investigator: T. Kundu)

Agency: Intel Corporation, California
Amount: Equipment Grant for an Intel System 310
Title: Computer Simulation of the Dynamic Response of a Structure during an Earthquake.

GRADUATE STUDENT ADVISING:

Ph.D. STUDENTS

Novonil Sen (current) – Research topic – Acoustic source localization

Samaneh Fooladi (current) – Research topic – Wave propagation modeling in anisotropic solids using DPSM

Thomas Cole Branch (current) – Dissertation – Synthesized confocal ultrasonic imaging by digital time reversal in combination with correlation by digitally phased multiple single point generation and detection

Mohammad Hadi Hafezi (2017) – Dissertation – Peridynamic modeling and extending the concept to peri-ultrasound modeling.

Won-Hyun Park (2016) – Dissertation – Acoustic source localization in an anisotropic plate without knowing its material properties

Umar Amjad (2014) – Dissertation – Multi-component structural health assessment using guided acoustic waves

Ehsan Mahmoudabadi (2014) – Dissertation – Nondestructive evaluation of plain and polymer concrete (Co-Advisor – Dr. H. Saadatmanesh).

Susheel Kumar Yadav (2013) – Dissertation – Damage detection and characterization in plate like structures

Ehsan Kabiri Rahani (2011) – Dissertation – Modeling of Ultrasonic and Terahertz Radiations in Defective Tiles for Condition Monitoring of Thermal Protection Systems. After his graduation he joined Brown University as a Postdoctoral researcher and then moved to University of Pennsylvania.

Talieh Hajzargarbashi (2011) – Dissertation – Ultrasonic Non-Destructive Evaluation: Impact Point Prediction and Simulation of Ultrasonic Fields.

Amit Shelke (2011) – Dissertation – Damage Detection in Solid Structures by Ultrasonic Techniques – Analytical and Experimental Investigations. After graduation he moved to the Frankfurt University of Applied Science in Germany as a Postdoctoral Scientist. Now he is a faculty member of IIT (Indian Institute of Technology), Guwahati.

Tri H. Miller (2010) - Dissertation - Nondestructive Inspection of Corroded Reinforced Concrete.

Tamaki Yanagita (2009) – Dissertation – Mesh-Free Modeling of Ultrasonic Fields Generated by Transducers and Acoustic Microscopes (although Tamaki received her Ph.D. from the University of Arizona she had spent 10 months at ENS Cachan France as a visiting Ph.D. student under Prof. D. Placko who also advised Tamaki).

Samik Das (2008) – Dissertation: Ultrasonic Field Modeling in Non-Planar and Inhomogeneous Structures using Distributed Point Source Method

Cac Minh Dao (2007) – Dissertation: Ultrasonic Wave Propagation on an Inclined Solid Half Space Partially Immersed in a Liquid, (Dr. Dao was the recipient of the Bill Gates Millenium Scholarship, 2000, 2001, 2002).

Sourav Banerjee (2005) - Dissertation: Elastic Wave Propagation in Corrugated Wave Guides. Currently Dr. Banerjee is an Assistant Professor in the Mechanical Engineering Department of the University of South Carolina.

Rais Ahmad (2005) - Dissertation: Wavelet Analysis and Ultrasonic Modeling for Pipe Inspection. (Dr. Ahmad

visited ENS Cachan and carried out collaborative research with Dr. D. Placko of ENS Cachan, France, he joined the University of Connecticut as a Research Assistant Professor and then moved to the California State University at Northridge as a tenure-track Assistant Professor.

Joon-Pyo Lee (2005) – Dissertation: Ultrasonic Transducer Modeling for Acoustic Microscopy and its Application in Biological Material Characterization.

Nasser A. Alnuaimi (2004) - Dissertation: Modeling of Ultrasonic Transducer in Homogeneous and Non-Homogeneous Medium by DPSM. Currently he is the Department Head of the Civil Engineering Department, University of Qatar, Doha, Qatar.

Manu Dube (2004) - Dissertation: Constitutive Modeling of Joining Materials in Electronic Packaging. Currently Dr. Dube is an Assistant Professor at the Yeditepe University in Istanbul, Turkey.

Dongshan Guo (2001) - Dissertation: Pipe inspection by cylindrically guided waves.

Won-Bae Na (2001) - Dissertation: Nondestructive Evaluation of Bar-concrete Interface in Reinforced Concrete Structures (Co-advisor Dr. M. Ehsani). Currently Dr. Na is an Associate Professor of Ocean Engineering Department, Pukyong National University, Busan, South Korea, he also served as the Associate Dean of the College for five years 2006-2010.

Michael Scott Keller (2001) - Dissertation: A Novel Approach to Predict Current Stress-Strain Response of Cement Based Materials (Co-advisor Dr. C. S. Desai).

Zhichao Wang (2001) - Dissertation: Disturbed State Constitutive Modeling and Testing of Solders in Electronic Packaging (Co-advisor Dr. C. S. Desai)

Saeed Towfighi (2001) - Dissertation: Elastic Wave propagation in curved plates and its application in the nondestructive inspection of reinforced concrete pipes (Co-advisor Dr. M. Ehsani).

Liling Chen (2001) - Dissertation: Lamb Wave Propagation in Multi-Layered Pipes.

Triguna Ghosh (1997) - Dissertation: Nondestructive Characterization of Plates with an Emphasis on Civil Infrastructure.

Wang Zhang (1997) - Dissertation: Adaptive Stochastic Finite Element Procedure of Electronic Packaging Problems using Disturbed State Concept (Co-advisor Dr. C. S. Desai)

Mohammad A. Awal (1995) - Dissertation: Low Frequency Acoustic Microscopy for Material Characterization.

Wei Yang (1994) - Dissertation: Interaction of Acoustic Waves and Multi-Layered Composite Plates Immersed in Water.

Cemal Basaran (1994) - Dissertation: Damage Propagation in Interfaces under Thermal and Mechanical Loading. (Currently he is a Professor of the Civil Engineering Department at the State University of New York, Buffalo, Co-advisor with Dr. C. S. Desai).

J. Chia (1994) - Dissertation: Constitutive Modelling of Interfaces under Thermal Cycles. (Co-advisor with Dr. C. S. Desai).

S. V. Jagannath (1991) - Dissertation: Correlation Between Mechanical and Ultrasonic Responses for Anisotropic

Behavior of Soils (Co-advisor with Dr. C.S. Desai).

Celso Romanel (1989) - Dissertation: Soil-Structure Interaction Analysis for Buried Structures
(Currently he is a Professor of the Civil Engineering Department at the Pontifical Catholic University of Rio-de-Janerio, Brazil)

Ravi P. Mathur (1989) - Dissertation: A new Hybrid Method for Three Dimensional Dynamic Soil-Structure Interaction. (Currently Project Manager at Parsons, San Francisco, California)

M. R. Karim (1988) - Dissertation: Transient Response of Laminated Composites with Subsurface Cracks.

Ph.D. students in Foreign Institutes
(For the following Ph.D. students T. Kundu served as the Co-Advisor and co-authored papers published from their Ph.D. dissertation; some of them came to the University of Arizona and spent some time at the NDE laboratory of the University of Arizona to conduct their PhD research)

Tina (current) – Advisor in China : Prof. Zhiwen Cui, College of Physics, Jilin University, Changchun, China

Jinlei Zhao (2017) –Advisor in China: Prof. Tengfei Bao, College of water-conservation and hydro-power, Hohai University, Nanjing (No. 1 Xikang Road, Honai University, Nanjing, China)

Bo Hu (2013) – Dissertation: Study on seismic performances of recycled aggregate concrete structures and damage assessment –Advisor in China: Professor Bingkang Liu, Hefei University of Technology, China. Mr. Hu spent 15 months in T. Kundu's NDE laboratory to carry out his dissertation research.

Wilfred Ngwa (2004) - Dissertation: Soft Matter Acoustics - Principal Advisor: Professor Wolfgang Grill, University of Leipzig, Germany.

Nicolas Liebeaux (2002) - Dissertation: Contribution to electromagnetic sensors modeling. Applications to eddy currents NDE (Contribution à la modélisation de capteurs électromagnétiques. Application au contrôle non destructif par courants de Foucault) - Principal Advisor: Professor Dominique Placko, Ecole Normale Superieure de Cachan, France

M.S. STUDENTS

Hamed Alnuaimi (current)

Grecia A. Falcon (current)

Vivek Venkoban (2017) – Master's Report – Comparative analysis of distributed point source method and finite element method.

Samaneh Fooladi (2016) – Thesis – Numerical implementation of elastodynamic Green's function for anisotropic media

Sonia Sarmiento (2015) – Master's Report – A review of the progression of seismic design from 1991 to 2006

Tadd Brian Johnson (2013) – Master's Report – Structural Dynamics Diagnosis with Considerations of Multiple Forcing Frequencies on Existing Steel Structures

Bradley Stringham (2012) – Master's Report – How X-ray Diffraction Complements Non-Destructive Testing in Structural Health Monitoring for the Determination of Residual Stresses of Structural Members

Shawn Luke (2011) – Master's Report – Advantages of incorporating Fiber Bragg Sensors into a structural health monitoring system for buildings.

Nilesh Korde (2011) – Thesis – Ultrasonic characterization of heat treated materials

Steve Slaby (2011) – Without thesis option.

Ray Huang (2010) – Thesis – Numerical Modeling of Ultrasonic Wave Propagation in Reinforced Concrete.

Eric Bollman (2010) – Master's Report – Structural Health monitoring of vibrating screens using piezoelectric wafer active sensors.

Milos Vasiljevic (2007) – Thesis – Guided Wave Inspection of Pipes using Electromagnetic Acoustic Transducers

Tri Miller (2002) - Thesis - Nondestructive Inspection of Corrosion and Delaminaion at the Concrete-Steel Reinforcement Interface

Joon-Pyo Lee (2001) - Thesis - Ultrasonic Transducer Modeling in Homogeneous and Non-Homogeneous Media. (Dr. Placko of ENS Cachan, France has been involved in this Master thesis research of Mr. Lee and is a co-author of the research paper published from Mr. Lee's MS thesis)

Cac Minh Dao (2000) – Thesis: Characterization of Adhesive Joints by Ultrasonic Lamb Wave and Laser Holography Techniques.

Young-Chul .Jung (1999) - Thesis: Detection of Defects in Concrete using Lamb Waves. Winner of the Best MS Thesis Award at the University of Arizona, (Co-advisor Dr. M. Ehsani)

Dongshan Guo (1998) – Thesis: C-Scan and L-Scan Generated Images of the Concrete/GFRP Composite Interface

Amritendu Maji (1997) - Thesis: Detection of Kissing Bonds by Lamb Waves.

Triguna Ghosh (1995) - Thesis: Material Characterization by Acoustic Microscopes - V(f) and V(z) Curves.

Linlin Xu (1992) - Thesis: Stress Singularities at Crack Corners.

C. V. Cao (1991) - Master's Reprort: Determination of Stress Intensity Factor: J-Integral Method Versus Stiffness Derivative Method.

M. A. Awal (1989) - Thesis: Transient Response of Delamination, Intersecting and Transverse Cracks in Layered Composite Plates

G. Wang (1988) - Thesis: Size Effect on Damage in Progressive Softening Process for Simulated Rock. (Co-advisor with Dr. C.S. Desai)

Rudra Pratap (1987) - Thesis: A New Residual Finite Element Technique for Elastodynamic Problems. Currently he is a Professor at the Indian Institute of Science, Bangalore.

C. Romanel (1987) - Thesis: A Hybrid Finite Element Technique for Soil-Structure Interaction Analysis.

Currently he is a Professor of the Civil Engineering Department at the University of Rio-de-Janerio, Brazil.

Tasnim Hassan (1985) - Thesis: A Numerical Study of the Dynamic Response of Interface Cracks in a Layered Plate. Currently he is a Professor of the Civil Engineering Department at the North Carolina State University.

M.S. students in Foreign Institutes

Tina (2017) – Advisor in China : Prof. Zhiwen Cui, College of Physics, Jilin University, Changchun, China

VISITING RESEARCHERS AND POSTDOCS:

Following scientists came to the University of Arizona to collaborate with T. Kundu.

Dr. O. Lobkis (1993-94, 1 year) - Research Scientist, Russian Academy of Science, Moscow, Russia

Prof. Y.-H. Cha (1993-94, 9 months.) - Prof., Mech. Engr., Cho-Sun Univ., Kwang Ju, South Korea.

Dr. K. Maslov (1994-95, 8 months.) - Research Scientist, Russian Academy of Science, Moscow, Russia

Dr. Demin Wang (1994-95, 1 year) - Professor, Northwestern Polytech. Univ., Xi'an, China.

Dr. Wang Zhichao (1994-95, 1 year) - Jilin University, Changchum, China.

Dr. P. V. Zinin (1995, 1 month) - Research Scientist, Russian Academy of Science, Moscow, Russia

Dr. H. Jang (2001, 6 months and 1995, 1 year) -Professor, Civil Eng., Pukyong National University, Pusan, South Korea

Dr. Bo Hu (2010-11, 15 months) – Civil Engineering Department, Hefei University of Technology, Anhui Province, China

Prof. W. –B. Na (2011-12, 12 months) –Professor (former Associate Dean) of Pukyung National University, Busan, South Korea

Dr. Yuji Wada (2012, 3 months) – Scientist from Tokyo Institute of Technology, Suzukakedai, Japan

Prof. Zhiwen Cui (2013-14, 12 months) – Professor and Head, Department of Acoustics and Microwave Physics, College of Physics, Jilin University, Changchun, China

Prof. Wei He (2016-17, 12 months) – Assistant Professor, Department of Engineering Mechanics, Wuhan University of Technology, Wuhan, China

VISITING INTERNATIONAL PhD STUDENTS:

S. Amir Hoseini Sabzevari (2016-17, 6 months) – Advisor in Iran: Prof. Majid Moavenian in Ferdowsi University of Mashhad, Iran

Shihuai Zhang (2015-16, 6 months) – Advisor in China: Prof. Shunchuan Wu, Civil Engineering Department, University of Science and Technology, Beijing

Jinlei Zhao (2015-16 for 1 year) –Advisor in China: Prof. Tengfei Bao, College of water-conservation and hydro-power, Hohai University, Nanjing (No. 1 Xikang Road, Honai University, Nanjing, China)

Bo Hu (2013) – Dissertation: Study on seismic performances of recycled aggregate concrete structures and damage assessment –Advisor in China: Professor Bingkang Liu, Hefei University of Technology, China. Mr. Hu spent 15 months in T. Kundu's NDE laboratory to carry out his dissertation research.

Mr. Sergio Alejandro Lopez Moreno (2012, 3 months) – Graduate student from Universidad Nacional Autonoma de Mexico

JOURNAL EDITORIAL BOARD:

- Founding Editor-in-Chief, *ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems* (information about the journal is available at journaltool.asme.org) April 2017 to present.
- Founding Editor-in-Chief, Journal of Civil Engineering and Science - from Jan 2012 to April 2017.
- Associate Editor of *Ultrasonics*, Oct 2014 to present
- Associate Editor of the *Journal of the Acoustical Society of America*, July 2012 to April 2017
- Associate Editor of *Structural Health Monitoring: An International Journal*, May 2008 to April 2017
- Associate Editor of the *ASME Journal of Pressure Vessel Technology*, Jan 2006 to 2012
- Advisory Editor of *Structural Longevity Journal*, 2009 to April 2017
- Editorial Board Member of *Positioning* (http://www.scirp.org/journal/pos), 2010 to April 2017
- Editorial Board member of the *International Journal of Antennas and Propagation*, July 2012 to Jan 2014

JOURNAL ADVISORY BOARD:

- International Journal of Geomechanics, 2001-2006.
- International Journal for Numerical and Analytical Methods in Geomechanics, 1998-2001

DIVISION AND TECHNICAL COMMITTEE MEMBERSHIP:

- Division Chair of the ASME NDE (Nondestructive Evaluation) Division, 2003-2005
- Member of the Executive Committee of the ASME NDE Engineering Division, 1997-2009
- Secretary and Vice-Chairman of the ASME NDE Division from 2001 to 2003
- Program Representative for the ASME-NDE Division 1999-2002
- Chairman of the Honors and Awards Committee of ASME NDE Division, 2005-2007
- ASME Applied Mechanics Division, Dynamic Behavior of Materials Committee, 1995-present.
- ASME Materials & Structures Group Representative in 2002 for the IMEC&E (International Mechanical Engineering Congress and Exposition - Materials and Structures Group consisted of four Engineering Divisions Materials, Pressure Vessels and Piping (PVP), Pipeline and NDE Engineering)

SOCIETY MEMBERSHIP

- Fellow of ASA (Acoustical Society of America)
- Fellow of ASCE (American Society of Civil Engineers)
- Fellow of ASME (American Society of Mechanical Engineers)
- Fellow of SPIE (the International Society for Optics and Photonics)
- Fellow of ASNT (American Society of Nondestructive Testing)
- Life Member of AvHAA (Alexander von Humboldt Association of America)

- Member of AAM (American Academy of Mechanics)
- Life Member of IACMAG (International Association for Computer Methods and Advances in Geomechanics)
- Secretary and Member of the Board of Directors of IACMAG: 1990-2006.