Hoon Sohn

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RESEARCH INTERESTS

Structural Health Monitoring & Damage Detection, Non-destructive Testing, Sensing Technologies, Smart Materials & Structures, Laser Ultrasonics, Statistical Pattern Recognition, Probabilistic & Statistical Analysis, Experimental Modal Analysis & Vibration Testing, System Identification, Time Series Analysis, Structural Dynamics, Random Vibrations and Earthquake Engineering.

EDUCATION

1994-1998 **Ph.D.**, Civil and Environmental Eng., Stanford University, CA, USA. GPA: 3.92/4.00.
1992-1994 **M.S.**, Civil Eng., Seoul National Univ., KOREA. GPA: 4.26/4.30, *Cum Laude* graduate.
1988-1992 **B.S.**, Civil Eng., Seoul National Univ., KOREA. GPA: 3.77/4.30, *Magna Cum Laude* graduate.

EMPLOYMENT HISTORY

2013-Present **Director**, ICT Bridge Research Center supported by Ministry of Land, Infrastructure and Transportation, Korea (2013-2018).

2013-2015 **Joint Appointment,** Electrical Eng. Dept, KAIST, Daejeon, Korea.

2012-2013 **Adjunct Professor**, Electrical and Computing Eng. Dept., Michigan State University, MI.

2011-Present **Full Professor** Civil & Environmental Eng. Dept, KAIST, Daejeon, Korea.

2011-2013 **KAIST Chaired Professor**, Civil & Environmental Eng. Dept, KAIST, Daejeon, Korea.

2007-2010 **Associate Professor (tenured)**, Civil & Environmental Eng. Dept, KAIST, Daejeon, Korea.
Joint Appointment, Aerospace Eng. Dept, KAIST, Daejeon, Korea.
Joint Appointment, KAIST Institute of Urban Space and System, Daejeon, Korea.

2011-2012 **Edward E. Curtis Visiting Professor,** School of Civil Engineering, Purdue University, IN.

2007-2010 **Adjunct Professor**, Civil & Environmental Eng. Dept., Carnegie Mellon University, PA.

2007-2013 **Summer Faculty,** Wright Patterson Air Force Base, Air Force Research Lab, Dayton, OH.

2004-2006 **Assistant Professor**, Carnegie Mellon University, Pittsburgh, PA. (Promotion to the Associate Professor was approved except the provost's final approval. The promotion process was terminated due to my transition to KAIST. A formal letter supporting the promotion is available from the CEE department head at CMU upon request.)

1999-2010 **Partner & Chief Scientist**, Los Alamos Dynamics LLC, Los Alamos, NM. (Partner at Los Alamos Dynamics LLC, which specializes in lectures, consulting and customized state-of-the-art solutions for vibration testing and analysis applications.)

2001-2004 **Technical Staff Member**, Los Alamos National Laboratory, Los Alamos, NM.

1999-2001 **Postdoctoral Research Fellow**, Los Alamos National Laboratory, Los Alamos, NM.

1995-1998 **Research Assistant**, Civil and Environmental Eng., Stanford University, CA.

1992-1994 **Research Assistant**, Civil Eng. Dept., Seoul National University, Seoul, Korea.

EDUCATIONAL EXPERIENCES

2012-Present **Lecturer for the International Summer School on Smart Structures, Trento, Italy, (2012, 2014, 2015):** The scope of the school is to provide a basic overview on smart technologies from a structural engineering perspective with special focus on the applications of fiber optics, wireless structural sensors, control devices, NDT evaluation, decision making.

2010-2012 **Host & Coordinator for US NSF Research Experiences for Undergraduates (REU) Program:** This REU program provides undergraduate students with research experiences in an international setting applying advanced technologies to structural engineering challenges. The formal portion of this program consists of four weeks training at the University of South Carolina (Prof. Juan Caicedo), University of Connecticut (Prof. Richard Christenson) and University of Akron (Prof. Gun Jin Yun) in US, and six weeks at KAIST. I was the primary KAIST host for this program.

2008-Present **Program Coordinator for Asia-Pacific Summer School in Smart Structures Technology:** Through a 3 week program of coursework, lectures, labs, and site visits, engineering graduate students learn about smart structures technology in an international setting. The proposed annual year program has a rotating host nation as follows: Korea (2008 & 2013), U.S. (2009 & 2015), Japan (2010), China (2011), India (2012), and Taiwan (2014). Acting as the Korean representative of the program and deliver lectures.

2007-2010 **Primary Contact for Cooperative Research/Education Agreement & Dual-Degree Program with Carnegie Mellon University:** Took a leading role to establish this agreement and acting as the program's primary contact at KAIST.

July 2009 **Short Course Instructor for ANCRiSST Short Course:** Taught a short course on practical health monitoring for infrastructure entitled "Guided wave based damage detection using PZT/wireless sensors," Boston, USA, July 29, 2009.

2001-2010 **Short Course Instructor for "Structural Health Monitoring using Statistical Pattern Recognition" Short Course:** Presented statistical pattern recognition techniques for structural health monitoring applications. This course covered the theory, applications and computerized implementation of these technologies (registration fee: $1900/person). The course was offered at University of Tokyo (2010), University of Maryland, MD (2009), European SHM Workshop, Portugal (2008), Stanford University, CA (2001, 2003, 2005, 2007, 2009), the Boeing Company, MO (2006), European SHM Workshop, Spain (2006), Sandia National Laboratory, NM (2006), Y-12 National Security Complex, TN (2004), NASA Marshall Space Center, AL (2004), Caterpillar Inc., IL (2002), University of California at San Diego, CA (2002).

Oct. 2007 **Tutorial Instructor for "Tutorial on Structural Health Monitoring":** This tutorial is offered as part of the KKCNN Symposium, which is a special symposium organized by KAIST, Kyoto University,

Chulalongkorn University, National Taiwan University and National University of Singapore.

Jan. 31, 2005 — **Invited Guest Lecturer, Basics of Structural Health Monitoring,** IMAC-XXIII Conference, Orlando, Florida.

Oct. 20-30, 2003 — **Invited Guest Lecturer, Pan-American Advanced Study Institute on Damage Prognosis**, Florianopolis, Brazil.

1999-2004 — **Student Mentor and Instructor, Los Alamos national laboratory, NM,** Have mentored 7 new technical staff members and 20 upper undergraduate/graduate level students for 5 years teaching signal processing, statistical & probability analysis, system identification and structural dynamics.

1996-1998 — **Teaching Assistant**, "Structural dynamics" (graduate level course), Stanford university, CA.

1995-1996 — **Teaching Assistant**, "Computer methods in structural engineering" (graduate level course), Stanford university, CA.

COURSE OFFERING

* FCE is the faculty course evaluation score out of 5.

KAIST (All lectures are offered in English at KAIST)
Structural Analysis (CE202), KAIST, 3 unit undergraduate course [Fall 2015, FCE: 4.61, 12 students registered]

Elementary Structural Engineering and Laboratory (CE207), KAIST, 3 unit undergraduate course [Spring 2008, FCE: 4.6, 16 students registered; Fall 2009, FCE: 4.7, 18 students registered; Fall 2010, FCE: 4.7, 17 students registered, Fall 2012, FCE: 4.16, 12 students registered, Fall 2013, FCE: 4.7, 6 students registered, Fall 2014, FCE: 4.50, 8 students registered]

Statistical Pattern Recognition for Structural Health Monitoring (CE580), KAIST, 3 unit graduate course [Fall 2007 FCE: 4.8, 6 students registered; Spring 2010 FCE: 4.7, 10 students registered, Spring 2013 FCE: 4.58, 6 students registered, Spring 2015 FCE: 3.67, 9 students registered]

Introduction to Smart Structure Technologies (CEE520), KAIST, 3 unit graduate course, [Spring 2007, FCE: 4.4, 9 students registered, Spring 2009, FCE: 4.0, 10 students registered, Spring 2011, FCE: 4.81, 9 students registered, Fall, 2014, FCE: 4.06, Spring 2016, FCE: TBD, 9 students registered]

IT in Construction Engineering (CE208), KAIST, 3 unit undergraduate course (co-developed with Profs. Hyun Myung and Hyung Jo Jung) [Fall 2010, FCE: 4.0, 34 students registered, Fall 2011, FCE 3.9, 51 students registered, Fall 2012, FCE: 4.09, 37 students registered].

IT for U-Space (CE553), KIAST, 3 unite graduate course (co-developed with Profs. Hyung Myung, Seung Joo Chang, Hyung Jo Jung, Hwa Soo Yeo and Yun Jin Yun) [Spring 2011, FCE: 3.84, 24 students registered, Spring 2013, FCE: 3.86, 35 students registered]

Random Vibration (CE616), KAIST, 3 unit graduate course [Fall 2008, FCE: 4.3, 8 students registered]

Practice in Structural Engineering: Smart Structures & Labs (CE411), KAIST, 3 unit undergraduate and graduate course [Summer 2007, FCE: 4.5, 28 students registered]

Freshmen (SaeNeaKee) Seminar (HS100), KAIST, 1 unit, introductory seminar for freshmen [Spring 2007, FCE: N/A, 10 students registered]

Purdue (Curtis Visiting Professor at Purdue for 2011-2012)
Introduction to Structural Health Monitoring (CEE597), Purdue, 3 unit graduate course, [Spring 2012, FCE: 4.0/5.0, 12 students registered]

Carnegie Mellon University
Data Acquisition, Sensing and Instrumentation (CEE12-740), CMU, 6 unit graduate course, [Fall 2005, FCE: 3.9, 17 students registered; Fall 2006, FCE: 4.0, 16 students registered]

Advanced Infrastructure System Graduate Seminar Series (CEE12-794), CMU, 0 unit graduate course.

Special Topics – Numerical Methods Using MATLAB (CEE12-659), CMU, 6 unit undergraduate/graduate course: [Fall 2005 FCE: 4.0, 33 students registered; Fall 2006, FCE: 4.2, 18 students registered]

Infrastructure Management (CEE12-750), CMU, 12 unit graduate course [Spring 2005 FCE: 4.1, 21 students registered, Spring 2006 FCE: 4.7, 8 students registered]

STUDENT ADVISING

Postdoctoral Researchers
Chang Kook Oh (2007-2009, KAIST, joined the faculty of Kookmin Univ.), **Seung Hee Park** (2008-2009, KAIST, joined the faculty of Sung Kun Kwan Univ.), **Hyung Woo Park** (2004-2005, KAIST, joined the faculty of Dong-A Univ.), **Jun Hee Kim** (2011-2013, joined the faculty of Dan-Kook Univ.), **Yun-Kyu An** (2013, joined the faculty of Seajong Univ.), **Min-Koo Kim** (2015, jointed the postdoctoral research position at Cambridge University, UK), **Hyung Jin Lim** (2015-Present).

Ph.D. Students
Yijun Yoo (2016-Present)**, Suyoung Yang** (2015-Present**), Nazirah Wahab (**2014-Present**), Qian Wang** (2013-Present, KAIST-HKUST Joint-Degree Program), **Ji Min Kim** (2013-Present), **Peipei Liu** (2012-Present), **Byeongjin Park** (2012-Present), **Kiyoung Kim** (2012-Present), **Truong Thanh Chung (**2011~2013, transferred to AE dept), **Hyung Jin Lim** (2011~2015), **Jin Yeol Yang** (2011~present, CEE, M.S/Ph.D integrated program)**, Hyeon Seok Lee** (2011~2014, Postdoctoral Researcher at KRISS), **Min Koo Kim** (2010-2015, KAIST-HKUSK Joint Degree Program, Postdoctoral Research at Cambridge Univ., UK), **Eui Jae Jin** (2009-2011, KAIST-CMU Dual Degree Program, transferred to CMU), **Yun-Kyu An** (2009-2013, CEE, KAIST, the faculty of Seajong Univ.), **Hyun Jun Park** (2007-2011, co-advised with Prof. C.B. Yun), **Jeong Ryol Shin** (2007-2010, co-advised by Prof. C.B. Yun, work at Korea Railroad Research Institute), **Debaditya Dutta** (2006-2010, CMU, Researcher at Union Pacific Railroad Co.), **Seung Dae Kim** (2005-2006, CMU, transferred to UCSD), **Sang Jun Lee** (2005-2009, CMU, Senior software engineer at Pratt & Whitney), **Seung Bum Kim** (2005-2008, CMU, Researcher at UTRC.)

M.S. Students
Jun Young Jung (2016-Present), **Gun Young Lee** (2016-Present), **Ikgeun Jeon** (2016-Present), **Gunhee Koo** (2015-Present), **Timotius Yonathan Sunarsa** (2015-Present), **Yongtak Kim** (2015-Present), **Seongheum Yoon** (2015-Present), **Jun Lee** (2015-Present), **Jaemook Choi** (2014-Present), **Sangmin Lee** (2014-Present), **Soonkyu Hwang** (2014-Present), **Byung Joo Song** (2014-Present), **Seunghwan Jung** (2013-Present), **Joonwoo Park** (2013-2015, Doalltech), **Suyoung Yang** (2013-2014)**, Nak-Hyun Kim** (2012-2013)**, Ji Min Kim** (2012-2013)**, Byeongjin Park** (2011-2012), **Ho Min Song** (2010-2012, Ph.D. program at UIUC)**, Jin Yeol Yang** (2010-2011), **Hyung Jin Lim** (2009-2011), **Hyeon Seok Lee** (2009-2011), **Min Koo Kim** (2009-2010), **Chul Min Yeum** (2008-2010, Ph.D. program at Purdue), **Yun-Kyu An** (2008-2009), **Chang Gil Lee** (2007-2008), **Abihinav Agrawal** (2007-2008, CMU), **Debaditya Dutta** (2006-2007, CMU), **Akhilesh Gupta** (2006-2007, CMU), **Chi Won In** (2005-2006, CMU), **Seung Jin Lee** (2005, CMU), **Jung Han Bae** (2005, CMU)

Undergraduate Students

Eugene Kim (2016), Dong-Gun Kim (2016)**, Ikgeun Jeon** (2015)**, Seok-jun Ju** (2015)**, Min Seok Shim** (2015)**, Mingyan Luo** (2015, Visiting student from Tongji Univ.)**, Sicheng Wen** (2014, Visiting student from Tongji Univ.), **Byung Joo Song** (2012-2013)**, Suyoung Yang** (2012), **Joonwoo Park** (2012), **Haeyoon Jung** (2011)**, Ji Min Kim** (2011), **Byeong Mo Choi** (2010-2011), **Min Sang Park** (2010-2011), **Byeongjin Park** (2009-2010), **Jin Yeol Yang** (2009), **Young Hwan Seo** (2009), **Hyung Jin Lim** (2008-2009), **Jin Woo Lee** (2008-2009), **Chul Min Yeum** (2007-2008), **Dacia Young** (2005, CMU), **Dena De Iuliis** (2005, CMU), **Kelly E. Cronin** (2005-2006, CMU), **Eric J. Gonzales** (2005-2006, CMU), **Jessica Gibbons** (2005, CMU), **Anand Boscha** (2006-2007, CMU), **Nicholas T. Brown** (2006-Present, CMU)

HONORS & AWARDS

The Best Paper Award (2016): My students, Jaemook Choi, Gunhee Koo and Kiyoung Kim, and I received the best paper award at the Korean Society of Hazard Mitigation, February 19th, for our paper entitled "A Displacement Estimation Method based on Data Fusion of Velocity and Acceleration for Safety Assesement of Structure under Fire"

Excellent Project Award at Hyundai NGV (2015): A project entitled "Development of a noncontact portable facility monitoring system" was selected as the excellent project in 2015 by Hyundai NGV. This project is funded by Korean Agency for Develop Development for 05/01/13-08/31/14, and I was Primary Investigator of this project.

Research Award at KAIST (2015): This award is given to researchers at KAIST who had the most active funded research in that particular year.

The Best Paper Award (2014): Prof. Min-Seok Han, my student, Ji-Min Kim, and I won the best paper award at the 2014 Korea-Japan Microwave Workshop (KJMW2014), JSBC, Suwon, Korea, December 4-5, 2014 based on a paper entitled "Optimization of magnetic resonance wireless power transfer system in concrete structures."

Technology Innovation Excellence Award at KAIST (2010, 2014): This award is given to researchers at KAIST who made new technology developments that had significant impacts to the society.

Most Downloaded Paper in Mechanical Systems and Signal Processing (2014): As of January 2014, my journal paper below is selected as one of the 24 most downloaded papers (1st place: over 15,000 downloads) in "Mechanical Systems and Signal Processing" Journal (impact factor: 1.913). Junhee Kim, Kyuoung Kim, Hoon Sohn " Autonomous dynamic displacement estimation from data fusion of acceleration and intermittent displacement measurements," *Mechanical Systems and Signal Processing*, Vol. 42, pp. 194-205, 2014.

KKNTCNN Outstanding Young Researcher Award (2013): My student Hyeonseok Lee and I received the KKHTCNN Outstanding Young Researcher Award at the 26th KKHTCNN Symposium on Civil Engineering, Singapore, November 18-20, 2013 for our paper entitled "Baseline-free pipeline monitoring using laser-based mechanical impedance measurement".

SPIE Senior member (2013): International Society for Optics and Photonics, Senior member.

Most Cited Paper in Structural Control and Health Monitoring (2013): The journal paper below is selected as one of the 5 most highly cited papers contributing to the 2012 Impact Factor in "Structural Control and Health Monitoring" Journal (impact factor: 1.544). Yun-Kyu An and Hoon Sohn, "Instantaneous crack detection under varying temperature and static loading conditions," *Structural Control and Health Monitoring*, Vol. 17, No. 7, pp. 730-741, 2010.

Most Cited Paper in Smart Materials and Structures (2013): The journal paper below is selected as one of the 20 most highly cited papers published in 2011 in "Smart Materials and Structures" Journal (impact factor:

2.024). H. Sohn, D. Dutta, J.Y. Yang, M.P. DeSimio, S. Olson, E. Swenson, "Automated detection of delamination and disbond from wavefield images obtained using a scanning laser vibrometer," *Smart Materials and Structures*, Vol. 46, pp. 451-467, 2011.

Excellent Government Project Award (2012): A project entitled "Development of Enabling Technologies for Structural Health Monitoring: Korean Aero-Vehicle Structural Health Monitoring System" was selected as one of the excellent government projects in 2012 by National Science and Technology Commission and Korea Institute of Science and Technology Evaluation and Planning. This project is funded by Korean Agency for Develop Development for 06/01/08-05/31/11, and I was one of the co-investigators of this project.

KSCE, Excellent Paper Award (2012): My students, Homin Song, Hyung Jin Lim, and I won the Excellent Paper Award at The 38th Korea Society of Civil Engineers Annual Conference, Gwangju, South Korea, October 24-26, 2012 for our paper entitled "Development of a dual PZT based electromechanical impedance measurement technique for structural health monitoring".

The 100 Most Promising People in Korea (동아일보 "10 년뒤 한국을 빛낼 100 인", 2012): This award is given on the anniversary of Donga Newspaper, which is one of the three largest newspaper companies in Korea, to 100 people with the most promises to improve the Korean society in the next 10 years. The recipients of this award are not limited only to scholars from academia, but also include people from various backgrounds such as politicians, entrepreneurs, artists, musicians and athletics (http://www.donga.com/news/100people/2012/index.html).

Structural Health Monitoring Person of the Year Award at International Workshop on Structural Health Monitoring (2011): This award is selected by the editors and associate editors of Structural Health Monitoring Journal, and given to an individual who has made an outstanding contribution to the field of SHM. This contribution should be in the form of theory, analysis, applications, education, or other ways that support the discipline of SHM and benefit the society. The award is meant to recognize accomplishments within the past year or few years.

Edward M. Curtis Visiting Professorship at Purdue University (2011-2012): This prestigious award has been established to attract internationally renowned visitors to spend an academic year with the faculty and students at Purdue University. This professorship comes with a substantial amount of salary, research and travel funds. I was selected as the first recipient of this prestigious professorship.

KAIST Chaired Professor (2011-2013): I am named as KAIST Chaired Professor. This is the highest honor given to KAIST faculty at their 40's. This professorship comes with a discretionary research fund.

Most Downloaded Paper in Wave Motion (2012): As of February 2012, my journal paper below is selected as one of the 10 most downloaded papers (2nd) in "Wave Motion" Journal (impact factor: 1.379). Chul Min Yeum, Hoon Sohn, Jeong Beom Ihn "Lamb wave mode decomposition using concentric ring and circular PZT Transducers," *Wave Motions*, Vol. 48, pp. 358-370, 2011.

Most Cited Paper in Wave Motion (2011): As of April 2011, my journal paper below is selected as one of the 10 most cited papers (6th) in "Wave Motion" Journal (impact factor: 1.379). Hyun Woo Park, Seung Bum Kim, Hoon Sohn, "Understanding a time reversal process in Lamb wave propagation," *Wave Motions*, Vol. 46, pp. 451-467, 2009.

Most Cited Paper in Structural Health Monitoring Journal (2010): In 2010, my journal paper below is selected as one of the 10 most highly cited papers (2nd) in "Structural Health Monitoring" Journal (impact factor: 2.195). Debaditya Dutta, Hoon Sohn, Kent Harries, Piervincenzo Rizzo, "A nonlinear acoustic technique for crack detection in metallic structures," *International Journal of Structural Health Monitoring*, Vol. 8, No. 3, pp. 251-262, 2009.

National Research Laboratory (NRL) Program Award from National Research Foundation of Korea (2010-2014): This is one of the most honorable awards given to established researchers in Korea. I was the

only Civil Engineer who received this NRL grant in 2010. There were over 750 applications, and less than 7% were awarded the NRL grant in 2010. This award comes with 1,500,000,000 KRW (1,500,000 USD) for 5 years.

Air Force Summer Faculty Fellowship (2007-2012): This competitive fellowship allows the recipient of the award to work at one of the US Air Force branches for an extended time during summer. I worked at the Air Force Research Laboratory in Wright Patterson Air Force Base, Dayton, Ohio, USA for every summer since 2007. All expenses are reimbursed by the US Air Force.

Participation Award (2010): This award is given to individuals who made novel proposals to improve the operational practice at KICTEP (Korea Institute of Construction and Transportation Technology Evaluation and Planning).

Undergraduate Research Program Award (2010): Under my supervision, Byeongjin Park was awarded the Best Paper Award (second place) during the 2010 winter/spring undergraduate research program workshop at KAIST for his project entitled "Development of a laser controlling system for non-contact structural health monitoring".

Top 100 Educators of 2010: Selected as one of the top 100 educators of 2010 by the International Biographical Centre of Cambridge, England.

Marquis Who's Who in the World (2009 & 2010): My biographical profile has been selected for inclusion in the 2009 Edition of Marquis Who's Who in the World.

International Young Scientist selected to attend the "Summer Davos" organized by World Economic Forum (2009): Since 2008, World Economic Forum (WEF) organizes Annual "Summer Davos" and hosts an International Young Scientist Conference in association with InterAcademic Penal on International Issues (IAP). Every year, about 60 young scientists nominated by each country's National Academic around the world and screen by WEF and IAP are invited to attend this event.

Associate Member of the Korean Academy of Science and Technology (2009): The Korean Academy of Science and Technology (KAST) is a non-profit organization which contributes to national development by promoting science and technology through active participation of its members who have demonstrated professional excellence nationally and internationally in science and engineering. Members are elected in recognition of their distinguished achievements in original research, and election to KAST is recognized as one of the highest honors that can accorded a scientist or engineer. (This is similar to National Academy of Sciences in the U.S.)

Young Scientists Award (2008): This Young Scientists Award from Korean Academy of Science and Technology (KAST) honors promising young scientists under the age of 40 with outstanding research achievements in the fields of natural science and engineering. Every year, a nationwide search is conducted, and only four researchers are awarded this prestigious award that comes with the Presidential Citation and the Incentive Research Grant (a total of 150,000,000 won for 5 years). This award is similar to the Presidential Early Career Award from US National Science Foundation (PECASE Award). The announcement was broadcast on TV in Korea and appeared in major Korean newspapers.

The Excellent KOSEF Project (2008): My KOSEF project entitled "the Development of PZT Sensor Networking Technology for Structural Health Evaluation" (05/31/07 to 05/31/10) has been selected as one of the best KOSEF projects (http://rnd.kosef.re.kr/jsp/superioroutcome/search.jsp?where=excellent).

Undergraduate Research Program Award (2008): Under my supervision, Chul Min Yeum was awarded the Best Paper Award (third place) for the winter/spring undergraduate research program at KAIST in 2008 for his project entitled "Application of reference-free damage detection to composite aircraft structures: probabilistic damage localization using embedded piezoelectric sensor network".

The S (Superb) Grade for KOSEF Project (2008): We received the highest annual review grade (S grade) for our KOSEF project entitled "the development of PZT Sensor Networking Technology for Structural Health Evaluation (Funded: 300,000,000 won ($325,000) for 05/31/07 to 05/31/10). This project budget is increased for the subsequent years (15% increase of labor cost).

KAIST Distinguished Service Award (2008): This service award from KAIST annually identifies one faculty member who has done distinguished service for the University. In 2008, I was presented with this award thank to my contribution to the establishment of the dual-degree program between KAIST-Carnegie Mellon University.

The Best Student Paper Award (2007): My student, Seung Bum Kim, and I won the best student paper award at the *International Workshop on Structural Health Monitoring*, Stanford, CA, September 10-13, 2007 through a paper entitled "Instantaneous Crack Detection in Thin Metal Plates and Aircraft Panels". This is the most prestigious and largest workshop for the structural health monitoring community. Each year, over 500 papers are presented and the best papers are selected through several rounds of competitive selection processes.

The Best Student Paper Award (2007): My student, Seung bum Kim, and I won the best student paper award at *World Forum on Smart Materials and Smart Structures Technologies*, Chongqing and Nanjing, China, May 22- 27, 2007 through a paper entitled "Application of an Instantaneous Crack Diagnosis Technique to Thin Metal Plates and Panels". **(First Place).** The initial selection was completed based on the paper review. Then, only a few selected papers are invited to present their work in front of the selection committee.

James D. Cooper Student Paper Award (2006): My students, Seung Dae Kim, Chi Won In, and Kelly Cronin won the 2006 James D. Cooper Student Award (best student paper award) at the 23rd Annual International Bridge Conference, Pittsburgh, PA, June 12-14, 2006 based on our research work on debonding detection on CFRP strengthened RC beams. This is one of the biggest conglomerates for the bridge engineering community.

The Los Alamos Achievement Award (2003): This award is bestowed on an individual for outstanding accomplishments and dedication by Los Alamos Awards Program, Los Alamos National Laboratory on August 25, 2003. Only a single individual is selected for this award each year.

SPIE's Best NDE Paper Award (2003): I won this NDE best paper award based a paper entitled "Utilizing the sequential probability ratio test for building joint monitoring," (co-authored by David W. Allen, Keith Worden and Charles R. Farrar) at *SPIE's 7th Annual International Symposium on NDE for Health Monitoring and Diagnostics,* San Diego, CA, March 17-21, 2002 **(First Place).** This is the biggest and most prominent symposium for the smart sensing and structures community. David W Allen was one of the students that I mentored at Los Alamos National Laboratory.

Director Funded Postdoctoral Fellowship (1999-2001), Los Alamos National Laboratory: This distinguished award provided a unique opportunity to pursue independent research of their own choice. In 1999, about 20 beneficiaries were selected out of 500 candidates from many prestigious schools in the United States and overseas. I was the first recipient of this award from the engineering field, and the only and first foreign national who was selected for this award. This fellowship allows the recipients to conduct independent research for two-years with full financial support from the Director.

Pohang Iron & Steel Corporation (POSCO) Scholarship (1994-1998): This prestigious scholarship was granted by the Pohang Iron & Steel Corporation, Pohang, Korea, which is the second largest steel manufacturing company in the world. This was one of the most prestigious and competitive scholarship available back then. (This scholarship was recently terminated). The selection process consists of three-stages: (1) a written exam for general topics and English, (2) a written exam for the major field, and (3) interview. This scholarship provided the beneficiary with the full tuition and stipend for the four-year graduate study toward doctoral degree at Stanford University. I was the first recipient of this award in the civil and environmental engineering departments.

JOURNAL PUBLICATIONS

* 125 published, 3 accepted, 6 submitted, 6 in preparation.

* The corresponding author is underlined.

In preparation

1. Byeongjin Park, **Hoon Sohn** and Peipei Liu,"Accelerated Noncontact Laser Ultrasonic Scanning for Damage Detection using Combined Binary Search and Compressed Sensing," in preparation for Mechanical Systems and Signal Processing (Impact factor: 2.256).

2. Peipei Liu, Byeongjin Park, Byeongju Song and **Hoon Sohn**,"Noncontact and baseline-free detection of fatigue crack on a steel shaft via air-coupled nonlinear ultrasonic modulation and state space techniques," *in preparation for Mechanical Systems and Signal Processing* (Impact factor: 2.256).

3. Yongtak Kim, Hyung Jin Lim, **Hoon Sohn**, "Fatigue crack growth monitoring in a welding joint using nonlinear ultrasonic wave modulation", *in preparation for International Journal of Fatigue* (IF: 2.275), 2015

4. Soonkyu Hwang, Jinyeol Yang, Yun-Kyu An and **Hoon Sohn**, "Instantaneous delamination imaging of composite structures using a non-contact line laser scanning thermography system," *in preparation for Composites Part B: Engineering* (Impact factor: 2.983)

5. Suyoung Yang, Kiyoung Kim, Peipei Liu, **Hoon Sohn**, "Development of a tunable vibration energy harvester and its application to existing bridge," *in preparation for Smart Materials and Structures* (TBD) (Impact factor: 2.502).

6. Chang Kyu Jeong, Sung Beom Cho, Jae Hyun Han, Geon-Tae Hwang, Dae Yong Park, Kwi-Il Park, **Hoon Sohn**, Jungho Ryu, Suk,Joong L. Kang, Yong-Chae Chung and **Keon Jae Lee**, "Crystallographic control over piezoelectric thin film in morphotropic phase boundary for flexible energy harvestings," *submitted to Science Advances* (Impact factor: TBD)

Submitted

7. Peipei Liu, Hyung Jin Lim, Suyoung Yang, **Hoon Sohn**, Yung Yi, Daewoo Kim, Cheul Hee Lee and In-hwan Bae, "Development of a "stick-and-detect" wireless sensor node for fatigue crack detection," *submitted to Structural Health Monitoring* (Impact factor:2.663).

8. Peipei Liu, Timotius Yonathan Sunarsa, **Hoon Sohn** and Nazirah Ab.Wahab, " Synchronized laser ultrasonic scanning for hidden corrosion detection," *submitted to Smart Materials and Structures* (Impact factor:2.502).

9. Hyung Jin Lim, Yongtak Kim, Gunhee Koo Suyoung Yang **Hoon Sohn**, In-hwan Bae and Jeong-Hwan Jang, "Development and field application of a reference-free fatigue crack detection technique using nonlinear ultrasonic modulation" *submitted to Smart Materials and Structures* (Impact factor: 2.502)

10. Min-Koo Kim, Qian Wang, Joon-Woo Park, Jack C.P. Cheng, Chih-Chen Chang, **Hoon Sohn**, "Application of Cloud-BIM based dimensional assurance technique to full-scale precast concrete elements," *submitted to Automation in Construction, 2015.*

11. Sangmin Lee, Hyung Jin Lim, **Hoon Sohn**, Wonjun yun, Eunha Song, "IWSHM 2015: Autonomous Mobile Lock-in Thermography System for Detecting and Quantifying Voids in LNG Cargo Tank Second Barrier," *submitted to Structural Health Monitoring*, 2015, (Impact factor: 2.663) (Acknowledgement: Hyundai Heavy Industries Inc.).

12. Hyung Jin Lim, **Hoon Sohn**, Yongtak Kim, “Binding conditions for nonlinear ultrasonic generation given localized fatigue crack,” *submitted to Ultrasonics*, 2015, (Impact factor: 1.805) (Acknowledgement: Climate Change Research Hub of Korea Advanced Institute of Science and Technology (N01150138)).

Accepted

13. Qian Wang, **Hoon Sohn**, Jack C. P. Cheng, “Development of a mixed pixel filter for improved dimension estimation using AMCW laser scanner”, *accepted for ISPRS Journal of Photogrammetry and Remote Sensing*, 2016.

14. Jinyeol Yang, Jaemook Choi, Soonkyu Hwang and **Hoon Sohn**, "A reference-free micro defect visualization using pulse laser scanning thermography and image processing" *accepted for Measurement Science and Technology*, 2016, (Impact factor: 1.352) (Acknowledgement: Climate Change Research Hub of Korea Advanced Institute of Science and Technology (N01150138) and Manufacturing Core Technology Team in Global Technology Center of Samsung Electronics Co., Ltd).

15. Qian Wang, Min-Koo Kim, **Hoon Sohn**, Jack C. P. Cheng, “Surface flatness and distortion inspection of precast concrete elements using laser scanning technology”, *accepted for Smart Structures and Systems*, 2016, (Impact factor: 1.368).

Published

16. Qian Wang, Min-Koo Kim, Jack C. P. Cheng, **Hoon Sohn**, “Automated quality assessment of precast concrete elements with geometry irregularities using terrestrial laser scanning”, *Automation in Construction*, Vol.68, pp. 170-182, 2016, (Cited: 0, Impact factor: 1.812)

17. Kiyoung Kim, **Hoon Sohn**, “Dynamic displacement estimation by fusing LDV and LiDAR measurements via smoothing based Kalman filtering," *Mechanical Systems and Signal Processing*, 2016, (Cited: 0, Impact factor: 2.465) (Acknowledgement: NRF-2010-0017456).

18. Kiyoung Kim, **Hoon Sohn**, “Dynamic displacement estimation by fusing biased high-sampling rate acceleration and low-sampling rate displacement measurements using two-stage Kalman estimator,” *Smart Structures and Systems*, Vol. 17(4), pp. 647-667, 2016, (Cited: 0, Impact factor: 5.625) (Acknowledgement: NRF-2010-0017456, 135CIPA01).

19. Peipei Liu, Nazirah Ab.Wahab and **Hoon Sohn**, "Numerical simulation for damage detection using laser-generated ultrasound,” *Ultrasonics,* Vol. 69, pp. 248-258, 2016 (Cited: 0, Impact factor: 1.805) (Acknowledgement: CRIAQ DPHM-501 Project funded by the Québec government, and the EEWS-2 Program).

20. Ji-Min Kim, Min-seok Han, Hyung Jin Lim, Suyoung Yang and **Hoon Sohn**, “Operation of battery-less and wireless sensor using magnetic resonance based wireless power transfer through concrete”, *Smart Structures and Systems*, Vol.17(4), pp. 631-646, 2016, (Cited: 0, Impact factor: 1.368)

21. Hyung Jin Lim, **Hoon Sohn**, “Fatigue crack detection using structural nonlinearity reflected on linear ultrasonic features,” *Journal of applied physics*, 2015, (Cited: 0, Impact factor: 1.805) (Acknowledgement: 13SCIPA01).

22. Byeongjin Park, **Hoon Sohn**, Pawel Malinowski, Wieslaw Ostachowicz, "Delamination localization in wind turbine blades based on adaptive time-of-flight analysis of noncontact laser ultrasonic signals," *Nondestructive Testing and Evaluation*, pp. 1-20, 2016, (Cited: 0, Impact factor: 0.943) (Acknowledgement: KAIST-N01150138).

23. Peipei Liu, **Hoon Sohn**, Suyoung Yang, Tribikram Kundu, “Fatigue crack localization using noncontact laser ultrasonics and state space attractors,” *Journal of the Acoustical Society of America*, Vol. 138, pp. 890-898, 2015, (Cited: 0, Impact factor: 1.650) (Acknowledgement: NRF-2010-0017456 and EEWS-2 Program).

24. Jinyeol Yang, Soonkyu Hwang, Yun-Kyu An, Kyuhang Lee and **Hoon Sohn** “Multi-spot laser lock-in thermography for real-time imaging of cracks in semiconductor chips during a manufacturing process,” *Journal of Materials Processing Technology*, pp. 94-101, 2016, (Cited: 0, Impact factor: 2.236) (Acknowledgement: Climate Change Research Hub of Korea Advanced Institute of Science and Technology (N01150138) and Samsung Electronics Co., Ltd).

25. Yun-Kyu An, Jinyeol Yang, Soonkyu Hwang and **Hoon Sohn** “Line laser lock-in thermography for instantaneous imaging of cracks in semiconductor chips,” *Optics and Lasers in Engineering*, 2015, (Cited: 2, Impact factor: 1.916) (Acknowledgement: NRF-2010-0017456, Samsung Electronics Co., Ltd., and Southeast University-3250254202).

26. Homin Song, Hyung Jin Lim, Sangmin Lee, **Hoon Sohn**, Wonjun Yun, Eunha Song, “Automated detection and quantification of hidden void in Triplex adhesive layers using active lock-in thermography,” *NDT&E International*, 2015, (Cited: 2, Impact factor: 2.225) (Acknowledgement: NRF-2010-0017456, Hyundai Heavy Industries Inc.).

27. Hyung Jin Lim, Byeongju Song, Byeongjin Park, **Hoon Sohn**, “Noncontact fatigue crack visualization using nonlinear ultrasonic modulation,” *NDT&E International*, Vol. 73, pp. 8-14, 2015, (Cited: 2, Impact factor: 2.225) (Acknowledgement: 13SCIPA01).

28. Peipei Liu, Hoon Sohn, Byeongjin Park, “Baseline-free damage visualization using noncontact laser nonlinear ultrasonics and state space geometrical changes,” *Smart Materials and Structures*, Vol. 24, DOI 065036, 2015, (Cited: 1, Impact factor: 2.502) (Acknowledgement: NRF-2010-0017456 and EEWS).

29. Jinyeol Yang, Peipei Liu, Suyoung Yang, Hyeonseok Lee, **Hoon Sohn**, "Laser based impedance measurement for pipe corrosion and bolt-loosening detection," *Special Issue of Smart Structures and Systems on Innovations in Structural Identification and Condition Assessment*, Vol. 15(1), 2015, (Cited: 0, Impact factor: 1.368) (Acknowledgement: NRF-2010-0017456, EEWS-2013-N01130015).

30. Yun-Kyu An, **Hoon Sohn**, “Visualization of non-propagating Lamb wave modes for fatigue crack evaluation,” *Journal of Applied Physics*, Vol. 117(11), 2015, (Cited: 0, Impact factor: 2.183) (Acknowledgement: National Natural Science Foundation of China (51408117) and National Research Foundation of Korea (2010-0017456).

31. Ming Hong, Zhongqing Su, Ye Lu, **Hoon Sohn**, Xinlin Qing, “Locating fatigue damage using nonlinear temporal signal features of nonlinear Lamb waves,” *Mechanical Systems and Signal Processing*, Vol. 60-61, pp. 182-197, 2015, (Cited: 3, Impact factor: 2.256) (Acknowledgement: Hong Kong Research Grants Council via General Research Funds (nos. 523313 and 15214414), National Natural Science Foundation of China (grant no. 51375414),National Research Foundation of Korea (2010-0017456)).

32. Peipei Liu, **Hoon Sohn**, Tribikram Kundu, “Fatigue crack localization using Laser nonlinear wave modulation spectroscopy (LNWMS),” *Journal of The Korean Society for Nondestructive Testing*, Vol. 34(6), pp. 419-427, 2014, (Cited: 1) (Acknowledgement: NRF-2010-0017456, 13SCIPA01).

33. Min-Koo Kim, Jack C.P. Cheng, **Hoon Sohn** and Chih-Chen Chang, “A framework for dimensional and surface quality assessment of precast concrete elements using BIM and 3D laser scanning,” *the Special Issue of Automation in Construction*, 2014, (Cited: 1, Impact factor: 1.812) (Acknowledgement: 13SCIPA01 and KAIST/HKUST Joint Degree Ph.D. Program).

34. MinKoo Kim, **Hoon Sohn**, Chih-Chen Chang, "Localization and quantification of concrete spalling defects using terrestrial laser scanning," *Journal of Computing in Civil Engineering*, Vol. 45, pp. 163-177, 2014, (Cited: 1, Impact factor: 1.268) (Acknowledgement: 13SCIPA01 and KAIST/KHUST Joint Degree Ph.D. Program).

35. Byeongjin Park, Yun-Kyu An and **Hoon Sohn** "Visualization of hidden delamination and debonding in composites through noncontact laser scanning," *Composites Science and Technology*, Vol. 100(21), pp.10-18, 2014, (Cited: 12, Impact factor: 3.569) (Acknowledgement: KETEP-20123030020010, NRF-2010-0017456 and Southeast University (3250254202)).

36. Sungmin Kim, Douglas E. Adams, **Hoon Sohn,** Gustavo Rodriguez-Rivera, Noah Myrent, Ray Bond, Jan Vitek, Scott Carr, Ananth Grama, Janette Jaques Meyer "Crack detection technique for operating wind turbine blades using vibro-acoustic modulation," *Structural Health Monitoring An International Journal*, Vol. 13(6), pp.661-670, 2014, (Cited: 1, Impact factor: 2.663) (Acknowledgement: Division of Computer and Network Systems (CNS) for the National Science Foundation (NSF) (Award Number 1136045)).

37. Yun-Kyu An, Homin Song and **Hoon Sohn** "Wireless ultrasonic wavefield imaging via laser for hidden damage detection inside a steel box-girder bridge," *Smart Materials and Structures,* Vol. 23, DOI 095019, 2014, (Cited: 0, Impact factor: 2.502) (Acknowledgement: NRF-2010-0017456).

38. Hyeonseok Lee, Hyunwoo Park, **Hoon Sohn**, "Pipe Defect Visualization and Quantification Using Longitudinal Ultrasonic Modes," *International Journal of Structural Stability and Dynamics*, Vol. 14(5), 2014, (Cited: 0, Impact factor: 0.764) (Acknowledgement: NRF-2010-0017456, 2012-R1A1A2039044).

39. MinKoo Kim, **Hoon Sohn**, Chih-Chen Chang, "Automated dimensional quality assessment of precast concrete panels using terrestrial laser scanning," *Automation in Construction*, Vol. 45, pp. 163-177, 2014, (Cited: 3, Impact factor: 1.812) (Acknowledgement 13SCIPA01, and KAIST/HKUST Joint Ph.D. Degree Program).

40. Hyeonseok Lee, Hyeongwook Lim, Jung-Wuk Hong and **Hoon Sohn**, "Mechanical Impedance measurement and damage detection using noncontact Laser Ultrasound," *Optics Letters*, Vol.39(11), pp. 3130-3133, 2014, (Cited: 0, Impact factor: 3.292) (Acknowledgement: NRF-2010-0017456).

41. Hyung Jin Lim, **Hoon Sohn**, Peipei Liu "Binding conditions for nonlinear ultrasonic generation unifying wave propagation and vibration," *Applied Physics Letters*, Vol. 104(21), 2014, (Cited: 6, Impact factor: 3.302) (Acknowledgement: CISS-2011-0031870, ICT-13SCIPA01).

42. Yun-Kyu An, Ji Min Kim, **Hoon Sohn**, "Laser lock-in thermography for detection of surface-breaking fatigue cracks on uncoated steel structures," *NDT&E International,* Vol. 65, pp. 54-63, 2014, (Cited: 7, Impact factor: 2.225) (Acknowledgement: NRF-2012-0005630 and MKE-10041918).

43. Peipei Liu, **Hoon Sohn**, Tribikram Kundu and Suyoung Yang, "Noncontact detection of fatigue cracks by laser nonlinear wave modulation spectroscopy (LNWMS)," *NDT&E International*, Vol. 66, pp. 106-116, 2014, (Cited: 9, Impact factor: 2.225) (Acknowledgement: NRF-2010-0017456).

44. Junhee Kim, Kiyoung Kim and **Hoon Sohn**, "Subspace model identification of ultrasonic guided wave propagation in metallic plates," *Smart Materials and Structures*, Vol. 23(3), 2014, (Cited: 0, Impact factor: 2.502) (Acknowledgment: NRF-2010-0017456 and NRF-2012-R1A1A2040126).

45. Junhee Kim, Kiyoung Kim, **Hoon Sohn**, "Autonomous dynamic displacement estimation from data fusion of acceleration and intermittent displacement measurements," *Mechanical Systems and Signal Processing*, Vol. 42(1-2), pp. 194-205, 2014, (Cited: 7, Impact factor: 2.256) (Acknowledgement: NRF-2010-0017456, MEST-

12CCTI-C063754-01).

46. Hyeonseok Lee, **Hoon Sohn**, Suyoung Yang and Jinyeol Yang, “Monitoring of pipelines in nuclear power plants by measuring laser-based mechanical impedance,” *Smart Materials and Structures*, Vol. 23(6), 2014, (Cited: 2, Impact factor: 2.502) (Acknowledgement: NRF-2010-0017456).

47. Hyung Jin Lim, **Hoon Sohn**, Martin P. DeSimio, Kevin Brown, “Reference-free fatigue crack detection using nonlinear ultrasonic modulation under various temperature and loading conditions,” *Mechanical Systems and Signal Processing*, Vol. 45, No. 2, pp. 468-478, 2014, (Cited: 7, Impact factor: 2.256) (Acknowledgement: CISS-2012M3A6A6054195, NRF-2012-0005630, AFRL).

48. Yun-Kyu An, Hyung Jin Lim, Min Koo Kim, Jin Yeol Yang, **Hoon Sohn** and Chang Guen Lee, “Application of local reference-free damage detection techniques to in-situ bridges,” *Journal of Structural Engineering-ASCE*, Vol. 140(3), 2014, (Cited: 2, Impact factor: 1.504) (Acknowledgement: NRF-2010-0017456 and NRF-20100020423).

49. **Hoon Sohn**, Hyung Jin Lim, Martin P. DeSimio, Kevin Brown, Mark Derisso, “Nonlinear ultrasonic wave modulation for online fatigue crack detection,” *Journal of Sound and Vibration*, Vol. 333, No. 5, pp. 1473-1484, 2014, (Cited: 20, Impact factor: 1.183) (Acknowledgement: CISS-2012M3A6A6054195, NRF-2012-0005630, AFRL).

50. Yun-Kyu An, Yangsu Kwon and **Hoon Sohn** “Noncontact laser ultrasonic crack detection for plates with additional structural complexities,” *Structural Health Monitoring An International Journal,* Vol. 12, No. 5-6, 522-538, 2013, (Cited: 4, Impact factor: 2.663) (Acknowledgement: NRF-2012-0005630).

51. Byeongjin Park, **Hoon Sohn**, Chul Min Yeum and Truong Thanh Chung, “Laser ultrasonic imaging and damage detection of a rotating structure,” *Structural Health Monitoring An International Journal*, Vol. 12, No. 5-6, pp. 494-506, 2013, (Cited: 4, Impact factor: 2.663) (Acknowledgement: KETEP-20123030020010 and NRF-2010-0017456).

52. Junhee Kim, Kiyoung Kim, **Hoon Sohn**, "In situ measurement of structural mass, stiffness, and damping using a reaction force actuator and a laser Doppler vibrometer," *Smart Materials and Structures*, Vol. 22, No. 8, 085004, 2013, (Cited: 6, Impact factor: 2.502) (Acknowledegement: (NRF-2012R1A1A2040126 and NRF-2010-0017456).

53. Homin Song, Hyung Jin Lim, **Hoon Sohn**, “Electromechanical impedance measurement from large structures using a dual piezoelectric transducer,” *Journal of Sound and Vibration*, Vol. 332(25), pp. 6580-6595, 2013, (Cited: 5, Impact factor: 1.183) (Acknowledgement: NRF-2010-0017456 and U-City Master and Doctor Course Grant Program of MLTM).

54. Chul Min Yeum, **Hoon Sohn**, Hyung Jin Lim, Jeong Beom Ihn, “Reference-free delamination detection using lamb waves,” *Structural Control and Health Monitoring*, Vol. 21(5), pp. 675-684, 2013, (Cited: 1, Impact factor: 2.133) (Acknowledgement: the Boeing Company, M20703000015-07N0300-01510 and NRF-2009-0083489).

55. Yun-Kyu An, Byeongjin Park and **Hoon Sohn** “Complete noncontact laser ultrasonic imaging for automated crack visualization in a plate,” *Smart Materials & Structures*, Vol. 22(2), 025022, 2013, (Cited: 28, Impact factor: 1.502) (Acknowledgement: NRF-2010-0017456 and NRF-2010-0020423) **Selected as a featured article**.

56. Jinyeol Yang, Hyeonseok Lee, Hyung Jin Lim, Nakhyeon Kim, Hwasoo Yeo, **Hoon Sohn**, “Development of a fiber-guided laser ultrasonic system resilient to high temperature and gamma radiation for nuclear power plant pipe monitoring,” *Measurement Science and Technology,* Vol. 24, DOI-085003, 2013, (Cited: 1, Impact

factor: 1.433), (Acknowledgement: NRF-2010-0020010 and KETEP-2010T100101057).

57. Hyung Jin Lim, **Hoon Sohn**, Chul Min Yeum and Ji Min Kim, "Reference-free damage detection, localization and quantification in Composites," *Journal of the Acoustical Society of America*, Vol. 133, No.6, pp. 3838-3845, 2013, (Cited: 3, Impact factor: 1.503) (Acknowledgement: NRF-2011-0018430 and NRF-2012-0005630).

58. Junhee Kim, Kiyoung Kim, **Hoon Sohn**, "Data-driven physical parameter estimation for lumped mass structures from a single point actuation test," *Journal of Sound and Vibration*, Vol. 332, No. 18, p. 4390-4402, 2013, (Cited: 4, Impact factor: 1.183) (Acknowledgement: NRF-2012R1A1A2040126 and NRF-2010-0017456).

59. Chul Min Yeum, **Hoon Sohn**, Jeong Bum Ihn, Hyung Jin Lim, "Instantaneous delamination detection in a composite using a dual piezoelectric transducer network," *Composite Structures*, Vol. 94(12), pp. 3490-3499, 2012, (Cited: 22, Impact factor: 3.318) (Acknowledgement: the Boing Company, M20703000015-07N0300-01510 and NRF-2009-0083489).

60. Ji Min Kim, Yun-Kyu An and **Hoon Sohn** "Noncontact fatigue crack evaluation using thermoelastic images," *Journal of The Korean Society for Nondestructive Testing*, Vol. 32(6), pp. 686-695, 2012, (Cited: 0) (Acknowledgement: N02120126).

61. Truong Thanh Chung, Soojin Cho, Chung Bang Yun, **Hoon Sohn**, "Finite element model updating of Canton Tower using regularization technique," *Smart Structures and Systems,* Vol. 10, No. 4-5, pp. 459-470, 2012, (Cited: 2, Impact factor: 1.368) (Acknowledgement: NRF-R11-2002-101-03001-0, NRF-2011-0016470).

62. Hyeon Seok Lee, **Hoon Sohn**, "Damage detection for pipeline structures using optic-based active sensing," *Smart Structures and Systems,* Vol. 9. No.5, pp. 461-472, 2012, (Cited: 4, Impact factor: 1.368) (Acknowledgement: M20703000015-07N0300-01510, NRF-2009-0083489 and NRF-2011-0016470).

63. Yun-Kyu An**,** Min Koo Kim, **Hoon Sohn**, "Airplane hot spot monitoring using integrated impedance and guided wave measurements," *Structural Control and Health Monitoring*, Vol. 19, pp. 592-604, 2012, (Cited: 5, Impact factor: 2.133) (Acknowledgement: ADD-UC080019JD, NRF 2010-0017456, NRF 2010-0020423).

64. Hyeon Seok Lee, Jin Yeol Yang, **Hoon Sohn**, "Baseline-free pipeline monitoring using optical fiber guided laser ultrasonics," *Structural Health Monitoring - An International Journal*, Vol. 11. No. 6, pp. 684-695, 2012, (Cited: 11, Impact factor: 2.663) (Acknowledgement: NRF-2011-0016470, NRF2011-0018430 and KEPEP-2010T100101057).

65. Byeongjin Park, **Hoon Sohn**, Martin P. DeSimio, Steven E. Olson, Kevin Brown, Mark Derisso, "Impact localization in complex structures using laser based time reversal," *International Journal of Structural Health Monitoring*, Vol. 11, No. 5, pp. 577-588, 2012, (Cited: 17, Impact factor: 2.663) (Acknowledgement: NRF-2010-0020423 and NRF-2010-0017456, US Air Force Summer Faculty Program).

66. Hyun-Jun Park, **Hoon Sohn**, Chung-Bang Yun, Joseph Chung, Michael Lee, "Wireless guided wave and impedance measurement using laser and piezoelectric transducers," *Smart Materials and Structures*, Vol. 21, 035029, 2012, (Cited: 9, Impact factor: 2.502) (Acknowledgement: M20703000015-07N0300-01510, NRF-2009-0083489, NRF-2010-0017456).

67. Yun-Kyu An and **Hoon Sohn**, "Integrated impedance and guided wave based damage detection" *the Special Issue of Mechanical Systems and Signal Processing (MSSP)*, Vol. 28, pp.50-62, 2012, (Cited: 12, Impact factor: 2.256) (Acknowledgement: ADD-UC080019JD, NRF-2010-0017456, NRF-2010-0020423).

68. Jungeun An, Raphael. T. Haftka, Nam-Ho Kim, Fuh-Gwo Yuan, Byung Man Kwak, **Hoon Sohn**, "Experimental study on identifying cracks of increasing size using ultrasonic excitation," *International Journal of Structural Health Monitoring*, Vol. 11(1), pp. 95-108, 2011, (Cited: 1, Impact factor: 2.663) (Acknowledgement: NASA NNX08AC334 and US Air Force FA9550-07-0018).

69. **Hoon Sohn**, "Reference-free crack detection under varying temperature," Vol. 15. No. 8. pp. 1395-1404, *Journal of the Korean Society of Civil Engineering*, Vol. 15(8), pp. 1395-1404, 2011, (Cited: 9, Impact factor: 0.383) (Acknowledgement: NRF-2010-0020423 and NRF-2010-0017456).

70. Hyung Jin Lim, Min Koo Kim, **Hoon Sohn**, Chan Yik Park, "Impedance based damage detection under varying temperature and loading conditions," Vol. 44, pp.740-750, *NDT & E International*, 2011, (Cited: 20, Impact factor: 2.225) (Acknowledgement: NRF-2010-0017456 and 2010-0020423, ADD-UC080019JD and U-City program (MEST)).

71. Min Koo Kim, Eun Jin Kim, Yun-Kyu An, Hyun Woo Park, **Hoon Sohn**, "Reference-free impedance based crack detection in plates," Vol. 330, pp. 5949-5962, *Journal of Sound and Vibration*, 2011, (Cited: 9, Impact factor: 1.183) (Acknowledgement: MLTM-07-HighTech-A01 and NRF-2009-0083489).

72. **Hoon Sohn**, Debaditya Dutta, Jin Yeol Yang, Hyun Jun Park, Martin P. DeSimio, Steven E. Olson, Eric D. Swenson, "Delamination detection in composites through guided wave field image processing," *Composites Science and Technology*, Vol. 71, pp. 1250-1256, 2011, (Cited: 53, Impact factor: 3.569) (Acknowledgement: NRF-2010-0017456 and NRF-2010-0020423, US Air Force Summer Faculty Program).

73. See Yen Chong, Jung-Ryul Lee, Chang-Yong Yun, **Hoon Sohn**, "Design of copper/carbon-coated fiber Bragg grating acoustic sensor net for integrated health monitoring of nuclear power plant," *Nuclear Engineering and Design*, Vol. 241, No. 5, pp. 1889-1898, 2011, (Cited: 2, Impact factor: 0.952) (Acknowledgement: NRF-2009-0091279).

74. Eun Jin Kim, Min Koo Kim, **Hoon Sohn**, Hyun Woo Park, "Investigating the electro-mechanical signal from collocated piezoelectric wafers for a reference-free damage diagnosis of a plate," *Smart Materials and Structures*, Vol. 20, 065001 (11pp), 2011, (Cited: 5, Impact factor: 2.502) (Acknowledgement: M20703000015-07N0300-01510 and NRF-2010-0017456).

75. **Hoon Sohn,** Debaditya Dutta, Yun-Kyu An, "Temperature independent damage detection in plates using redundant signal measurements," *Journal of Nondestructive Evaluation,* Vol. 30, No.2, pp. 106-116, 2011, (Cited: 7, Impact factor: 1.462) (Acknowledgement: M20703000015-07N0300-01510, 2009-0083489).

76. **Hoon Sohn**, Debaditya Dutta, Jin Yeol. Yang, Martin P. DeSimio, Steven E. Olson, Eric D. Swenson, "Automated detection of delamination and disbond from wavefield images obtained using scanning laser vibrometer," *Smart Materials and Structures*, Vol. 20, No. 4, 045107 (10pp), 2011, (Cited: 48, Impact factor: 2.502) (Acknowledgement: NRF-2010-0017456 and NRF-2010-0020423, US Air Force Summer Faculty Program).

77. Matthew R Hiatt, Annika C Mathiasson, John Okwori, Seungseop Jin, Shen Shang, Gunjin Yun, Juan Caicedo, Richard Christenson, Chungbang Yun and **Hoon Sohn**, "Finite element model updating of a PSC box girder bridge using ambient vibration test," *Advanced Materials Research*, Vol.168-170, pp 2263-2270, 2011, (Cited: 1, Impact factor: 14.829) (Acknowledgement: US National Science Foundation (NSF-0851671, NSF-0851659, and NSF-0851658)).

78. Chul Min Yeum, **Hoon Sohn**, Jeong Beom Ihn "Lamb wave mode decomposition using concentric ring and circular piezoelectric transducers," *Wave Motion*, Vol. 48, pp. 358-370, 2011, (Cited: 14, Impact factor: 1.503) (Acknowledgement: M20703000015-07N0300-01510 and NRF-2009-0083489).

79. Sang Jun Lee, Jennifer E Michael, Thomas Michaels, **Hoon Sohn**, "Piezoelectric transducer diagnostics via linear reciprocity for guided wave structural health monitoring," *AIAA Journal*, Vol. 49, No.3, pp. 621-629, 2011, (Cited: 2, Impact factor: 1.207) (Acknowledgement: M20703000015-07N0300-01510, NRF-2009-0083489, AFOSR-FA9550-08-1-0241, and AFRL- FA8650-09-C-5206).

80. Sang Jun Lee, **Hoon Sohn** "Piezoelectric transducer self-diagnosis under changing environmental and structural conditions," *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control,* Vol.57, No. 9, pp 2017-2027, 2010, (Cited: 6, Impact factor: 1.512) (Acknowledgement: M20703000015-07N0300-01510, 2009-0083489, ADD-UC080019JD).

81. Hyeon Seok Lee, Hyun Jun Park, **Hoon Sohn**, Il-Bum Kwon, "Integrated guided wave generation and sensing using a single laser source," *Measurement Science & Technology*, Vol. 21, No. 10, 105207 (11pp), 2010, (Cited: 7, Impact factor: 1.433) (Acknowledgement: M20703000015-07N0300-01510 and NRF-2009-0083489).

82. Hyung Jin Lim, **Hoon Sohn**, "Quantitative estimation of transmitted and reflected lamb waves at discontinuity," *Journal of the Korean Society for Nondestructive Testing*, Vol.30, No. 4, pp.359-366, 2010, (Cited: 0) (Acknowledgement: NRF-2009-0083489 and NRF-2009-0082789).

83. Seung Bum Kim, Chang Gil Lee, Jung Wuk Hong, Hyun Woo Park, **Hoon Sohn** "Application of an instantaneous crack detection technique to plates with additional complexities," *Journal of Nondestructive Evaluation*, Vol. 29, No. 3, pp. 189-205, 2010, (Cited: 7, Impact factor: 1.462) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and ADD-UC080019JD).

84. Jeon-Ryol Shin, Yun-Kyu An, **Hoon Sohn**, Chung Bang Yun, "Vibration reduction of high-speed rail bridges using train vehicle size adjustment" *Engineering Structures*, Vol. 30, pp. 2839-2849, 2010, (Cited: 9, Impact factor: 1.838) (Acknowledgement: KAIST High-Risk High-Return Program).

85. Hyun Jun Park, **Hoon Sohn**, Chung-Bang Yun, Joseph Chung and Il-Bum Kwon, "A wireless guided wave excitation technique based on laser and optoelectronics," *the Special Issue of Smart Structures and Systems on Wireless Smart Sensing*, Vol. 6, N0. 5-6, pp. 749-765, 2010, (Cited: 5, Impact factor: 1.430) (Acknowledgement: KRF 2007-314-D00032, M20703000015-07N0300-01510 and 2009-0083489).

86. Sang Jun Lee, **Hoon Sohn**, Jung Wook Hong, "Time reversal based piezoelectric transducer self-diagnosis under varying temperature," *Journal of Nondestructive Evaluation,* Vol. 29, No. 2, pp. 75-91, 2010, (Cited: 21, Impact factor: 1.462) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00462).

87. Yun-Kyu An, **Hoon Sohn**, "Instantaneous crack detection under varying temperature and static loading conditions," *Structural Control and Health Monitoring*, Vol. 17(7), pp. 730-741, 2010, (Cited: 23, Impact factor: 2.133) (Acknowledgement: M20703000015-07N0300-01510 and NRF-2009-0083489).

88. Hyun Woo Park, Eun Jin Kim, **Hoon Sohn** and Ki Lyong Lim, "Spectral element formulation for dynamic analysis of a coupled PZT and beam system," *Computers and Structures*, Vol. 88, pp. 567-580, 2010, (Cited: 22, Impact factor: 2.134) (Acknowledgement: M20703000015-07N0300-01510 and KRF-2007-331-00590).

89. **Hoon Sohn**, Sang Jun Lee, "Lamb wave tuning curve calibration for surface-bonded PZT transducers," *Smart Materials and Structures,* Vol. 19, No. 1, 015007 (10pp), 2010, (Cited: 32, Impact factor: 2.502) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and ADD-UC080019JD).

90. Seung Hee Park, Chang Gil Lee, **Hoon Sohn**, "Reference-free crack detection using transfer impedance," *Journal of Sound and Vibration,* Vol.329, No. 12, pp. 2337-2348, 2010, (Cited: 18, Impact factor: 1.183) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and ADD-UC080019JD).

91. Marcello Cammarata, Piervincenzo Rizzo, Debaditya Dutta, **Hoon Sohn**, "Applications of principal component analysis and wavelet analysis to fatigue crack detection in waveguides," *Smart Structures and Systems,* Vol. 6, No. 4. pp. 349-362, 2010, (Cited: 8, Impact factor: 1.368) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00462).

92. Eun Jim Kim, **Hoon Sohn**, Hyun Woo Park "Experimental verification of spectral element analysis for the high-frequency dynamic responses of a beam with a surface bonded piezoelectric transducer," *Transactions of the Korean Society for Noise and Vibration Engineering*, Vol. 19, No. 12, pp. 1347-1355, 2009, (Cited: 0) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and MLTM-07-HighTech-A01).

93. Chang Kook Oh, **Hoon Sohn**, "Statistical novelty detection within the Yeongjong suspension bridge under environmental and operational variations," *Smart Materials and Structures*, Vol. 18, No. 12, 125022 (9pp), 2009, (Cited: 7, Impact factor: 2.502) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and MLTM-07-HighTech-A01).

94. Chang Kook Oh, **Hoon Sohn**, "Damage diagnosis under environmental and operational variations using unsupervised support vector machine," *Journal of Sound and Vibration,* Vol. 325, pp. 224-239, 2009, (Cited: 27, Impact factor: 1.183) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00462).

95. **Hoon Sohn** and Seung Bum Kim, "Development of dual PZT transducers for reference-free crack detection in thin plate structures," *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control,* Vol. 57, No. 1, pp. 229-240, 2009, (Cited: 16, Impact factor: 1.512) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and ADD-UC080019JD).

96. Piervincenzo Rizzo, Marcello Cammarata, Debaditay Dutta, **Hoon Sohn**, Kent Harries, "An unsupervised learning algorithm for fatigue crack detection in waveguides," *Smart Materials and Structures,* Vol. 18, No. 12, pp. 025016 (11pp), 2009, (Cited: 19, Impact factor: 2.502) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00462).

97. Debaditya Dutta, **Hoon Sohn**, Kent Harries, Piervincenzo Rizzo, "A nonlinear acoustic technique for crack detection in metallic structures," *Structural Health Monitoring- International Journal*, Vol. 8, No. 3, pp. 251-262, 2009, (Cited: 29, Impact factor: 2.663) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00462).

98. Hyun Woo Park, Seung Bum Kim, **Hoon Sohn**, "Understanding a time reversal process in lamb wave propagation," *Wave Motion*, Vol. 46, pp. 451-467, 2009, (Cited: 64, Impact factor: 1.503) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2008-331-D00590).

99. Seung Bum Kim, **Hoon Sohn**, "Continuous fatigue crack monitoring without baseline data," *Fatigue and Fracture of Engineering Materials and Structures*, Vol. 31, No. 8, pp 644-659, 2008, (Cited: 7, Impact factor: 1.561) (Acknowledgement: KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00462).

100. **Hoon Sohn**, Seung Dae Kim, Chi Won In, Kelly E. Cronin, Kent Harries, "Debonding monitoring of CFRP strengthened RC beams using active sensing and infrared imaging," *Smart Structures and Systems,* Vol. 4, No. 4, pp 391-406, 2008, (Cited: 3, Impact factor: 1.368) (Acknowledgement: NSF CMS-0529208, KOSEF-M20703000015-07N0300-01510 and KRF-2007-331-D00466).

101. **Hoon Sohn**, Seung Dea Kim, Kent Harries, "Reference-free damage classification based on cluster analysis," *Computer Aided Civil and Infrastructure Engineering*, Vol. 23, pp. 324-338, 2008, (Cited: 20, Impact factor: 4.952) (Acknowledgement: NSF CMS-0529208, PITA and SISTeC).

102. Seung Bum Kim, **Hoon Sohn**, "Instantaneous reference-free crack detection based on polarization characteristics of piezoelectric materials," *Smart Materials and Structures*, Vol. 16, No. 6, pp. 2375-2387, 2007, (Cited: 84, Impact factor: 2.502) (Acknowledgement: KOSEF-M20703000015-07N0300-01510, KRF-2007-331-D00462, D0032, and NSF CMS-0529208).

103. Debaditya Dutta, **Hoon Sohn**, "A baseline-free crack detection using nonlinear acoustics," *International Journal of Steel Structures*, Vol. 7, No. 1, pp. 27-31, 2007, (Cited: 1, Impact factor: 0.505) (Acknowledgement: PITA and SISTeC).

104. Seung Dae Kim, Chi Won In, Kelly E. Cronin, **Hoon Sohn**, Kent Harries, "A reference-free NDT technique for debonding detection in CFRP strengthened RC structures," *ASCE, Journal of Structural Engineering,* Vol. 133, No. 8, pp. 1080-1091, 2007, (Cited: 15, Impact factor: 1.504) (Acknowledgement: NSF CMS-0529208 and PITA).

105. **Hoon Sohn**, Hyun Woo Park, Kincho H. Law, Charles R. Farrar, "Damage detection in composite plates by using an enhanced time reversal method," *ASCE, Journal of Aerospace Engineering,* Vol. 20, No. 3, pp. 141-151, 2007, (Cited: 54, Impact factor: 0.839) (Acknowledgement: Los Alamos National Laboratory No. 75067-001-03 and NSF No. CMS-9988909).

106. **Hoon Sohn**, Hyun Woo Park, Kincho H. Law, Charles R. Farrar, "Combination of a time reversal process and a consecutive outlier analysis for baseline-free damage diagnosis," *Journal of Intelligent Material Systems and Structures*, Vol. 18, No. 4, pp. 335-346, 2007, (Cited: 49, Impact factor: 2.072) (Acknowledge: Department of Energy).

107. Hyun Woo Park, **Hoon Sohn**, Kincho H. Law, Charles R. Farrar, "Time reversal active sensing for health monitoring of a composite plate," *Journal of Sound and Vibration,* Vol. 302, pp. 50-66, 2007, (Cited: 134, Impact factor: 1.183) (Acknowledgement: Los Alamos National Laboratory No. 75067-001-03 and NSF No. CMS-9988909).

108. **Hoon Sohn**, "Effects of environmental and operational variability on structural health monitoring," *a Special Issue of Philosophical Transactions of the Royal Society A on Structural Health Monitoring*, 365, pp. 539-560, 2007, (Cited: 191, Impact factor: 2.147).

109. David Greve, **Hoon Sohn**, Patrick Yue, Irving J. Oppenheim, "An inductively-coupled lamb wave transducer," *IEEE Sensors Journal*, Vol. 7, No. 2, pp. 295-301, 2007, (Cited: 27, Impact factor: 1.762) (Acknowledgement: NSF CMS-0529208 and CMS-0329880).

110. Seung Bum Kim, **Hoon Sohn**, "Baseline-Free Crack Detection in Steel Structures using Lamb Waves and PZT Polarity," *Earthquake Engineering Society of Korea*, Vol. 10, No. 6, pp. 79-91, 2006, (Cited: 0,) (Acknowledgement: NSF CMS-0529208 and PITA).

111. Sang Jun Lee and **Hoon Sohn**, "Active self-sensing scheme development for structural health monitoring," *Smart Materials and Structures,* Vol. 15, No. 6, pp. 1734-1746, 2006, (Cited: 29, Impact factor: 2.502) (Acknowledgement: PITA).

112. Hyun Woo Park, **Hoon Sohn**, "Parameter estimation of the generalized extreme value distribution for structural health monitoring," *Probabilistic Engineering Mechanics,* Vol. 21, No. 4, pp. 366-376, 2006, (Cited : 38, Impact factor: 1.855) (Acknowledgement: Weapon Response Group (ESA-WR) of Los Alamos National Laboratory, Post-doctoral Fellowship Program of the Korea Science & Engineering Foundation (KOSEF)).

113. Gyuhae Park, Amanda L. Cundy, **Hoon Sohn**, Charles R. Farrar, "An outlier analysis framework for impedance-based structural health monitoring," *Journal of Sound and Vibration*, Vol. 286, No. 1, pp. 229-250, 2005, (Cited: 38, Impact factor: 1.183)(Acknowledgement: LDRD-DR).

114. **Hoon Sohn**, David W. Allen, Keith Worden, Charles R. Farrar, "Structural damage classification using extreme value statistics," *ASME Journal of Dynamic Systems, Measurement, and Control*, Vol. 127, No. 1, pp. 125-132, 2005, (Cited: 39, Impact factor: 0.978).

115. Timothy R. Fasel, **Hoon Sohn**, Gyuhae Park, Charles R. Farrar, "Active sensing using impedance-based ARX model and extreme value statistics for damage detection," *Earthquake Engineering and Structural Dynamics*, Vol. 34, No. 7, pp. 763-785, 2005, (Cited: 14, Impact factor: 2.305) (Acknowledgement: Department of Energy 8M05-X1MV-0000-0000).

116. Garnett E. Simmers Jr., Jeffrey Hodgkins, David Mascarenas, Gyuhae Park, **Hoon Sohn**, "Improved piezoelectric self-sensing actuation," *Journal of Intelligent Material Systems and Structures,* Vol. 15, No. 12, pp. 941-953, 2004, (Cited: 25, Impact factor: 1.523) (Acknowledgement: Los Alamos National Laboratory, 2003 Dynamics Summer School).

117. Charles R. Farrar, Francois M. Hemez, Gyuhae Park, Amy N. Robertson, **Hoon Sohn**, Todd Williams, "Developing impact and fatigue damage prognosis solutions for composites," *Journal of Minerals, Metals & Materials Society*, Vol. 56, No. 3, pp. 40-42, 2004, (Cited: 5, Impact factor: 1.757) (Acknowledgement: Air Force Research Laboratory num. F33615-01-D-5801).

118. Jerome P. Lynch, Kincho H. Law, Anne S. Kiremidjian, Ed Carryer, Charles R. Farrar, **Hoon Sohn**, David W. Allen, Brett R. Nadler, Jeannette R. Wait, "Design and performance validation of a wireless sensing unit for structural monitoring applications," *Structural Engineering and Mechanics,* Vol. 17, No. 3-4, pp. 393-408, 2004, (Cited : 66, Impact factor: 0.927) (Acknowledgement: National Science Foundation, Grant Numbers CMS-9988909 and CMS-0121842).

119. **Hoon Sohn**, Amy N. Robertson, Charles R. Farrar, "Holder exponent analysis for discontinuity detection," *Structural Engineering and Mechanics*, Vol. 17, No. 3-4, pp. 409-428, 2004, (Cited : 10, Impact factor: 0.927) (Acknowledgement: LDRD).

120. **Hoon Sohn**, Gyuhae Park, Jeannette R. Wait, Nathan P. Limback, Charles R. Farrar, "Wavelet-based active sensing for delamination detection in composite structures," *Smart Materials and Structures*, Vol. 13, No. 1, pp. 153-160, 2004, (Cited: 142, Impact factor: 2.502)(Acknowledgement: Department of Energy).

121. Charles R. Farrar, Francois Hemez, Gyuhae Park, Amy N. Robertson, **Hoon Sohn**, Todd Williams, "A coupled approach to developing damage prognosis solutions," *Key Engineering Materials*, Vol. 245-246, pp. 289-304, 2003, (Cited: 3, Impact factor: 0.284) (Acknowledgement: Department of Energy).

122. **Hoon Sohn**, "Active sensing based structural health monitoring for flaw detection in composite structures," *Journal of the Korean Society of Civil Engineering*, Vol. 7, No. 6, pp. 637-646, 2003, (Cited: 0, Impact factor: 0.383) (Acknowledgement: Department of Energy).

123. Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, Daniel J. Inman, "Overview of piezoelectric impedance-based health monitoring and path forward," *Shock and Vibration Digest*, Vol. 35, No. 6, pp. 451-463, 2003, (Cited: 492, Impact factor: 0.722) (Acknowledgement: LDRD).

124. Neal A. Tanner, Jeannette R. Wait, Charles R. Farrar, **Hoon Sohn**, "Structural health monitoring using modular wireless sensors," *Journal of Intelligent Materials Systems and Structures,* Vol. 14, No. 1, pp. 43-56, 2003, (Cited: 50, Impact factor: 2.072) (Acknowledgement: Department of Energy).

125. Amy N. Robertson, Charles R. Farrar, **Hoon Sohn**, "Singularity detection for structural health monitoring using holder exponents," *Mechanical Systems and Signal Processing*, Vol. 17, No. 6, pp. 1163-1184, 2003, (Cited : 52, Impact factor: 2.256).

126. **Hoon Sohn**, David W. Allen, Keith Worden, Charles R. Farrar, "Statistical damage classification using sequential probability ratio tests," *An International Journal of Structural Health Monitoring,* Vol. 2, No. 1, pp. 57-74, 2003, (Cited: 56, Impact factor: 2.663).

127. **Hoon Sohn**, Keith Worden, Charles R. Farrar, "Statistical damage classification under changing environmental and operational conditions," *Journal of Intelligent Materials Systems and Structures*, Vol. 13, No. 9, pp. 561-574, 2002, (Cited: 84, Impact factor: 2.072).

128. Keith Worden, **Hoon Sohn**, Charles R. Farrar, "Novelty detection in a changing environment: regression and interpolation approaches," *Journal of Sound and Vibration*, Vol. 258, No. 4, pp. 741-761, 2002, (Cited : 59, Impact factor: 1.183)(Acknowledgement: Los Alamos National Laboratory).

129. John F. Schultze, François M. Hemez, Scott W. Doebling, **Hoon Sohn**, "Application of non-linear system model updating using feature extraction and parameter effects analysis," *Shock and Vibration,* Vol. 8, pp. 325-337, 2001, (Cited: 14, Impact factor: 0.722).

130. **Hoon Sohn**, Charles R. Farrar, Norman F. Hunter, Keith Worden, "Structural health monitoring using statistical pattern recognition techniques," *ASME Journal of Dynamic Systems, Measurement and Control: Special Issue on Identification of Mechanical Systems,* Vol. 123, No. 4, pp. 706-711, 2001, (Cited: 168, Impact factor: 0.978) (Acknowledgement: Los Alamos National Laboratory).

131. **Hoon Sohn**, Charles R. Farrar, "Damage diagnosis using time series analysis of vibration signals," *Smart Materials and Structures*, Vol. 10, No. 3, pp. 446-451, 2001, (Cited: 201, Impact factor: 2.502) (Acknowledgement: Los Alamos National Laboratory).

132. Michael L. Fugate, **Hoon Sohn**, Charles R. Farrar, "Vibration-based damage detection using statistical process control," *Mechanical Systems and Signal Processing,* Vol. 15, No. 4, pp. 707-721, 2001, (Cited: 99, Impact factor: 2.256)(Acknowledgement: CRADA).

133. **Hoon Sohn**, Kincho H. Law, "Damage diagnosis using experimental Ritz vectors," ASCE *Journal of Engineering Mechanics*, Vol. 127, No. 11, pp. 1184-1193, 2001, (Cited: 17, Impact factor: 1.294) (Acknowledgement: NSF No. CMS-95261-2).

134. **Hoon Sohn**, Kincho H. Law, "Extraction of Ritz vectors from vibration test data," *Mechanical Systems and Signal Processing,* Vol. 15, No. 1, pp. 213-226, 2001, (Cited: 10, Impact factor: 2.256) (Acknowledgement: NSF No. CMC-95261-2).

135. **Hoon Sohn**, Jerry J. Czarnecki, Charles R. Farrar, "Structural health monitoring using statistical process control," ASCE *Journal of Structural Engineering*, Vol. 126, No. 11, pp. 1356-1363, 2000, (Cited: 155, Impact factor: 1.504) (Acknowledgement: Department of Energy's Enhanced Surveillance Program).

136. **Hoon Sohn**, Kincho H. Law, "Application of load-dependent Ritz vectors to bayesian probabilistic damage detection," *Probabilistic Engineering Mechanics,* Vol. 15, No. 2, pp. 139-153, 2000, (Cited: 19, Impact factor: 1.855) (Acknowledgement: NSF No. CMS952612).

137. **Hoon Sohn**, Kincho H. Law, "Bayesian probabilistic damage detection of a reinforced concrete bridge column," *Earthquake Engineering and Structural Dynamics,* Vol. 29, No. 8, pp. 1131-1152, 2000, (Cited : 21, Impact factor: 2.305) (Acknowledgement: NSF No. CMS-95261-2).

138. **Hoon Sohn**, Mark Dzwonczyk, Erik G. Straser, Anne S. Kiremidjian, Kincho H. Law, Teresa Meng, "An experimental study of temperature effects on modal parameters of the Alamosa Canyon bridge," *Earthquake Engineering and Structural Dynamics,* Vol. 28, No. 8, pp. 879-897,1999, (Cited: 163, Impact factor: 2.305)

(Acknowledgement: NSF No. CMS-95261-2 and NASA No. NAG2-1065).

139. Phillip J. Cornwell, Charles R. Farrar, Scott W. Doebling, **Hoon Sohn**, "Environmental variability of modal properties," *Experimental Techniques*, Vol. 23, No.6, pp. 45-48, 1999, (Cited: 104, Impact factor: 0.545).

140. **Hoon Sohn**, Kincho H. Law, "A Bayesian probabilistic approach for structure damage detection," *Earthquake Engineering and Structure Dynamics*, Vol. 26, No. 12, pp. 1259-1281, 1997, (Cited: 83, Impact factor: 2.305) (Acknowledgement: NSF No. CMS-95261-2).

141. Hokyoung Kim, Seung Pil Change, **Hoon Sohn**, Jung Il Park, "Aerodynamic analysis of a cable-stayed bridge during construction," *Journal of the Korean Society of Civil Engineering,* Vol. 1, No. 4, pp. 375-378, 1994, (Cited: 0, Impact factor: 0.383).

PATENTS

* 11 US patents (7 granted and 4 pending), 4 International PCT patents (1 granted and 3 pending), and 31 Korean patents (17 granted and 14 pending), 1 CN patent (pending), 1 EU patent (granted).

1. **Hoon Sohn,** Min-Koo Kim, Seongheum Yoon "System and Method for Predicting Collapse of Structural using Throw-type Sensor," Korean Patent (Application # 10-2015-0162177), November 19th, 2015, (Acknowledge: MPSS-소방안전-2015-72).

2. **Hoon Sohn,** Hyung Jin Lim, Suyoung Yang, Peipei Liu, "Wireless sensor using nonlinear ultrasonic wave modulation technique," CN Patent (Application # 201380076095.9), October 29th, 2015.

3. **Hoon Sohn,** Hyung Jin Lim, Suyoung Yang, Peipei Liu, "Wireless sensor using nonlinear ultrasonic wave modulation technique," US Patent (Application # 14787127), October 26th, 2015.

4. **Hoon Sohn,** Hyung Jin Lim, Homin Song, Sangmin Lee, Yun Won Jun, Bae Han Jin, Song Eun Ha, "Apparatus and method for detecting defect in triplex adhesive layer of LNG carrier ship," International PCT Patent (Application # PCT/KR2015/009514), September 10th, 2015.

5. **Hoon Sohn,** Ji Min Kim, Minseok Han, "Hybrid-type Wireless Power Transmission System to Charge a Wireless Health Monitoring Sensor embedded in a Structure," Korean Patent (Application # 10-2015-0123311), September 1st, 2015.

6. **Hoon Sohn,** Byeongjin Park, "Accelerated Ultrasonic Imaging Technique and System via Multipoint Laser Excitation," Korean Patent (Application # 10-2015-0121805), August 28th, 2015.

7. **Hoon Sohn,** Min-Koo Kim, "Apparatus and method of precast concrete quality control using 3D laser scanning," Korean Patent (Publication # 10-1547099-0000), August 19th, 2015, (Acknowledge: 13 건설연구 A01).

8. **Hoon Sohn,** Ji Min Kim, Jun Lee, "Tensile Force Montoring System through Eddy Current Measurement of Post-Tensioning Tendon," Korean Patent (Application # 10-2015-0112894), August 11th, 2015.

9. **Hoon Sohn,** Byeongjin Park, Byeongju Song, Cheol Woo Lim, Jae Roung Park, "Development of noncontact health monitoring system," Korean Patent (Application # 10-2015-0103773), July 22nd, 2015.

10. **Hoon Sohn,** Byeongjin Park, "Accelerated structural damage visualization through multi-level noncontact laser ultrasonic scanning and visualization method thereof," Korean Patent (Publication # 10-1539599-0000),

July 21st, 2015, (Acknowledge: 20123030020010, 2011-0016470).

11. **Hoon Sohn,** Kiyoung Kim, "Dynamic displacement estimation algorithm for civil structures using Kalman filter based acceleration-displacement data fusion," Korean Patent (Application # 10-2015-0099537), July 14th, 2015.

12. **Hoon Sohn,** Byeongjin Park, Jinyeol Yang, Jaemook Choi, Soonkyu Hwang, Irl Kim, Yeonjun Mun, Kyeongyoon Jang, Changkyu Chung, Sungwoo Choi, "Examining apparatus and examining method thereof," Korean patent (Application # 10-2015-0045358), March 31st, 2015, (Acknowledgement: G01140190).

13. **Hoon Sohn,** Qian Wang, Min-Koo Kim, "Mirror based automated dimensional inspection of side shape of precast concrete elements using 3D laser scanner," Korean patent (Application # 10-2015-0025679), February 24th, 2015, (Acknowledgement: 13 건설연구 A01).

14. **Hoon Sohn,** Byeongjin Park, Truong Thanh Chung, "Noncontact laser ultrasonic scanning and damage visualization for rotating targets," US Patent (Application # 14418427), January 29th, 2015, (Acknowledgement: 2011-0016470).

15. **Hoon Sohn**, Yun-Kyu An, Jin Yeol Yang, Soon-Kyu Hwang, Sung Il Jo, Yeon Jo Moon and Sang Young Kim, Seungwon Ha, "Laser lock-in thermography for instantaneous crack evaluation of semiconductor chips," Korean Patent (Application # 10-2015-0011235), January 23rd, 2015.

16. **Hoon Sohn,** Hyung Jin Lim, "Reference-free damage detection algorithm using Skewness-Median (SM) analysis based on nonlinear ultrasonic modulation," Korean patent (Application # 10-2015-0001796), January 7th, 2015.

17. **Hoon Sohn,** Peipei Liu, and Suyoung Yang, "Diagnosis method of structure and diagnosis system," Korean patent (Application # 10-2014-0123524), September 17th, 2014, (Acknowledgement: NRF-2010-0017456).

18. **Hoon Sohn,** Hyung Jin Lim, Homin Song, Sangmin Lee, Yun Won Jun, Bae Han Jin, Song Eun Ha, **"**Apparatus and method for detecting defect in triplex adhesive layer of LNG carrier ship," Korean patent (Application # 10-2014-0121175), September 12th, 2014.

19. **Hoon Sohn,** Hyeonseok Lee, Jinyeol Yang, "Device and method for sensing damage of pipe," US Patent (Application # 14373115), July 18th, 2014, (Acknowledgement: 2011-0018430).

20. **Hoon Sohn,** Byeongjin Park, Truong Thanh Chung, "Noncontact laser ultrasonic scanning and damage visualization for rotating targets," Korean Patent (Publication # 10-1410923-0000), June 17th, 2014, (Acknowledge: 2011-0016470).

21. **Hoon Sohn,** Hyung Jin Lim, Suyoung Yang, Peipei Liu, "Wireless inspection apparatus of a structure using nonlinear ultrasonic wave modulation and inspecting method using the apparatus," Korean Patent (Publication # 10-1414520-0000), June 26th, 2014, (Acknowledge: N01120748).

22. **Hoon Sohn**, Chul Min Yeum, Jeong-Beom Ihn, "Time delay based health monitoring system using a sensor network," US patent (Publication # US8707787), April. 29th, 2014.

23. **Hoon Sohn,** Hyeon Seok Lee, Hyunwoo Park, Hwasoo Yeo, "Imaging method of pipe damage," Korean Patent (Publication # 10-1386593-0000), April 11th, 2014

24. **Hoon Sohn,** Byeongjin Park, Truong Thanh Chung, "Noncontact laser ultrasonic scanning and damage visualization for rotating targets," Korean Patent (Publication # 10-1369212-0000), February 25th, 2014, (Acknowledge: 2011-0016470).

25. **Hoon Sohn,** Byeongjin Park and Truong Thanh Chung, "Laser ultrasonic imaging of a rotating blade,"

Korean Patent (Publication #10-1369212), February 25, 2014; International PCT Patent (PCT-KR2013-006195), February 6th, 2014, (Acknowledgement: NRF-2011-0016470).

26. **Hoon Sohn,** Byeongjin Park, Truong Thanh Chung, "Noncontact laser ultrasonic scanning and damage visualization for rotating targets," Korean Patent (Application # 10-2014-0014788), February 10th, 2014, (Acknowledge: 2011-0016470).

27. **Hoon Sohn**, Yun-Kyu An, Jin Yeol Yang, Sung Il Jo, Yeon Jo Moon and Sang Young Kim, "Laser Lock-in thermography device and technique for real-time semiconductor crack diagnosis," Korean Patent (Application # 10-2014-0008579), January 23rd, 2014, (Acknowledgment: KAIST-G01130192, NRF-2010-0017456**).**

28. **Hoon Sohn,** Hyung Jin Lim, Suyoung Yang, Peipei Liu, "Wireless sensor using nonlinear ultrasonic wave modulation technique," International PCT Patent (Application # PCT/KR2013/012037), December 23rd, 2013.

29. **Hoon Sohn** and Byeongjin Park, "Accelerated structural damage visualization through multi-level noncontact laser ultrasonic scanning and visualization method thereof," filled for Korean Patent (Application # 10-2013-0155308), December 13th, 2013, (Acknowledgement: KETEP-20123030020010 and NRF-20110016470).

30. **Hoon Sohn,** Yun-Kyu An and Ji Min Kim, "Laser lock-in thermography device for nondestructive evaluation," filled for Korean Patent (Publication # 10-1320358), October 15th, 2013, (Acknowledgement: NRF-2010-0017456).

31. **Hoon Sohn,** MinKoo Kim, "Apparatus and method of precast concrete quality control using 3D laser scanning," filled for Korean Patent (Application # 10-2013-0120253), October 10th, 2013, (Acknowledgement: 13 건설연구 A01).

32. **Hoon Sohn,** Hyeon Seok Lee, Jin Yeol Yang, "Device and method for sensing damage of pipe," Korean Patent (Publication # 10-1289253), July 18th, 2013, (Acknowledgment: NRF-2011-0016470, NRF-2011-0018430 and KETEP-2010T100101057).

33. **Hoon Sohn,** Hyeon Seok Lee, Jin Yeol Yang, "Noncontact imaging device and method for nondestructive testing," Korean Patent (Publication # 10-1281582), June 27th, 2013, (Acknowledgment: NRF-2010-0017456).

34. **Hoon Sohn**, Hyung Jin Lim, Chul Min Yeum, Jeong-Beom Ihn, "Reference free inconsistency detection system," US patent (Publication # US20130139598), June. 6th, 2013, Europe patent (Publication # EP2602615), June 6th, 2013.

35. **Hoon Sohn**, Hyungjin Lim, Suyoung Yang and Peipei Liu, "Wireless inspection apparatus of a structure using nonlinear ultrasonic wave modulation and inspecting method using the apparatus," filled for Korean Patent (Application # 10-2013-0048072), April 30th, 2013, (Acknowledgement: N01120748).

36. **Hoon Sohn** and Yun-Kyu An, "Integrated impedance and guided wave based damage detection method and integrated impedance and guided wave measurement apparatus," Korean Patent (Publication # 10-1225703), January. 17th, 2013, (Acknowledgement: NRF-2010-0020423 and NRF-2010-0017456).

37. **Hoon Sohn,** Hyeon Seok Lee, Hyun Woo Park, Hwa Su Yeo, "Imaging method of pipe damage," Korean Patent (Application # 10-2012-0135904), November 28th, 2012, (Acknowledgement: 2010T100101057).

38. **Hoon Sohn,** Chul Min Yeum, Jeong Bum Ihn, "Transducer based health monitoring system," US patent (Publication # US20120255359), October. 11th, 2012, Europe patent (Publication # EP2511701), October 17th, 2012.

39. **Hoon Sohn,** Byeongjin Park, Truong Thanh Chung, "Noncontact laser ultrasonic scanning and damage visualization for rotating targets," Korean Patent (Application # 10-2012-0084325), August 1st, 2012, (Acknowledge: 2011-0016470).

40. **Hoon Sohn,** Yun-Kyu An and Ji Min Kim, "Laser lock-in thermography device for nondestructive evaluation," filled for Korean Patent (Application # 10-2012-0062857), June 12th, 2012, (Acknowledgement: NRF-2010-0017456).

41. **Hoon Sohn**, Seung Bum Kim, "Methods, apparatuses, and systems for damage detection," US Patent (Publication # 8176786B2), May 15th, 2012.

42. **Hoon Sohn,** Yun-Kyu An, "Damage detection method using dual-sensors," Korean Patent (Publication # 10-1129726), March 16th, 2012.

43. **Hoon Sohn**, "The configuration of high speed trains for vibration reduction," Korean Patent (Publication # 10-1127768), March 12th, 2012.

44. **Hoon Sohn,** Hyun Seok Lee, Jin Yeol Yang, "Pipe damage detection apparatus and method," International PCT Patent (Application# PCT/KR2012/000568), January 20th, 2012, (Acknowledgement: 2011-0018430).

45. **Hoon Sohn,** Hyun Seok Lee, Hyun Jun Park, "Laser system for nondestructive testing," Korean Patent (Publication # 10-1101413), December 26th, 2011, (Acknowledgment: NRF-2009-0083489).

46. **Hoon Sohn,** Yun-Kyu An, "Guided wave-based damage detection method using collocated PZTs," Korean Patent (Publication # 10-1094906), December 09th, 2011, (Acknowledgement: M20703000015-07N0300-01510 and C997L7510001-08L015800110).

47. **Hoon Sohn**, Hyung Jin Lim, Chul Min Yeum, Jeong-Beom Ihn, "Reference free inconsistency detection system," US patent (Application # US 13312341), December 6th, 2011.

48. **Hoon Sohn,** Chul Min Yeum, Jeong Bum Ihn, "Mode decomposition of sound waves using amplitude matching," US patent (Publication # US20110132090 A1), June 9th, 2011.

49. **Hoon Sohn,** Chul Min Yeum, Jeong Bum Ihn, "Transducer based health monitoring system," US patent (Application # US 13083957), April 11th, 2011.

50. **Hoon Sohn,** Michael Lee, Hyun Jun Park, "Wireless system for damage detection of structure," Korean Patent (Application # 10-2011-0029071), March 30th, 2011, (Acknowledgement: NRF-2010-0017456).

51. **Hoon Sohn,** Sang Jun Lee, "Self-diagnosing transducers and systems and methods therefor," US Patent (Publication #US20110029287 A1), February 03rd, 2011.

52. **Hoon Sohn** and Yun-Kyu An, "Integrated impedance and guided wave based damage detection method and integrated impedance and guided wave measurement apparatus," Korean Patent (Application # 10-2011-0001554), January. 6th, 2011, (Acknowledgement: NRF-2010-0020423 and NRF-2010-0017456).

53. **Hoon Sohn,** Hyeon Seok Lee, Jin Yeol Yang, "Noncontact imaging device and method for nondestructive testing," Korean Patent (Application # 10-2010-0112990), November 12th, 2010, (Acknowledgment: NRF-2010-0017456).

54. **Hoon Sohn,** Seung Hee Park, "Health monitoring method for plate structure," Korean Patent (Publication # 10-0977073), August 13th, 2010.

55. **Hoon Sohn,** Sang Jun Lee, "Self-diagnosing transducers and systems and methods therefor," US Patent (Application #US12845401), July 28th, 2010.

56. Sang Jun Lee, Jennifer Michaels, **Hoon Sohn**, Thomas Michaels, "Piezoelectric transducer array self-diagnosis via guided wave linear reciprocity," US provisional patent (Filling #: 61/366,722), July 22nd, 2010.

57. **Hoon Sohn,** "The configuration of high speed trains for vibration reduction," Korean Patent (Application # 10-2010-0051690), June 1st, 2010.

58. **Hoon Sohn,** Hyun Jun Park, Chung Bang Yun, "Wireless structure health monitoring system," Korean Patent (Publication # 10-0950992), March 26th, 2010.

59. **Hoon Sohn,** Hyun Seok Lee, Hyun Jun Park, "Laser system for nondestructive testing," Korean Patent (Application # 10-2010-0042822), May 7th, 2010, (Acknowledgment: NRF-2009-0083489).

60. **Hoon Sohn,** Yun-Kyu An, "Damage detection method using dual-sensors," Korean Patent (Application # 10-2009-0132367), December 29th, 2009.

61. **Hoon Sohn,** Chul Min Yeum, Jeong Bum Ihn, "Mode decomposition of sound waves using amplitude matching," US patent (Application # US12634284), December 9th, 2009.

62. **Hoon Sohn,** Yun-Kyu An, "Guided wave-based damage detection method using collocated PZTs," Korean Patent (Application # 10-2009-0057721), June 26th, 2009, (Acknowledgement: M20703000015-07N0300-01510 and C997L7510001-08L015800110).

63. **Hoon Sohn,** Seung Hee Park, "Health monitoring method for plate structure," Korean Patent (Application # 10-2008-0051180), May 30th, 2008.

64. **Hoon Sohn,** Hyun Jun Park, Chung Bang Yun, "Wireless structure health monitoring system," Korean Patent (Application # 10-2008-0027707), March 26th, 2008.

TECHNOLOGY TRANSFER

* An exchange rate of 1 USD = 1,000 KRW is used.

1. **Hoon Sohn**, Kiyoung Kim, "Dynamic displacement estimation method and measurement apparatus," transferred to Poongsan FNS. Ltd, June 8, 2016, 220,000,000 KRW (220,000 USD).

2. **Hoon Sohn**, Yun-Kyu An, "Integrated impedance and guided wave based damage detection method and integrated impedance and guided wave measurement apparatus," transferred to TM E&C Co. Ltd, May 18, 2015, 11,000,000 KRW (11,000 USD).

3. **Hoon Sohn**, Hyung Jin Lim, Peipei Liu, Suyoung Yang, "Wireless sensor using nonlinear ultrasonic wave modulation technique," transferred to TM E&C Co. Ltd, October 30, 2014, 110,000,000 KRW (110,000 USD).

4. **Hoon Sohn**, Yun-Kyu An, Ji Min Kim, "Laser lock-in thermography for nondestructive evaluation," transferred to Jeonwoon Engineering Co. LTD, April 23, 2014, 110,000,000 KRW (110,000 USD).

5. **Hoon Sohn**, Yun-Kyu An, Jin Yeol Yang, Sung Il Jo, Yeon Jo Moon and Sang Young Kim, "Laser lock-in thermography apparatus for real-time crack diagnosis and method using the same," will be transferred to Jeonwoon Engineering Co. LTD, September 1, 2014, 27,500,000 KRW (27,500 USD).

6. **Hoon Sohn**, Min Koo Kim, "3D Laser based precast concrete geometry control," transferred to IDM Engineering Co. LTD, February 8, 2013, 11,000,000 KRW (11,000 USD).

7. **Hoon Sohn**, Chungbang Yun, "Wireless power and data transmission using laser," transferred to TM E&C Co. LTD, February 5, 2013, 11,000,000 KRW (11,000 USD).

INVITED PRESENTATIONS

* Only Invited presentations with full and partial financial supports are listed.

1. **Hoon Sohn**, "Noncontact sensing technology for structural health monitoring and nondestructive testing," *International Conference on Structural Integreity and Failure*, Adelaide, Australia, July 12-15, 2016. (**Invited Plenary Talks**)

2. **Hoon Sohn**, "Self-sufficient and self-contained sensing for local monitoring of in-situ bridge structures," EWSHM, Bilbao, Spain, July 5-8, 2016 **(Invited keynote lecture)**.

3. **Hoon Sohn**, Hyung Jin Lim, Byeongjin Park, Peipei Liu, Byeongju Song, Yongtak Kim, "Nonlinear ultrasonic modulation for damage detection," *International Conference Vibroengineering 2015*, Nanjing, China, September 26-28, 2015. (**Invited Keynote Presentation**)

4. **Hoon Sohn**, "Structural health monitoring and nondestructive testing for electronic devices, mechanical systems and civil infrastructure," Civil and Environmental Engineering, *Princeton University,* New Jersey, USA, May 19, 2015.

5. **Hoon Sohn**, "Visions for futuristic inspection and monitoring of bridges," Center for Advanced Infrastructure and Transportation, *Rutgers University,* New Jersey, USA, May 18, 2015.

6. **Hoon Sohn**, "Real world examples of true added values provided by SHM and NDT technology," *Asian Pacific Workshop on Structural Health Monitoring,* Shenzhen, China, November 4-5, 2014. **(Invited Keynote Presentation)**

7. **Hoon Sohn**, "Transition from contact to noncontact sensing for structural health monitoring and nondestructive testing," *the 6 World Conference on Structural Control and Monitoring*, Barcelona, Spain, July 15-17, 2014. **(Invited Plenary Keynote Lecture)**

8. **Hoon Sohn**, "Noncontact sensing technology for structural health monitoring and nondestructive testing," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 9-13, 2014. **(Invited Plenary Keynote Presentation)**

9. Jinyeol Yang, Suyoung Yang, Hyeonseok Lee, **Hoon Sohn**, "Wireless impedance-based pipe corrosion monitoring using MFC transducers under temperature variations," The 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Hong Kong, China, December 9-11, 2013. (**Invited paper**)

10. **Hoon Sohn**, "Noncontact and embedded structural health monitoring and nondestructive testing," Korea Aerospace Research Institute (KARI), Daejeon, Korea, August 29, 2013.

11. **Hoon Sohn**, "Various monitoring and nondestructive testing applications: from micro-scale to large-scale structures," ANCRiSST, Ulsan, Korea, July 18-20, 2013. (**Invited Keynote Presentation**)

12. **Hoon Sohn**, "Noncontact laser ultrasonics for wind turbine blade monitoring," International Symposium on Innovation and Sustainability of Structures in Civil Engineering (ISISS), Harbin, China, July 6-7, 2013. **(Invited Keynote Presentation)**

13. **Hoon Sohn**, "Journey to Happiness," LG Global Challenger, Daejeon, Korea, January 24, 2013. **(Invited Keynote Presentation)**

14. **Hoon Sohn**, "Laser based structural health monitoring," Pacific-Rim Workshop on Innovation in Civil Engineering, National Taiwan University of Science and Technology, Taiwan, January 9-11, 2013. (**Invited Paper)**.

15. **Hoon Sohn**, "Introduction to smart materials and their applications to structural health monitoring and control" and

"Statistical pattern recognition paradigm for structural health monitoring: theory and applications," An invited guest lecture for the 1st International Summer School on Smart Structures: New Technologies from a Civil and Mechanical Engineering Perspective, University of Trento, Italy, Sep 4, 2012.

16. **Hoon Sohn**, "Laser based structural health monitoring, Pacific-Rim Workshop on Innovations in Civil Infrastructure Engineering, National Taiwan University of Science and Technology (NTUST), Taipei, Taiwan, January 9-11, 2013. **(Invited Keynote Presentation)**

17. **Hoon Sohn**, "Laser based structural health monitoring, *University of Connecticut, Connecticut, CT,* October 24, 2012. **(Invited Paper)**

18. Hyeon Seok Lee, Hyun Woo Park, **Hoon Sohn** "Defect visualization in pipes using a longitudinal guided wave mode," 164th Acoustical Society of America, Kansas City, Missouri, US, October 22-26, 2012. **(Invited Presentation)**

19. **Hoon Sohn**, Yun Kyu An, Byeongjin Park, "Advancements and challenges in a Laser ultrasonic scanning system for structural health monitoring applications," *CIMTEC 4th International Conference on Smart Materials, Structures and Systems, Tuscany, Italy,* June 10-15, 2012. **(Invited Paper)**

20. **Hoon Sohn**, "Laser ultrasonics transition from nondestructive testing to structural health monitoring," *University of Michigan,* Ann Harbor, MI, May 15, 2012. **(Invited Presentation)**

21. **Hoon Sohn**, "Laser ultrasonics transition from nondestructive testing to structural health monitoring," *Northwestern University,* Evanston, IL, May 10, 2012. **(Invited Presentation)**

22. **Hoon Sohn**, "Laser ultrasonics based structural health monitoring," *University of Illinois at Urbana Champaign,* Urbana-Champaign, IL, March 26, 2012. **(Invited Presentation)**
    mms://streamer.cen.uiuc.edu/cee595/Spring2012/Lecture05.wmv

23. **Hoon Sohn**, "Laser based structural health monitoring for civil, mechanical and aerospace systems," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 11-15, 2012. **(Invited Keynote Presentation)**

24. **Hoon Sohn**, "Noncontact laser ultrasonic scanning and embedded guided wave sensing for ground nondestructive testing and online condition monitoring of aging aircraft," Hong Kong Polytechnic University, Hong Kong, China, April 12, 2011.

25. **Hoon Sohn**, "Applications of structural health monitoring to civil infrastructure, aircraft and nuclear power plants," Korean Society for Noise and Vibration Engineering (KSNVE) Lecture Series, Seoul, Korea, April 8, 2011.

26. **Hoon Sohn**, "Active sensing based structural health monitoring," An invited guest lecture for the International Summer Camp on Smart Structures Technology, University of Tokyo, Japan, July 23, 2010.

27. **Hoon Sohn**, "Goals, plans and strategies for green city development in Korea," Korea-China-Japan Workshop for Young Researchers as part of Korea, China, Japan Trilateral Summit attended by South Korean President Myung Bak Lee, Chinese Premier Wen Jiabao and Japanese Prime Minister Yukio Hatoyama, Jeju, Korea, May 29-30, 2010.

28. **Hoon Sohn**, "Advanced techniques for guided wave based structural health monitoring," University of California, Irvine, CA, USA, March 12, 2010.

29. **Hoon Sohn**, "Guided wave based damage detection using piezoelectric transducers," ANCRiSST 2009 Short Course, Northeastern University, Boston, MA, USA, July 29, 2009.

30. **Hoon Sohn**, "Piezoelectric sensor and its applications," An invited guest lecture for the International Summer Camp on Smart Structures Technology, University of Illinois at Urbana-Champaign, IL, USA, July 14, 2009.

31. **Hoon Sohn**, "Optics-based wireless power and data transmission system for ultrasonic," Air Force Research Laboratory, Dayton, Ohio, USA, July 10, 2009.

32. **Hoon Sohn**, "A reference-free paradigm for steel structure monitoring," RIST (the technology center for POSCO Corporation, which is the second largest steel manufacturing company in the world), Seoul, Korea, November 27, 2008. (**Invited Presentation**)

33. **Hoon Sohn**, "Sensing for bridge monitoring and prognostication: does it make a sense? how to make sense out of it?," *US NSF Bridge Condition Monitoring and Prognostication Workshop,* Minneapolis, MN, November 20-21, 2008. (**Invited Keynote Presentation**)

34. **Hoon Sohn**, "Reference-free approaches for structural health monitoring," CIMTEC 2008: *3rd International Conference on Smart Materials, Structures and Systems,* Sicily, Italy, June 8-12, 2008 **(Invited Presentation)**.

35. **Hoon Sohn**, "Applications of non-destructive testing techniques used in nuclear power plants to other fields," Nuclear Energy Relay Forum, Busan, Korea, April 30, 2008.

36. **Hoon Sohn**, "Reference-free transducer and structure self-diagnosis," Korea Electric Power Research Institute, Deajeon, Korea, April 30, 2008.

37. **Hoon Sohn**, "Applications of smart technologies to ubiquitous city developments," U-Space Development Forum, Seoul, Korea, April 11, 2008.

38. **Hoon Sohn**, "World is flat: international collaboration opportunities in smart structures technology." Structural Engineering Department, University of California at San Diego, CA, March 12, 2008.

39. **Hoon Sohn**, "World is flat: international collaboration opportunities in smart structures technology." Structural Engineering Department, University of Southern California, CA, March 7, 2008.

40. **Hoon Sohn**, "Reference-free transducer and system diagnosis," Air Force Institute of Technology, Dayton, Ohio, July 31, 2007.

41. **Hoon Sohn**, "Reference-free transducer and system diagnosis," Xiamen University, Xiamen, China, October 18, 2006.

42. **Hoon Sohn**, "Multi-functional and multi-scale structural health monitoring," National Taiwan University, Taipei, Taiwan, October 11, 2006.

43. **Hoon Sohn**, "Reference-free transducer and system diagnosis," University of Cincinnati, Cincinnati, OH, August 14, 2006.

44. **Hoon Sohn**, "Reference-free transducer and system diagnosis," Phantom Works, The Boeing Company, July 28, Seattle, WA, 2006.

45. **Hoon Sohn**, "Active sensing for disbond detection in CFRP strengthened RC beams," University of Nevada, Reno, May 30, 2006.

46. **Hoon Sohn**, Seung Dae Kim, Chi Won In, Kelly E. Cronin, Kent Harries, "Application of time reversal guided waves to debond detection in CFRP strengthened RC beams," *International Symposium on Mechanical Waves in Solids*, Zhejiang University, Hangzhou, Zhejiang, China, May 15-18, 2006.

47. **Hoon Sohn**, H. Scott Matthews, Irving J. Oppenheim, "Sensor driven proactive infrastructure monitoring," *Advanced Infrastructure Systems Symposium*, Carnegie Mellon University, April 28, 2006.

48. **Hoon Sohn**, "Active sensing for disbond defection in FRP strengthened RC beams" the University of Pittsburgh, Pittsburgh, PA, March 22, 2006.

49. **Hoon Sohn**, "Multi-functional and multi-scale structural health monitoring" Hong Kong Polytechnic University, Hong Kong, November 13, 2005.

50. **Hoon Sohn**, "Past, presence, and future of structural health monitoring" Samsung Engineering and Construction, Seoul, Korea, June 14, 2005.

51. **Hoon Sohn**, "Past, presence, and future of structural health monitoring" New Airport Hiway, Co. Ltd., Incheon, Korea, June 13, 2005.

52. **Hoon Sohn**, H. Scott Matthews, Irving J. Oppenheim, "Sensing applications for advances infrastructure systems," Advanced Infrastructure Systems Symposium, Carnegie Mellon University, April 29, 2005.

53. **Hoon Sohn**, "Multi-function and multi-scale sensing for structural health monitoring," Bombardier, Pittsburgh, PA, March 24, 2005.

54. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil and Environmental Engineering, University of Texas, A&M, College Station, TX, April 4, 2004.

55. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil and Environmental Engineering, University of Delaware, Newark, DE, April 1, 2004.

56. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil and Environmental Engineering, Michigan State University, Lansing, MI, March 22, 2004.

57. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Mechanical Engineering, University of Cincinnati, Cincinnati, OH, March 10, 2004.

58. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil Engineering, University of California at Berkeley, Berkeley, CA, March 2, 2004.

59. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil Engineering, Carnegie Mellon University, Pittsburgh, PA, February 20, 2004.

60. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil Engineering, Colorado State University, Fort Collins, CO, February 16, 2004.

61. **Hoon Sohn**, "Self-contained sensor development for online structural health monitoring," Department of Civil Engineering, Duke University, Durham, NC, February 11, 2004.

62. **Hoon Sohn**, "Active sensing and data interrogation for structural health monitoring," Department of Civil Engineering, University of Missouri-Rolla, Rolla, MO, January 29, 2004.

63. **Hoon Sohn**, "Statistical pattern recognition paradigm for structural health monitoring," Department of Civil Engineering, Purdue University, West Lafayette, IN, April 14, 2003.

64. **Hoon Sohn**, "Statistical pattern recognition paradigm for structural health monitoring," Department of Civil Engineering, University of Michigan, Ann Arbor, MI, April 3, 2003.

65. **Hoon Sohn**, "Overview of structural health monitoring," Norwegian Defense Research Establishment, Kjeller, Norway, November 23, 2002.

66. **Hoon Sohn**, Amy N. Robertson, Charles R. Farrar, "Singularity detection using holder exponent," the *US-Korea Workshop on Smart Infrastructural Systems*, Pusan, South Korea, August 23-24, 2002.

67. **Hoon Sohn**, David W Allen, Charles R. Farrar, Keith Worden, "Development of an autonomous continuous monitoring system for mechanical damage detection," the *2nd International Conference on Advances in Structural Engineering and Mechanics*, Pusan, South Korea, August 21-23, 2002.

68. **Hoon Sohn**, "Structural health monitoring activities at Los Alamos National Laboratory," *Invited Workshop on Instrumental Diagnostics of Seismic Response of Bridges and Dams*, Richmond, CA, October 26-27, 2000.

69. **Hoon Sohn**, "Statistical pattern recognition paradigm for structural health monitoring," Department of Civil Engineering, Seoul National University, Seoul, Korea, December 19, 2001.

70. **Hoon Sohn**, "Statistical pattern recognition paradigm for structural health monitoring," *presented at National Science Foundation Sponsored Advanced Study Institute on Damage Prognosis*, Florianopolis, Brazil, October 19-30, 2003

71. Charles R. Farrar and **Hoon Sohn**, "Adaptive algorithms for damage detection and location," *Caltrans and UCSD Structural Health Monitoring and Bridge Infrastructure Workshop*, San Diego, CA, March 7-8, 2003.

72. **Hoon Sohn**, Amy N. Robertson, Charles R. Farrar, "Singularity detection using holder exponent," the *US-Korea Workshop on Smart Infrastructural Systems*, Pusan, South Korea, August 23-24, 2002 (invited speaker: Hoon Sohn)

73. **Hoon Sohn**, David W Allen, Charles R. Farrar, Keith Worden, "Development of an autonomous continuous monitoring system for mechanical damage detection," the *2nd International Conference on Advances in Structural Engineering and Mechanics*, Pusan, South Korea, August 21-23, 2002 (session organizer & invited speaker: Hoon Sohn)

BOOK & BOOK CHAPTERS

1. **Hoon Sohn**, Hyungjin Lim, Peipei Liu, Byeongjin Park, Byeongju Song, "Nonlinear ultrasonic wave modulation for fatigue crack and delamination detection," a book chapter in Nonlinear Acoustic Techniques for Nondestructive Evaluation (Editor: Tribikram Kundu), Springer, (in preparation), 2015.

2. **Hoon Sohn**, Peipei Lie, "Non-contact laser ultrasonic for SHM in aerospace structures," a book chapter in Structural health monitoring in aerospace engineering (Editor: Fuh-Gwo Yuan), Elsevier, (in print), 2015.

3. **Hoon Sohn**, Hyung Jin Lim, Suyoung Yang, "Fatigue crack detection methodology," a Book chapter in CISS: Smart Sensors for Health and Environment Monitoring (Editor: Kyung, Chong-Min), Springer, 2015.

4. Ming L. Wang, Jerome P. Lynch and **Hoon Sohn**, Sensor technologies for civil infrastructures, Volume 1: sensing hardware and data collection methods for performance assessment, Woodhead Publishing, 2014.

5. Ming L. Wang, Jerome P. Lynch and **Hoon Sohn**, Sensor technologies for civil infrastructures, Volume 2: applications in structural health monitoring, Woodhead Publishing, 2014.

6. **Hoon Sohn**, Byeongjin Park, "Laser based Structural Health Monitoring," a book chapter in *Encyclopedia of Earthquake Engineering* (Editors: Michael Beer, Edorardo Patelli, Ioannis Kougioumtzoglou and Ivan Siu-Kui Au), Springer, submitted, 2014.

7. Ming L. Wang, Jerome P. Lynch**,** **Hoon Sohn**, "Introduction to sensing for structural performance assessment and health monitoring," Chapter 1 in *Sensor Technologies for Civil Infrastructures*, Volume 1: sensing hardware and data collection methods for performance assessment, Woodhead Publishing, 2014.

8. Yun Kyu An, Min Koo Kim**,** **Hoon Sohn**, "Piezoelectric transducers for assessing and monitoring civil

infrastructures," Chapter 4 in *Sensor Technologies for Civil Infrastructures*, Volume 1: sensing hardware and data collection methods for performance assessment, Woodhead Publishing, 2014

9. Hyun Seok Lee, Jin Yeol Yang**,** **Hoon Sohn**, Byeongjin Park, "Sensing solutions for assessing and monitoring of nuclear power plants (NPPs)," Chapter 20 in *Sensor Technologies for Civil Infrastructures*, Volume 2/Part II:Case studies in assessing and monitoring specific structures, Woodhead Publishing, 2014.

10. Wieslaw Staszewski, **Hoon Sohn,** "Signal processing for structural health monitoring," a book chapter in *Encyclopedia of Aerospace Engineering* (Editor, Richard Blockley and Wei Shyy), John Wiley & Sons, 2010.

11. **Hoon Sohn,** and Chang Kook Oh, "Statistical Pattern Recognition," a book chapter of *Encyclopedia of Structural Health Monitoring* (Editors: Profs. C. Boller, F.K. Chang and Y. Fujino), John Wiley & Sons, Chapter 30, pp.579-596, 2009.

12. **Hoon Sohn,** Seung Bum Kim, Seung Dae Kim, "Guided wave based nondestructive testing: a reference-free pattern recognition approach," a book chapter of *Ultrasonic and Advanced Methods for Nondestructive Testing and Material Characterization* (C.H. Chen, Editor), the World Scientific Publishing Corp., 2007.

13. **Hoon Sohn**, "Statistical pattern recognition paradigm applied to defect detection in composite plates," a book chapter of *Damage Prognosis: For Aerospace, Civil and Mechanical Systems* (Prof. Daniel J. Inman et al., Editors), John Wiley & Sons, Ltd, 2005.

DISSERTATION & THESIS

1. **Hoon Sohn**, "A Bayesian probabilistic approach to damage detection for civil structures," Doctoral Dissertation, Department of Civil Engineering, Stanford University, Stanford, CA, January 1999.

2. **Hoon Sohn**, "Aerodynamic analysis of a cable-stayed bridge considering directionality and spatial variation of wind," M.S. Thesis, Seoul National University, Seoul, KOREA, June 1994.

OTHER PUBLICATIONS

*The corresponding author is underlined.

1. **Hoon Sohn,** "International guidelines for the application of technology to bridges," US Federal Highway Administrator Long-term bridge performance program report, edited by A. Emin Aktan, 2011 (One of the contributors, in preparation).

2. **Hoon Sohn,** "Protocols for short-term testing of bridges," US Federal Highway Administrator Long-term bridge performance program report, edited by A. Emin Aktan, 2011 (One of the contributors, in preparation).

3. **Hoon Sohn**, "Structural identification of constructed facilities: approached, methods and technologies for effective practice of St-Id," A State-of-the-Art Report by ASCE SEI Committee on Structural Identification of Constructed Systems edited by F. Necati Gatbas, Tracy Kijewski-Correa and A. Emin Aktan, 2011 (One of the main contributors of the report, particularly for Chapters 3 and 4).

4. **Hoon Sohn**, "Active sensing for online highway bridge monitoring," Final report submitted to Transportation Research Board, March 31, 2007.

5. **Hoon Sohn**, Charles R. Farrar, Francois M. Hemez, Jerry J. Czarnecki, Devin D. Shunk, Daniel W. Stinemates, Brett R. Nadler, "A review of structural health monitoring literature: 1996-2001," Los Alamos National Laboratory Report, LA-13976-MS, 2004. **(Cited: 226)**

6. Charles R. Farrar, **Hoon Sohn**, Francois M. Hemez, Mark C. Anderson, Matthew T. Bement, Phillip J. Cornwell, Scott W. Doebling, Nick Lieven, Amy N. Robertson, John F. Schultze, "Damage prognosis: current status and future needs," Los Alamos National Laboratory Report, LA-14051-MS, 2003.

7. Amy N. Robertson, Phillip J. Cornwell, **Hoon Sohn**, Charles R. Farrar, "Preliminary data analysis for instrumenting a structural health monitoring system for Walt Disney's Rock'n Roller Coaster," Los Alamos National Laboratory Report, LA-14302-MS, 2003.

8. Kieth Worden, David W. Allen, **Hoon Sohn**, Charles R. Farrar, "Extreme value statistics for damage detection in mechanical structures," Los Alamos National Laboratory Report LA-13903-MS, 2002.

9. **Hoon Sohn**, Charles R. Farrar, Norm F. Hunter, Keith Worden, "Applying the LANL statistical pattern recognition paradigm for structural health monitoring to data from a surface-effect fast patrol boat," Los Alamos National Laboratory Report, LA-13761-MS, 2001.

FUNDED PROJECTS

* An exchange rate of 1 USD = 1,000 KRW is used.
* Raised a total of 51,469,690 USD (39,644,754 USD as PI and 11,824,936 USD as CO-PI or Consultant)
* Since 2007, raised a total of 45,167,673 USD (38,581,758 USD as PI and 6,585,915 USD as CO-PI or Consultant)

1. **Commercialization and global market development of 6-DOF dynamic displacement measurement system (Primary Investigator):** Commercialization Promotion Agency for R&D outcomes (Funded: 240,000,000 KRW (240,000 USD) for 05/04/15 to 05/03/17)

2. **Real-time non-contact damage visualization and characterization of composite aircraft structures:** Boeing, US (Funded: 11,800,317 KRW (11,800 USD) for 03/28/16 to 12/01/16)

3. **Requirements for measurement of structural member stability (Primary Investigator):** Korea Research Institute of Standards and Science (KRISS) (Funded: 27,272,727 KRW (27,273 USD) for 02/01/16 to 10/31/16)

4. **Investigation of Drone Applications for Urban Safety (Primary Investigator):** Funded by Seoul City, Korea (Funded: 97,000,000 KRW (97,000 USD) for 04/15/16 to 11/10/16)

5. **Development of a noncontact monitoring system for online quality monitoring of industrial products (Co-investigator):** Co-funded by EUROSTARS2 Program by the European Union Horizon 202 Framework Programme and Korea Ministry of Trade, Industry and Energy (Funded: 750,000,000 KRW (750,000 USD) out of total 2,976,000,000 KRW (2,976,000 USD) for 11/01/15 to 10/31/18)

6. **Embedded post-tensioning tendon force monitoring system using eddy current and wireless power transmission/data techniques (Primary Investigator):** Korea Advanced Institute of Science and Technology(KAIST) (Funded: 3,000,000,000 KRW (300,000 USD) for 10/01/15 to 08/31/17)

7. **Planning for large-scale infrastructure monitoring and management using unmanned inspection units (Primary Investigator):** Korea Agency for Infrastructure Technology Advancement (KAIA) (Funded: 50,000,000 KRW (50,000 USD) for 10/15/15 to 02/15/16)

8. **Development of a self-sufficient wireless sensor node based structural health monitoring system for civil infrastructure (Global Frontier Project) (Co-Investigator):** National Research Foundation of Korea (Equivalent to National Science Foundation in US) (Funded: 406,000,000,000 KRW (406,000,000 USD) for 09/01/12 to 06/30/16)

9. **Development and commercialization of 6-DOF dynamic response measurement system for civil infrastructure monitoring (Primary Investigator):** Ministry of Land, Infrastructure and Transport of Korea (Funded: 1,500,000,000 KRW (1,500,000 USD) for 06/19/2015 to 06/18/2018)

10. **Development of a fire-induced structural collapse alarm system using smart ball sensors (Primary Investigator):** Ministry of Public Safety and Security of Korea (Funded: 2,375,000,000 KRW (2,375,000 USD) for 07/01/2015 to 06/30/2018)

11. **Noncontact, real-time, and autonomous diagnosis of fatigue cracks in industrial and aerospace rotor systems (Primary Investigator with Co-Investigator, Mohammad A. Alshudeifat at Khalifa University in UAE):** 2015 Seed Money Project, KAIST, (Funded: 60,000,000 KRW (60,000 USD) for 06/01/15 to 03/31/16)

12. **Development of a noncontact potable facility monitoring system (Primary Investigator):** HYUNDAI NGV, Korea (Funded: 84,150,000 KRW (84,150 USD) for 02/01/15 to 10/31/15)

13. **Development of a nonlinear ultrasonic based fatigue crack detection technique for marine structures (Primary Investigator):** Hyundai Heavy Industries, Korea (Funded: 100,000,000 KRW (100,000 USD) for 03/01/15 to 02/28/17)

14. **Baseline-free methods for early damage diagnosis using nonlinear ultrasound (Partner Investigator, Chief Investigators and other partner investigators: Chun Wang (RMIT university), Martin Veidt (University of Queensland), Wing K Chiu (Monash University), Francis Rose (Defense Science and Technology Organization)):** ARC Discovery Grant, Australian Research Council, Australia (Funded: 443,900,000 KRW (443,900 USD) for 01/01/15 to 12/31/17)

15. **Plausibility study for infrastructure health monitoring using military accelerometer (Primary Investigator):** Poongsan Corporation (Funded: 25,000,000 KRW (25,000 USD) for 07/01/14 to 12/31/14)

16. **Detection of faulty electronic components using Laser lock-in thermography (Primary Investigator):** End-run Program, KAIST (Funded: 229,000,000 KRW (229,000 USD) for 07/01/14 to 12/31/14)

17. **Development of an in-situ wind turbine blade inspection system using laser ultrasonics (Primary Investigator):** Climate Change Reserach Hub, KAIST (Funded: 160,000,000 KRW (160,000 USD) for 01/01/14 to 12/31/15)

18. **Detection of micro cracks and chipping in smart phone display using Laser lock-in thermography (Co-Investigator, Primary Investigator: Jeonwon Technology):** Innopolis Foundation (Funded: 100,000,000 KRW (100,000 USD) out of 384,000,000 KRW (384,000 USD) for 06/01/14 to 05/31/15)

19. **Development of nondestructive testing technique for the detection of internal void and surface crack in electronic components sets (Primary Investigator):** Samsung Electronics Global Technology Center (Funded: 60,000,000 KRW (60,000 USD) for 06/09/14 to 12/08/14)

20. **Infrastructure monitoring using UAV, noncontact sensing, ICT, USN and big data analysis (Primary Investigator):** KAIST Institute (Funded: 100,000,000 KRW (100,000 USD) for 09/01/13 to 12/31/14)

21. **Development of a facility monitoring system through laser scanning (Primary Investigator):** Hyundai-Kia Automobile (Funded: 80,750,000 KRW (80,750 USD) for 05/01/13 to 08/31/14)

22. **A smart scanning system for green energy infrastructure - BrainPool (Primary Investigator):** Korean Federation of Science and Technology Societies (Funded: 25,500,000 KRW for 04/17/13 to 08/16/14)

23. **Development of an automated non-destructive inspection system for adhesive layer of Triplex**

(Primary Investigator): Hyundai Heavy Industries (Funded: 404,000,000 KRW (404,000 USD) for 09/01/13 to 08/31/15 and 03/02/16 to 02/28/17)

24. **Acoustical nonlinearity of structural fatigue cracks and probability-based characterization and monitoring (Co-Investigator, Primary Investigator: Zhongqing Su at Hong Kong Polytechnical University):** National Science Foundation of China (NSFC) (Funded: 142,000 USD for 01/01/14 to 12/31/17)

25. **Development of a laser thermography technique for real-time crack detection in semiconductor (Primary Investigator):** Samsung Electronics (Funded: 190,000,000 KRW (190,000 USD) for 06/01/13 to 05/31/14)

26. **Bridge life-span extension using ICT, partial replacement and low-carbon materials (Primary Investigator and Director):** Ministry of Land, Infrastructure and Transportation (Funded: 28,320,000,000 KRW (28,320,000 USD) for 06/01/13 to 05/31/18)

27. **Development of a noncontact wind turbine blade monitoring system using laser ultrasonics (Primary Investigator):** The Energy Technology Development Program at Ministry of Knowledge Economy in Korea (Funded: 1,370,000,000 KRW (1,370,000 USD) for 11/01/12 to 10/31/15)

28. **Development of autonomous non-contact measurement system combining laser Doppler vibrometer and LADAR (Primary Investigator):** Korean Ministry of Land, Transport, and Maritime Affairs (Funded: 50,000,000 KRW for 09/30/12 to 03/30/14)

29. **Development of non-disassembly and nondestructive inspection techniques for train subsurface component inspection, (Co-Investigator):** Korean Ministry of Knowledge Economics (Funded: 80,000,000 KRW (80,000 USD) out of 1,500,000,000 KRW (1,500,000 USD) (for 06/01/12 to 04/30/13)

30. **Investigation of long-range rail inspection techniques using guided waves (Primary Investigator):** Korea Railroad Research Institute (Funded: 30,000,000 KRW (30,000 USD) for 03/26/12 to 12/31/12)

31. **Development of smart sensing technology for equipment abnormality detection (Primary Investigator):** Hyundai-Kia Automobile (Funded: 80,750,000 KRW (80,750 USD) for 06/01/12 to 05/31/13)

32. **Characterization of guided wave propagation in aircraft structures (Subcontractor):** National Sciences and Engineering Research Council of Canada (Funded: 50,000 USD for 09/01/13 to 08/31/15)

33. **Planning of intelligent green bridge project (Co-investigator):** Korea Ministry of Land, Transportation and Maritime Affairs (Funded: 150,000,000 KRW (150,000 USD) for 06/20/11 to 12/20/11)

34. **Development of Smart Steel Members for Online Steel Structure Monitoring (Primary Investigator):** POSCO Corporation (Funded: 41,000,000 KRW (41,000 USD) for 01/05/11 to 12/31/11)

35. **Development of Fast Construction Methods using Building Information Technology and Smart Sensor Technologies (Consultant):** Daewoo Construction Company (Funded: 25,000,000 KRW (my consulting fee is about 5,000,000 KRW) (25,000 USD) for 11/01/10 to 03/31/11)

36. **Development of a Real-Time Continuous Monitoring System for Nuclear Power Plants Considering High Temperature and Radiation Environments (Primary Investigator):** The Nuclear Technology Development Program at Ministry of Knowledge Economy in Korea (Funded: 190,000,000 KRW (190,000 USD) for 11/01/10 to 10/31/12)

37. **A Smart Scanning System for Green Energy Infrastructure (Primary Investigator):** The National Research Laboratory Program (NRL) at National Research Foundation of Korea (Equivalent to National Science Foundation in US) (Funded: 1, 548,000,000 KRW (1, 548,000 USD) for 05/01/10 to 04/30/15)

38. **In-service Monitoring of Nuclear Power Plants (Primary Investigator):** Energy, Environment, Water and Sustainability (EEWS) Program at KAIST (Funded: 150,000,000 KRW (150,000 USD) for 04/01/10 to 03/31/13)

39. **Development of Enabling Technologies for Continuous Nuclear Power Plant Monitoring:** National Research Foundation of Korea (Funded: 250,000,000 KRW (250,000 USD) for 07/01/09 to 06/30/11)

40. **Advancement of Reference-Free Diagnosis for Aircraft Monitoring (Primary Investigator):** US Air Force, Asian Office of Aerospace Research and Development (AOARD) Program (Funded: 25,000 USD (25,000,000 KRW) for 06/01/09 to 05/31/10)

41. **Ubiquitous and Ecology City Development (Co-investigator):** Korea Ministry of Land, Transportation and Maritime Affairs (Funded: 209,695,000 KRW (209,695 USD) out of total 27,594,803,000 KRW (27,594,803 USD) for 11/14/08 to 04/30/13)

42. **Optics-Based Wireless Power and Data Transmission (Primary Investigator):** Early Career Faculty Development Program at KAIST (Funded: 30,000,000 KRW (30,000 USD) for 01/01/08 to 12/31/08)

43. **Instrumented Pipeline Initiative (Sub-contractor):** U.S. Department of Energy, National Energy Technology Laboratory (Funded: 500,000 USD (500,000,000 KRW) for 07/01/08 to 12/31/09)

44. **Research on Structural System Stiffness Decrease and Damage Detection using KAIST Sport Complex (Co-Investigator):** POSCO (Funded: 35,000,000 KRW (35,000 USD) for 06/01/08 to 03/31/10)

45. **Development of Enabling Technologies for Structural Health Monitoring (Co-Investigator):** Korean Agency for Defense Development (Funded: 240,000,000 KRW (240,000 USD) out of total 3,200,000,000 KRW (3,200,000 USD) for 06/01/08 to 05/31/11)

46. **Development of Non-Stop High-Speed Trains with a Vibration Cancellation Scheme (Primary Investigator):** The High-Risk/High-Return Project Program at KAIST (Funded: 77,000,000 KRW (77,000 USD) for 0101/08 to 12/31/09)

47. **Development of On-board SHM Technologies for Composite Air Vehicles (Primary investigator):** The Boeing Company (Funded: 400,000 USD (400,000,000 KRW) for 08/01/08 to 07/31/11)

48. **Panel Testing, Analysis and Final Report (Primary investigator):** The Boeing Company (Funded: 25,000 USD (25,000,000 KRW) for 11/07/07 to 12/31/07)

49. **The development of PZT Sensor Networking Technology for Structural Health Evaluation (Primary investigator):** National Research Foundation of Korea (Equivalent to National Science Foundation in US) (Funded: 294,000,000 KRW (294,000 USD) for 06/27/07 to 05/31/12)

50. **Instantaneous Nondestructive Testing of Aging Aircraft without Baseline Data (Co-investigator):** National Research Foundation of Korea (Funded: 170,955,000 KRW (170,955 USD) for 08/01/07 to 07/31/09)

51. **Development of an Instantaneous Damage Detection Technique (Primary investigator):** National Research Foundation of Korea (Funded: 50,608,000 KRW (50,608 USD) for 08/01/08 to 07/31/09)

52. **The Establishment of Real-Time Monitoring Network for Rail Bridges (Co-investigator):** Korea Ministry of Construction and Transportation (Funded: 33,000,000 KRW (33,000 USD) for 09/29/07 to 06/30/09)

53. **Reference-Free Crack Diagnosis Based on Polarization Characteristics of Smart Materials (Primary Investigator):** NSF CMMI Program (Funded: 140,000 USD (140,000,000 KRW) for 09/01/07 to 08/31/09)

54. **Continuous Structural Monitoring of Aging Aircraft without using Reference Data (Primary Investigator):** US Air Force, Asian Office of Aerospace Research and Development (AOARD) Program (Funded: 50,000 USD (50,000,000 KRW) for 05/01/07 to 05/31/09)

55. **Online Continuous Monitoring of Bridge Structures (Primary Investigator):** Smart Infra-Structure Technology Center, National Research Foundation of Korea (Funded: 140,000,000 KRW (140,000 USD) for 03/01/07 to 02/28/11)

56. **International Testbed Opportunity for Bridge Monitoring and Assessment (Co-investigator):** Smart Infra-Structure Technology Center, National Research Foundation of Korea (Funded: 19,500,000 KRW (19,500 USD) for 03/01/07 to 02/28/11)

57. **SGER: A Multivariate Calibration of St-Id for Applications to Constructed Facilities, (Co-Investigator):** National Science Foundation (Funded: CMU 17,820 USD (17,820,000 KRW) out of 138,347 USD (138,347,000 KRW) for 03/01/07 to 08/31/10)

58. **Development of Information Technology Based Smart FRP-Concrete Composite Girders (Consultant):** Korea Institute of Construction Technology's Technology Evaluation and Planning Program (Funded: 25,000,000 KRW (25,000 USD) for 12/16/06 to 04/31/07)

59. **Continuous Monitoring of Distributed Pipeline Systems (Primary Investigator):** Pennsylvania Infrastructure Technology Alliance Program (Funded: 60,000 USD (60,000,000 KRW) for 01/01/06 to 12/31/06)

60. **Application of Lamb Wave Non-Baseline Crack Detection (Consultant):** Miltec Corporation, A Subsidiary of Ducommun Technologies, Inc. (Funded: 20,000 USD (20,000,000 KRW) for 09/01/06 to 11/31/06)

61. **Active Sensing Monitoring for the Newark Airport Monorail Guideway (Primary Investigator):** Bombardier Inc. and Pennsylvania Infrastructure Technology Alliance Program (Funded: 60,536 USD (60,536,000 KRW) for 07/01/06 to 07/31/07)

62. **Active Sensing for Online Highway Bridge Monitoring (Primary Investigator):** Innovations Deserving Exploratory Analysis (IDEA) Program at Transportation Research Board (Funded: 99,071 USD (99,071,000 KRW) for 04/01/06 to 03/31/07)

63. **Development of Sensor Self-Diagnosis for Structural Health Monitoring (Primary Investigator):** Pennsylvania Infrastructure Technology Alliance Program (Funded: 63,212 USD (63,212,000 KRW) for 06/01/06 to 05/31/07)

64. **Development of a Debonding Monitoring System for Reinforced Concrete (RC) Structures Strengthened with Fiber Reinforced Polymer (FRP) Composite Overlays (Primary Investigator):** Pennsylvania Infrastructure Technology Alliance Program (Funded: 57,633 USD (57,633,000 KRW) for 06/01/06 to 05/31/07)

65. **Self-Contained Sensor Skin for Highway Bridge Monitoring (Primary Investigator):** National Science Foundation (Funded for 350,187 USD (350,187,000 KRW) for 10/01/05 to 09/30/08, CMII 0529208)

66. **Acquisition of a Microscope-based System for Research and Education on Micro/Nano-Scale Dynamics (Senior Personnel):** National Science Foundation, Major Research Instruments Initiative (Funded: 416,499 USD (416,499,000 KRW) for 09/01/05 to 08/31/08)

67. **Establishment of an Advanced Infrastructure System Sensor Lab (Co-Investigator):** Pennsylvania Infrastructure Technology Alliance Program (Funded: 77,777 USD (77,777,000 KRW) for 04/01/05 to 03/30/06)

68. **Remote Health Monitoring and Load Monitoring of Cracked Fracture Critical Bridge Components (Subcontractor):** Pennsylvania Department of Transportation (Funded: 300,000 USD (300,000,000 KRW) for 06/01/05 to 11/30/06)

69. **Development of a Pot Bearing Monitoring System using Active Sensing (Primary Investigator):** Gift from Yooshin and ESCO Technology Corporations (Funded: 49,387 USD (49,387,000 KRW) for 05/01/05 to 04/31/06)

70. **Portable Multi-Purpose Active Sensing Development for Structural Health Monitoring (Primary Investigator):** Berkman Faculty Development Fund (Funded: 7,990 USD (7,990,000 KRW) for 01/01/05 to 12/31/05)

71. **Active Sensing Development for Infrastructure Online Monitoring (Primary Investigator):** Pennsylvania Infrastructure Technology Alliance Program (Funded: 49,980 USD (49,980,000 KRW) for 05/01/05 to 04/30/06)

72. **Developing an In Situ Leak Detection System for CO_2 and H_2 Pipelines and Storage (Co-Investigator):** Pennsylvania Infrastructure Technology Alliance Program (Funded: 49,745 USD (49,745,000 KRW) for 01/01/05 to 12/30/05)

73. **Vibration Based Structural Health Monitoring using Time Reversal Acoustics (Co-Investigator):** Air Force STTR: Rapid and Robust Dynamics-based Nondestructive Method to Monitor Structural Health (Funded: 100,000 USD (100,000,000 KRW) for 01/01/05 to 12/31/05)

74. **Sensoring System for Quantitative Health Assessment of Bonded Components in Smart Structures (LANL Primary Investigator, UCSD Primary Investigator: Francesco Lanza di Scalea):** UCSD/LANL Cooperative Agreement on Research and Education (CARE) Program (Funded: 209,000 USD (209,000,000 KRW) for 10/01/04-09/31/06)

75. **An Online Monitoring System for Amusement Park Rides (Primary Investigator):** Los Alamos National Laboratory Technology Maturation Funds (Funded: 41,000 USD (41,000,000 KRW) for 09/06/03 to 01/30/04)

76. **Structural Damage Prognosis (Co-Investigator):** Los Alamos National Laboratory Directed Research & Development Fund (Funded: 3,500,000 USD (3,500,000,000 KRW) for 10/01/01 to 09/30/04)

77. **Integrated Structural Health Monitoring (Co-authored with Dr. Charles R. Farrar at LANL, 50% effort in writing. Note that I could not be a Co-Investigator because I was a Postdoctoral Research Fellow in 2000.):** Los Alamos National Laboratory Directed Research & Development Fund (Funded: 750,000 USD (750,000,000 KRW) for 10/01/00 to 09/30/03)

78. **Various Neural Network Analyses for UTRC Data (Primary Investigator):** United Technology Research Center (Funded: 15,000 USD (15,000,000 KRW) for 09/01/00 to 11/30/00)

PROFESSIONAL SERVICES

External

Central Design Review Committee (국토부 중앙건설심의위원, 토목구조 설계심의분가위원) for Ministry of Land, Transportation, Maritimes (2012-Present) , Korea.

Korean Program Coordinator, the International Summer Camp on Smart Structures Technology. Acting as the program coordinator for this summer program where about 50 students form US, Korea, Japan and China will learn about smart structures technology in an international setting. The proposed annual year program has a rotating host nation as follows: Korea (2008 & 2013), U.S. (2009 & 2015), Japan (2010), China (2011), India

(2012), and Taiwan (2014). Acting as the Korean representative of the program and deliver lectures.

Host and Program Coordinator, US NSF Research Experiences for Undergraduates (REU) Program (URP): This REU program engages undergraduates in research related to smart structure technology. They spend 6 weeks at KAIST taking lectures and performing experiments in addition to additional 4 weeks in US. (US PIs: Juan Caicedo at University of South Carolina, Richard Christenson at University of Connecticut, and Gun Jin Yun at University of Akron)

Technical Committee Member, Structural Health Monitoring and Control Committee; ASCE Engineering Mechanics Division, June 2005 to present; Identification of Constructed Systems, ASCE-SEI Performance of Structures Track (June 1, 2006 to June 30, 2010)

Founding Member, Global Young Academy (GYA: www.globalyoungacademy.org), which was founded in February 2010 by more than 100 young scientists from 40 countries with the encouragement and support of senior scientists through the InterAcademy Panel for International Issues (IAP). The GYA will unite talented young scientists from around the world to address topics of global importance. Membership, capped at 200, will be highly competitive, involving international peer review of nominations from national academies and similar organizations. (2010-2013)

Consortium Member, the Manufacturing Technology Platform (MTP) Initiative under the Intelligent Manufacturing Systems (IMS) program, which is an international program established to create a framework for global cooperative research, assisting project consortium formation, networking people on a global basis, conducting forums to understand current and future manufacturing requirements, and disseminating information resulting from these activities (www.ims.org). The proposed action would be focused on the development of piezoelectric sensors and optical fibres for structural health assessment, the development of smart materials (e.g. sensor-integrated textiles), the development of the proper interrogating units and post processing software tools and their cost effective integration (2009-2013).

Member, International Activity Committee for the Korean Academy of Science and Technology. (2009-2013)

Design Consulting and Committee Member for Korea Electric Power Corporation (2008-2010)

Journal Reviewer, NDT&E International, AIAA Journal; IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control; IEEE Sensors Journal; Journal of Dynamic Systems, Measurement and Control; Journal of Vibration & Acoustics; Journal of Bridge Engineering; Journal of Engineering Mechanics; Journal of Computing for Civil Engineering; Earthquake Engineering & Structural Dynamics; International Journal of Structural Health Monitoring; Journal of Aerospace Engineering; Journal of Structural Control and Health Monitoring; Journal of Intelligent Material Systems and Structures; Journal of Structural Control; Mechanical Systems and Signal Processing; Smart Materials and Structures; Journal of Structural Engineering and Mechanics; Journal of Structural Engineering; Journal of Nondestructive Evaluation; Philosophical Transaction of Royal Society; Journal of Sound and Vibration; Computer Aided Civil and Infrastructure Engineering; Research in Nondestructive Evaluation; Korea Society of Civil Engineers; Earthquake Engineering Society of Korea; Korean Society of Nondestructive Testing; Measurement Science and Technology; and Smart Structures and Systems.

Proposal Reviewer, NSF Proposals on Sensors and Sensor Network for CMS Division (Point of Contact: Dr. Shih-Chi Liu); NSF Structural Systems and Hazards Mitigation of Structures for CMS Division Point of Contact: Dr. Douglas Foutch); U.S. Air Force Office of Scientific Research Proposal (Point of Contact: Dr. Dean T. Mook); Los Alamos Accelerated Strategic Computing Initiative Proposal; and Los Alamos Laboratory Directed Research and Development Proposal, NASA Postdoctoral Program.

Award Selection Committee, the SHM Lifetime Achievement and Person of Year Awards for the International Workshop on Structural Health Monitoring (2003-present).

US Delegate, the NSF sponsored US-Korean Workshop on Smart Structures, August 23-24, 2002 and September 1-4, 2004; the second NSF sponsored ANCRiSST Workshop on Advanced Smart Materials and

Smart Structures Technology, Gyeonju, Korea, July 21-24, 2005; the NSF sponsored US-China Workshop on Smart Structure Technologies, Shenzhen, China, November 16-18, 2005; the NSF sponsored 4th US-China-Japan Symposium on Structural Control and Monitoring, Hangzhou, China, October 16-17, 2006 (Panelist for Young Researchers Forum); the NSF sponsored US-Korea Workshop on Smart Structures Technology for Steel Structures, Seoul, Korea, November 16-17, 2006; NSF sponsored US-China Collaboration for Disaster Evolution and Resilience of Civil Infrastructure and Urban Environment, Tongji University, China, Dec. 9-10, 2011.

Internal

Associate Department Head, for the CEE Department, KAIST, Daejeon, South Korea. I have been formally and/or informally acting as the Associate Department Head (the part of 2009 and 2010).

Program Coordinator, KAIST-CMU Dual Degree Program, KAIST, Daejeon, South Korea. Took a leading role to establish the cooperative research/educational agreement and dual-degree program between KAIST and CMU, and acting as the program's primary contact. (2007-2010)

Chair and Member, the External Advisory Committee (EAC) Meeting Preparation Committee, CEE, KAIST, Daejeon, South Korea (2008, 2010).

Educational Committee, the EEWS (Energy, Environment, Water and Sustainability) Program, KAIST, Daejeon, South Korea. (2008-2010)

Undergraduate and Graduate Student Selection Committee, KAIST, Daejeon, South Korea. (2007-2011)

Ph.D. Qualifying Examination Committee, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA. (2004-2007)

CEE Computing Committee, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA. (2004-2006)

Faculty Search Committee, Department of Civil and Environmental Engineering, Carnegie Mellon Univers Pittsburgh, PA. (2005,2006)

Advanced Infrastructure System Laboratory Coordinator, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA. (2005-2006)

Chi Epsilon Faculty Advisor, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA. (2006)

Postdoctoral Search Committee, Los Alamos National Laboratory (08/30/03-08/30/06) and ESA Division Representative on Postdoctoral search committee.

JOURNAL EDITORIAL SERVICES

Editorial Board Member, KSCE, Journal of Civil Engineering (2013-present)

Editorial Board Member, Advances in Structural Engineering (2013-present)

Editorial Board Member, Structural Control and Health Monitoring (2011-present)

Associate Editor, ASCE, Journal of Bridge Engineering (2010-2012)

Associate Editor, ASCE, Journal of Computing in Civil Engineering (2008-2012)

Associate Editor, An International Journal of Structural Health Monitoring (2004-present)

Editorial Board Member, An International Journal of Smart Structures and Systems (2004-present)

Board Member, Korean Society of Nondestructive Testing (2010- Present)

PROFESSIONAL AFFILIATIONS

Member, American Society of Mechanical Engineers, (2013-Present)

Member, American Society of Civil Engineers, (2004-Present)

Member, Korean Society of Civil Engineers (2008-Present)

Member, International Institute of Acoustic and Vibration (2008-Present)

Senior Member, SPIE (International Society for Optics and Photonics) (2007-Present)

Member, Korean Society of Building Information Modeling (2011-Present)

Member, Korean Society of Nondestructive Testing (2009-Present)

Associate Member, Korean Academy of Science and Technology (2009-Present)

JOURNAL & CONFERENCE RELATED SERVICES

Special Issue Editor, (1) a special issue on Structural Health Monitoring: Use of Guided Waves and/or Nonlinear Acoustic Techniques, Optical Engineering, 2015, (2) a special issue on Advances in Monitoring-Based Structural Identification and Damage Detection and Condition Assessment, International Journal of Structural Stability and Dynamics, Vol. 14, 2014, (3) a special issue on Advances in monitoring based structural identification, damage detection and condition assessment, International Journal of Structural Stability and Dynamics, Vol. 14, 2014, (4) a special issue on innovations in structural identification and condition assessment, Smart Structures and Systems, 2014, (5) a special issue on noncontact measurement technology for structural health monitoring, International Journal of Structural Health Monitoring, 2012-2013, (6) a special issue on an SHM project for a composite UAV wing, Structural Control and Health Monitoring, 2012-2013.

Mini-Symposium Organizer, (1) organized a mini- symposium entitled "ICT Bridge Technology for Life-span Extension and Carbon Emission Mitigation", as part of the 2015 World Congress on Advances in Structural Engineering and Mechanics (ASEM15), Incheon, Korea, August 25-29, 2015; (2) organized a mini-symposium entitled “Non-conventional sensing techniques for civil infrastructure system monitoring” with Profs. Ying Lei at Xiameng University, Tinghua Yi at Dalian University of Technology as part of the 7th International Conference on Structural Health Monitoring on Intelligent Infrastructure, Turin, July 1-3, 2015; (3) organized a mini-symposium entitled “Advances in Structural Identification and Condition Assessment” with Profs. Ying Lei at Xiameng University, Tinghua Yi at Dalian University of Technology as part of the 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Hong Kong, December 9-11, 2013; (4) organized a Global Policies for Infrastructure Monitoring and Management Workshop with Prof. Shirley Dyke, Douglas Adams at Purdue University, August 16-17, 2012; (5) organized a mini-symposium entitled “Smart SHM and Application to Bridge Condition Assessment and Maintenance” with Profs. Yunfeng Zhang at University of Maryland, Chunsheng Wang at Chang’an University, Daniele Zonta at University of Trento as part of the 6th International Conference on Bridge Maintenance, Safety and Management, Lake Como, Italy, July 8-12, 2012; (6) organized a mini-symposium entitled “PZT sensor based guided wave and impedance techniques for SHM” with Prof. Yongrae Roh at Kyungbook National University as part of the 2011 World Congress on Advances in Structural Engineering and Mechanics (ASEM11 Plus), Seoul, Korea, September 18-23, 2011.

Program Committee, the SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems (6174) and on Health Monitoring and Smart NDE of Structural and Biological Systems (6177) (2005-present).

Organizing Committee, International Workshop on Structural Health Monitoring, Stanford, CA (2009-Present)

International Organizing Committee, the 4th Asia-Pacific Workshop on Structural Health Monitoring, Melbourne, Australia, December 5-7, 2012.

International Advisory Board, (1) CIMTEC Symposium G "Emboding Intelligence in Structures and Integrated Systesm-II, Italy, 2012.

Co-Organizer, the US-Korea Workshop on Bio and Bio-Inspired Smart Structures, Jeju, South Korea, May 23-25, 2008.

International Scientific Committee, (1) the 9th International Conference on Motion and Vibration Control (MOVIC 2008), the Technical University of Munich in Garching/Munich, Germany, 16-18 September 2008, (2) the 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure (SHMII-6 2013), Hong Kong, December 9-11, 2013, (3) the 6th World Conference on Structural Control and Monitoring, Barcelona, Spain, July 15-17, 2014, (4) the 7th International Conference on Structural Health Monitoring on Intelligent Infrastructure (SHMII-7), Turin, July 1-3, 2015, (5) the 4th International Summer School on Smart Materials and Structures, Ternto, July 6-9, 2015.

Technical Chair, ASCE International Workshop on Computing in Civil Engineering, Carnegie Mellon University, Pittsburgh, PA, July 25-28, 2007.

Co-Chair, the 20th KKCNN Symposium on Civil Engineering, Jeju, South Korea, October 4-5, 2007.

Special Session Organizer and Chair, International Conference on Advances in Structural Engineering and Mechanics (2002, 2004); International Modal Analysis Conference (2003, 2005, 2006); International Workshop on Advanced Smart Materials and Smart Structures Technology (2004); Civil and Environmental Engineering Symposium of US-Korea Conference (2007); International Workshop on Structural Health Monitoring (2003, 2005, 2007, 2011); European Workshop on Structural Health Monitoring (2008, 2010, 2012); International Federation of Automatic Control (IFAC) World Congress (2008); International Conference on Bridge Maintenance, Safety and Management (2008, 2010, 2012); International Congress on Sound and Vibration (2008); SPIE Smart Structures and Materials, and Nondestructive Evaluation and Health Monitoring (2004-Present); KKCNN Symposium (2007-Present); International Conference on Smart Structures and Systems (2011); ASCE Engineering Mechanics Institute Conference (2011); Korean Society of Nondestructive Testing Conference (2010-present); Asian-Pacific Workshop on Structural Health Monitoring (2010, 2012); International Conference on Computational Design in Engineering (2012); World Conference on Structural Control and Monitoring (2014); International Conference on Structural Health Monitoring on Intelligent Infrastructure (2015); World Congress on Advances in Structural Engineering and Mechanics (2015).

PROFESSIONAL MEETINGS

1. NSF sponsored US-China Collaboration for Disaster Evolution and Resilience of Civil Infrastructure and Urban Environment, Tongji University, China, Dec. 9-10, 2011. **(Invited Panelist)**

2. NSF sponsored US-Korea Workshop on Multi-scale Mechanics and Multi-functional Materials for Smart Sensing and Actuation, Jeju, Korea, May 30 – June 3, 2010.

3. Korea-China-Japan Workshop for Young Researchers as part of Korea, China, Japan Trilateral Summit attended by South Korean President Myung Bak Lee, Chinese Premier Wen Jiabao and Japanese Prime Minister Yukio Hatoyama, Jeju,

Korea, May 29-30, 2010. **(Invited Young Scientist)**

4. NSF sponsored US-Taiwan Workshop on Bio-inspired Sensing and Bio-inspired Actuation, Taipei, Taiwan, April 14-17, 2009.

5. The Workshop for Founding National Young Academics and the Global Young Scientists Academy, Berlin, Germany, February 14-16, 2010. **(Invited Young Scientist)**

6. The World Economic Forum's "Annual Meeting of the New Champions 2009," Dalian, China, September 10-13, 2009. **(Invited Panelist and Invited Young Scientist)**

7. NSF sponsored US-Korea Workshop on Bio and Bio-Inspired Smart Structures, Jeju, Korea, May 23 – 25, 2008.

8. NSF sponsored Bridge Condition Monitoring and Prognostication Workshop, Minneapolis, MN, November 20-21, 2008. (**Invited Keynote Presentation**)

9. NSF sponsored US-Korea Workshop on Smart Structures Technology for Steel Structures, Seoul, Korea, November 16-18, 2006. **(Invited Keynote Presentation)**

10. NSF sponsored US-China-Japan Symposium on Structural Control and Monitoring, Hangzhou, China, October 16-17, 2006. **(Invited Panelist for a Young Research Forum)**

11. NSF Sponsored the US-Taiwan Workshop on Smart Structural Technology for Seismic Hazard Mitigation (SST/SHM), Taipei, Taiwan, October 12-14, 2006.

12. NSF sponsored US-China Workshop on Smart Structure Technologies, Shenzhen, China, November 16-18, 2005.

13. NSF sponsored US-Korea Workshop on Smart Structure Technologies, Seoul, Korea, September 2-4, 2004.

14. Expert round table discussion on "*Evaluating Bridge Reliability following Natural and Man-made Hazards in Real-Time*" sponsored by NSF and US Department of Transportation during International Conference on Bridge Maintenance, Safety, and Management (IABMSA'04), Kyoto, Japan, October 18-22, 2004.

NEWS COVERAGES

Featured in 한국경제신문 "태양광 충전 스마트 센서로 건물 균열징후 실시간 감지," 06/11/2015 (http://www.hankyung.com/news/app/newsview.php?aid=2015061168851)

Appeared in "KOREA TODAY – New wave of disaster prevention sensors" – Arirang TV, 06/17/2014 (http://www.arirang.co.kr/Tv2/KToday_Archive.asp?PROG_CODE=TVCR0635&view_seq=12193&Page=21&sys_lang=Kor)

Featured in a Digital Times about "Instantaneous crack inspection technique of semiconductor chips" ("스마트 스캐닝 기술 응용, 고정밀 실시간 감지기술 개발," 2013) (http://www.dt.co.kr/contents.html?article_no=2013121202011676650007)

Featured in a METRIC (Mechanical Engineering & Technology Research Information Center) webzine interview entitled for "Structural health monitoring using smart technology" (기계공학연구정보센터 "스마트 기술을 이용한 구조물 안전진단," 2013) (http://www.metric.or.kr/community/mterview/mterview/content.asp?f_id=63)

Featured in a Donga Newspaper as one of the 100 Most Promising People in Korea (동아일보 "10 년뒤 한국을 빛낼 100 인," 2012) (http://www.donga.com/news/100people/2012/index.html)

Featured in a KBS TV program called “Scout” (broadcast on Feb. 22, 2012)

Featured in “InFocus” Magazine for an article entitled “Laser ultrasonic scanning for structural damage diagnosis,” 2012 (http://www.ipn.mx/MX/Revistas/Polytec/PDF/ISSUES/Polytec%20InFocus%202011-2.pdf)

Featured in the Star Ledger Newspaper for testing of New Jersy Rt23 Wayne Bridge, USA, June, 2011 (http://www.nj.com/news/index.ssf/2011/06/wayne_bride_to_be_used_in_inte.html)

Featured in a MBN TV documentary program called “Korean Scientist” (www.youtube.com/watch?v=5IsSUywuoAw)

Invited for Korea, China, Japan Workshop for Young Researchers that was organized as part of Korea-China-Japan Summit held in Jeju, Korea, May 29-30. Korean President Lee Myung-Bak, his Chinese counterpart Premier Wen Jiabao, and Japanese counterpart Yukio Hatoyama also attended the workshop (05/30/2010).

Acted as the host for the 2010 “Science Day” ceremony held at National Science Museum on Science Day, Over 600 VIPs including Korean Prime Minister Won Chan Jung attended this ceremony (04/21/2010).

Featured in KAISTAR Newsletter Vol. 74 (03/22/2010):
http://kaistar.e-eyagi.com/Jinny_Board/Board/chk_content.asp?idx=12&table=sandt_board&page=1&search=&searchstring=

I was selected to give the closing remark for the New Year’s Ceremony of the Korean Federation of Science and Technology Societies (과학기술인 신년인사회) in front of Korean President Myung Bak Lee (01/08/2010)

Coverage of our funded research project from Boeing, Korea daily newspaper “Han Kook Il Bo” (07/10/2009): http://news.hankooki.com/lpage/people/200907/h2009071003360584800.htm

One of the columnists for “Life and Culture” for Korea daily newspaper “Han Kook” Daily Newspaper (01-03, 2009): http://news.hankooki.com/lpage/opinion/200901/h2009010802495997860.htm

The youngest tenure grantee at KAIST: Since the implementation of a new strict tenure system at KAIST in 2007, I became the youngest tenured faculty at KAIST, Korea daily newspaper “Maeil Business” (03/21/2008) http://news.mk.co.kr/outside/view.php?year=2008&no=158713

Young Scientists Award (2007) – Korea daily newspaper “Joong Ang Il Bo” (02/05/2008)
http://article.joinsmsn.com/news/article/article.asp?Total_ID=3033498

The establishment of the dual-degree program between KAIST-Carnegie Mellon University – Korea daily newspaper “The Korea Economic Daily” (10.full05.2007)
http://www.hankyung.com/news/app/newsview.php?aid=2007100457531

Appeared in an special issue for President Nam Pyo Suh at KAIST – KBS Science Café 2008 (06/14/2008)
http://www.kbs.co.kr/1tv/sisa/science/

Displayed in the National Science Center (Scientorium:국립과천과학관), Kwa-Cheon, Korea, 2008.

CONTINUOUS EDUCATION AND CERTIFICATIONS

Certification of Completion, Sandia MicroElectroMechanical Systems (MEMS) Introductory Short Course, Sandia National Laboratory, NM, June 25-27, 2001.

Certification of Completion, Sandia MicroElectroMechanical Systems (MEMS) Advanced Design Short Course, Sandia National Laboratory, NM, August 25-15, 2001.

Certification of Completion, Sandia MicroElectroMechanical Systems (MEMS) Reliability Short Course, Sandia National Laboratory, NM, November 6-8, 2001.

Certification of Completion, dSPACE Systems and Target Link Training, dSPACE Corporation, Detroit, MI, March 14-16, 2001.

Completed "EE245: Introduction to MEMS Design" at University of California, Berkeley through a distance-learning program called National Technological University (Grade A^-), Spring Semester, 2001.

Completed "EE101: Introduction to Circuit" at Stanford University (Grade A) through Stanford Center for Professional Development, Spring Semester, 2001.

CONFERENCE PROCEEDINGS

* The corresponding author is underlined.

1. Byeongjin Park, **Hoon Sohn**, "Reconstruction of Laser Ultrasonic Wavefield Images from Reduced Sparse Measurements using Compressed Sensing Aided Super-resolution," 43rd Review of Progress in Quantitative Nondestructive Evaluation, Atlanta, US, July 16-22, 2016.

2. Byeongjin Park, **Hoon Sohn**, Peipei Liu, "Accelerated Laser Ultrasonic Scanning using Binary Search," The 8th European Workshop on Structural Health Monitoring, Bilbao, Spain, July 5-8, 2016.

3. Jed A. Guinto, L.R. Francis Rose, Philippe Blanloeuil, Martin Veidt, Wing-Kong Chiu, **Hoon Sohn**, Chun H. Wang, "Baseline-free characterization of a delamination using nonlinear vibro-acoutic modulation," *European Workshop on Structural Health Monitoring*, Bilbao, Spain, July 5-8, 2016.

4. **Hoon Sohn**, "Self-sufficient and self-contained sensing for local monitoring of in-site bridge structures," *European Workshop on Structural Health Monitoring*, Bilbao, Spain, July 5-8, 2016 **(Invited keynote lecture)**.

5. Seunghwan Jung, **Hoon Sohn**, Minseok Han, Gyunghak Lee, "Fusion wireless power transmission system for structural health monitoring sensors," *IABMAS2016 Conference – 8th International Conference on Bridge Maintenance, Safety and Management*, Foz do iguacu, Brazil, June 26-30, 2016.

6. Jun Lee, Jimin Kim, **Hoon Sohn**, "Detection of tensile force loss in a pre-stressing strand using coil impedance measurement", International Conference on Smart Infrastructure and Construction, Robinson College, Cambridge, 27-29 June 2016.

7. Hoon Sohn, Hyung Jin Lim, Su Young Yang, Ji Min Kim, Jun Lee, Sang Min Lee, Yong Tak Kim, "Embodying self-inspection and monitoring intelligence into structural systems," *CIMTEC*, Perugia, Italy, June 5-9, 2016.

8. **Hoon Sohn**, "Self-sufficient and self-contained sensing for local monitoring of in-situ bridge structures," EWSHM, Bilbao, Spain, July 5-8, 2016 **(Invited keynote presentation)**.

9. **Hoon Sohn**, "Making transition from SHM and NDT research to commercialization," *CIMTEC 2016*, Perugia, Italy, June 5-9, 2016. (**Invited Lecture**)

10. Nazirah Ab.Wahab, Peipei Liu, **Hoon Sohn**, "Finite element modeling of ultrasonic wave propagation induced by a pulse laser," COSEIK, Daejeon, Republic of Korea, April 13-15, 2016.

11. Peipei Liu, Timotius Yonathan Sunarsa and **Hoon Sohn**, "Damage visualization using synchronized noncontact laser ultrasonic scanning," SPIE Smart Structures/NDE, Las Vegas, US, March 20-24, 2016

12. Suyoung Yang, Jaehyun Han, Keonjae Lee, **Hoon Sohn**, "Design of a hybrid-type vibration energy harvester for low-frequency vibration," SPIE Smart Structures/NDE, Las Vegas, US, March 20-24, 2016

13. Gunhee Koo, Jaemook Choi, Kiyoung Kim, **Hoon Sohn**," A Fire-Induced Displacement Estimation Method for Civil Infrastructures," SUPDET, Texas, US, March 01-04, 2016

14. Jaemook Choi, Gunhee Koo, Kiyoung Kim, **Hoon Sohn**, "A Displacement Estimation Method based on Data Fusion of Velocity and Acceleration for Safety Assessment of Structure under Fire", KOSHAM Conference, Seoul, Republic of Korea, Febrary 18~19, 2016

15. Ji-Min Kim, Jun Lee and **Hoon Sohn**, "Tensile force loss warning of a pre-stressing strand using eddy current technique," KIBSE, Uiwang, Republic of Korea, November 13, 2015.

16. Suyoung Yang, **Hoon Sohn**, "Development fo a two degrees-of-freedom vibration energy harvester for a bridge health monitoring sensor," KIBSE, Uiwang, Republic of Korea, November 13, 2015.

17. Min-Koo Kim, Seong Heum Yoon, Qian Wang and **Hoon Sohn**, "Mirror-based scanning system for side surface dimension inspection of precast concrete elements," KIBSE, Uiwang, Republic of Korea, November 13, 2015.

18. Seung Hwan Jung, Kyung Hak Lee, Min Seok Han, **Hoon Sohn** and Jun Lee, "RF based 915MHz Tx, Rx design to utilize the fusion wireless power transmission system for structural health monitoring system," KIBSE, Uiwang, Republic of Korea, November 13, 2015.

19. Gunhee Koo, Kiyoung Kim, Jaemook Choi and Hoon Sohn, "Estimatino of dynamic displacement via data fusion of an accelerometer and a displacement sensor," KIBSE, Uiwang, RepuPblic of Korea, November 13, 2015.

20. Jae mook Choi, Soon kyu Hwang, Jin yeol Yang and **Hoon Sohn**, "Baseline-free and Automated Micro-Crack Evaluation using Laser Scanning Thermography", The Twenty-Eight KKHTCNN Symposium on Civil Engineering, Bangkok, Thailand, November 16-18, 2015

21. Byeongjin Park, Dongkyu Kim, Hoon Sohn, Kihwan Park, "Development of a noncontact laser ultrasonic system for in-situ inspection of wind turbine blades," Composites Seoul 2015, Seoul, Korea, October 21-23, 2015.

22. **Hoon Sohn**, Hyung Jin Lim, Byeongjin Park, Peipei Liu, Byeongju Song, Yongtak Kim, "Nonlinear ultrasonic modulation for damage detection," *International Conference Vibroengineering 2015*, Nanjing, China, September 26-28, 2015. (**Invited Keynote Presentation**)

23. Ji-Min Kim, Minseok Han, **Hoon Sohn**, "Wireless power transmission through steel-reinforced concrete using magnetic resonance," *IABSE Conference – Structural Engineering: Providing Solutions to Global Challenges*, Geneva, Switzerland, September 23-25, 2015.

24. Ji-Min Kim, Jun Lee and **Hoon Sohn**, "Detection of tensile force relaxation through eddy current measurement of a pre-stressing strand," *The 2015 World Congress on Advances in Structural Engineering and Mechanics: ASEM 2015*, Songdo Convensia, Incheon, Korea, August 25-29, 2015.

25. Soonkyu Hwang, Jaemook Choi, Jinyeol Yang, **Hoon Sohn**, "Multi-spot laser scanning thermography for delamination inspection in CFRP/GFRP structure," *6th International Conference on Advances in Experimental Structural Engineering and 11th International Workshop on Advanced Smart Materials and Smart Structures Technology*, Urbana-Champaign, US, August 1-2, 2015.

26. Peipei Liu, Nazirah Ab.Wahab, **Hoon Sohn**, "Numerical and experimental analyses of pulse laser-generated ultrasound," *CANSMART 2015: International Conference on Smart Materials and Structures, SMN*

2015: 5th International Conference on Smart Materials and Nanotechnology in Engineering, Vancouver, Canada, July 15-17, 2015.

27. Qian Wang, Minkoo Kim, **Hoon Sohn**, J.C.P. Cheng, "Surface Flatness and Distortion Measurement of Precast Concrete Elements Using Laser Scanning Technology," 7th international conference on structural health monitoring of intelligent infrastructure, Torino, Italy, July 1-3, 2015.

28. Hyung Jin Lim, **Hoon Sohn**, "Fatigue crack detection based on change of linear ultra-sonic features caused by structural nonlinearity," *The 20th International Symposium on Nonlinear Acoustics*, Lyon, France, June 29-July 3, 2015.

29. Seunghwan Jung, Minseok Han, Kyunghak Lee, **Hoon Sohn**, "RF based 915MHz power amplifier design to utilize the wireless power transmission system for structure health monitoring sensor," *The Korean Institute of Communications and Information Sciences*, Jeju, Korea, June 24-26, 2015.

30. Qian Wang, Jack C. P. Cheng, and **Hoon Sohn**, "Automated Quality Inspection Of Precast Concrete Elements With Irregular Shapes Using Terrestrial Laser Scanner And BIM Technology," *ISARC 2015 Symposium*, Oulu, Finland, June 15-18, 2015.

31. Minkoo Kim, **Hoon Sohn**, "Quality Assessment of Precast Concrete Elements using 3D Laser Scanning and BIM," KIBIM conference 2015, Seoul, Korea, May 29, 2015.

32. Seongwoon Jeong, Jaewook Byun, Daeyoung Kim, In Hwan Bae, **Hoon Sohn**, Kincho H. Law, "A data management infrastructure for bridge monitoring," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics*, San Diego, CA, March 8-12, 2015.

33. Peipei Liu, **Hoon Sohn**, "Fatigue crack visualization using noncontact laser ultrasonics and state space geometrical changes," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics*, San Diego, CA, March 8-12, 2015.

34. Byeongju Song, Byeognjin Park, **Hoon Sohn**, "Detection and localization of fatigue crack on a rotating steel shaft using air-coupled nonlinear ultrasonic modulation," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics*, San Diego, CA, March 8-12, 2015.

35. Minseok Han, Ji-Min Kim, and **Hoon Sohn**, "Optimization of Magnetic Resonance Wireless Power Transfer System in Concrete Structures," *The 2014 Korea-Japan Microwave Workshop (KJMW2014)*, JSBC, Suwon, Korea, December 4-5, 2014.

36. **Hoon Sohn**, "Real world examples of true added values provided by SHM and NDT technology," *Asian Pacific Workshop on Structural Health Monitoring,* Shenzhen, China, November 4-5, 2014. **(Invited keynote presentation)**

37. Peipei Liu, Hyung Jin Lim, Suyoung Yang, **Hoon Sohn**, Hyung Chul Park, Yung Yi, Dong Sam Ha, "Development of an active wireless sensor node for fatigue crack detection using nonlinear wave modulation," *The 2nd International Conference on Structural Health Monitoring and Integrity Management*, Nanjing, China, September 24-26, 2014.

38. Seung Hwan Jung, Min Suk Han, **Hoon Sohn**, "RF based wireless power transmission system for structural health monitoring sensors," *The Korean Institute of Communications and Information Sciences*, Jeju, Korea, June 19-21, 2014.

39. **Hoon Sohn**, "Transition from contact to noncontact sensing for structural health monitoring," *The 6th World Conference on Structural Control and Monitoring*, Barcelona, Spain, July 15-17, 2014. **(Invited plenary keynote presentation)**

40. Kiyoung Kim, **Hoon Sohn**, "Dynamic displacement estimation based on two-stage Kalman filter and multi-rate data fusion," *The 6th World Conference on Structural Control and Monitoring*, Barcelona, Spain, July 15-17, 2014.

41. Byeongjin Park, **Hoon Sohn**, "Instantaneous damage identification and localization through sparse laser ultrasonic scanning," *The 7th European Workshop on Structural Health Monitoring*, Nantes, France, July 8-11, 2014.

42. Byeongjin Park, **Hoon Sohn**, Pawel Malinowski, Wieslaw Ostachowics "Damage detection in composites by noncontact laser ultrasonics," *The 7th European Workshop on Structural Health Monitoring*, Nantes, France, July 8-11, 2014

43. **Hoon Sohn**, "Noncontact laser sensing technology for structural health monitoring and nondestructive testing," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostic*s, San Diego, CA, March 9-13, 2014. **(Plenary Keynote Presentation)**

44. Hyung Jin Lim, **Hoon Sohn**, Peipei Liu, "Noncontact visualization of nonlinear ultrasonic modulation for reference-free fatigue crack detection," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 9-13, 2014.

45. Peipei Liu, Suyoung Yang, Hyung Jin Lim, Hyung Chul Park, In Chang Ko, and **Hoon Sohn**, "Development of a wireless nonlinear wave modulation spectroscopy (NWMS) sensor node for fatigue crack detection," SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics, San Diego, CA, March 9-13, 2014.

46. Jinyeol Yang, Suyoung Yang, Hyeonseok Lee, **Hoon Sohn**, "Wireless impedance-based pipe corrosion monitoring using MFC transducers under temperature variations," *The 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Hong Kong, Hong Kong, December 9-11, 2013. (**Invited paper**)

47. Kiyoung Kim, Junhee Kim, **Hoon Sohn**, "Real-time displacement estimation technique using Kalam Filter based data fusion of LDV and LiDAR," *The 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Hong Kong, Hong Kong, December 9-11, 2013.

48. Peipei Liu, **Hoon Sohn**, Tribikram Kundu, "Noncontact fatigue crack detection using nonlinear wave modulation spectroscopy (NWMS)," *The 166th Acoustical Society of America meeting*, San Francisco, CA, December 2-6, 2013 (**Invited Paper**).

49. Hyeonseok Lee and **Hoon Sohn**, "Baseline-free pipeline monitoring using laser-based mechanical impedance measurement," The 26th KKHTCNN Symposium on Civil Engineering, Singapore, November 18-20, 2013 (**KKHTCNN Young Researcher Award Paper**).

50. Yun-Kyu An, Ji Min Kim and **Hoon Sohn**, "Laser Lock-in Thermography for Damage Detection in a Substructure of Railway Vehicle," *Korean Society for Precision Engineering Symposium 2013*, Pusan, Korea, October 30 - November 01, 2013.

51. Hyung Jin Lim**,** **Hoon Sohn**, Martin P. DeSimio, Kevin Brown, Mark Derriso "Reference-free Fatigue Crack Detection using Nonlinear Wave Modulation," *The 9th International Workshop on Structural Health Monitoring*, Stanford, CA, September 10-12, 2013.

52. Sungmin Kim, Douglas E. Adams**,** **Hoon Sohn**, Gustavo Rodriguez-Rivera, Jan Vitek, and Scott Carr, Ananth Grama "Validation of vibro-acoustic modulation of wind turbine blades for structural health monitoring using operational vibration as a pumping signal," *The 9th International Workshop on Structural Health*

Monitoring, Stanford, CA, September 10-12, 2013.

53. M.K. Kim, D. Wu, J.C.P. Cheng, **H. Sohn**, C.C. Chang, "Formulation of a framework for quality assessment of precast concrete based on 3D laser scanner," *The 30th International Symposium on Automation and Robotics in Construction and Mining (ISARC)*, Montreal, Canada, August 11-15, 2013.

54. Yun-Kyu An and **Hoon Sohn**, "Wireless Ultrasonic Wavefield Imaging via Laser for Reference-free Damage Detection in an in-situ Bridge," *UKC 2013*, New Jersey, USA, August 7-10, 2013.

55. Ji Min Kim, Yun-Kyu An and **Hoon Sohn**, "Laser Lock-in Thermography for Crack Evaluation in a T-shape Welded Joint," *2013 Conference of the ASCE Engineering Mechanics Institute (EMI 2013)*, Northwestern University, Evanston, IL, USA, August 4-7, 2013.

56. **Hoon Sohn** and Yun-Kyu An, "Various Monitoring and Nondestructive Testing Applications: From Micro-scale to Large-scale Structures," *The 9th International Workshop on Advanced Smart Materials and Smart Structures Technology (ANCRiSST 2013),* UNIST, Korea, July 18-21, 2013. **(Keynote)**

57. Min Koo Kim, **Hoon Sohn**, Chih-Chen Chang, "Active dimensional quality assessment of precast concrete using 3D laser scanner," 2013 ASCE International Workshop on Computing in Civil Engineering, University of Southern California, Los Angeles, CA, USA, 23-25 June, 2013.

58. Hyeon Seok Lee, **Hoon Sohn**, "Noncontact damage detection using laser based mechanical impedance measurement," Review of progress in Quantitative Nondestructive Evaluation (QNDE), Baltimore, Maryland, July 21-26, 2013.

59. Yun-Kyu An**,** **Hoon Sohn,** "Non-propagating Lamb mode extraction for reference-free crack detection," 11th International Conference on Structural Safety and Reliability (ICOSSAR), New York City, NY, June 16-20, 2013.

60. Yun-Kyu An and **Hoon Sohn**, "Laser Ultrasonic Wavefield Imaging for Baseline-free Crack Detection in Plates with Structural Complexities," *International Conference on Computational and Experimental Engineering and Sciences (ICCES' 13)*, Seattle, USA, May 24-28, 2013.

61. **Hoon Sohn**, Hyung Jin Lim, Martin P. DeSimio, Kevin Brown, Mark Derriso, "Fatigue Crack Detection using Guided Waves Nonlinear Modulation," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 10-14, 2013.

62. Sungmin Kim, Douglas Adams, **Hoon Sohn**, "Crack detection on wind turbine blade in an operating environment using vibro-acoustic modulation technique," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 10-14, 2013.

63. Yun-Kyu An**,** Ji Min Kim, **Hoon Sohn,** "Laser lock-in thermography for fatigue crack detection in an uncoated metallic structure," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 10-14, 2013.

64. Yun-Kyu An**,** Ji Min Kim, **Hoon Sohn,** "Laser lock-in thermography for fatigue crack detection," *APWSHM, Asian-Pacific Workshop on Structural Health Monitoring*, Melbourne, Australia, December 5-7, 2012.

65. Junhee Kim, Kiyoung Kim, **Hoon Sohn**, "A new formulation of multi-rate Kalman filtering for heterogenous acceleration and displacement data fusion," *2nd International Conference on Computational Design in Engineering*, Jeju, Korea, November 13-16, 2012.

66. Min Koo Kim, **Hoon Sohn** and Chih-Chen Chang, "Contactless damage detection of concrete surface from

3D laser scanner," *1st International Conference on Performance-based and Life-cycle Structure Engineering*, Hong Kong, Hong Kong, December 5-7, 2012.

67. Homin Song, Hyung Jin Lim, **Hoon Sohn**, "Development of a dual PZT based electromechanical impedance measurement technique for structural health monitoring," *The 38th Korea Society of Civil Engineers Annual Conference*, Gwangju, South Korea, October 24-26, 2012. **(Won the excellent paper award)**

68. Hyeon Seok Lee, Hyun Woo Park, **Hoon Sohn** "Defect visualization in pipes using a longitudinal guided wave mode," *164th Acoustical Society of America*, Kansas City, Missouri, USA , Oct 22-26, 2012.

69. Min Koo Kim**,** **Hoon Sohn,** Chihchen Chang, "3D laser scanner based dimensional quality control of precast concrete," *the 25th KKCNN Symposium on Civil Engineering*, Busan, Korea, October 22-24, 2012.

70. Yun-Kyu An, Ji Min Kim, **Hoon Sohn**, "Surface-breaking fatigue crack evaluation using laser scanned thermography," *International Symposium on Speed-up, Safety and Service Technology for Railway and Maglev Systems*, Seoul, Korea, September 17-19, 2012.

71. Junhee Kim and **Hoon Sohn**, "Multi-rate Kalman filtering for heterogenoues data fusion of acceleration and displacement measurements," *The 7th Annual Workshop of the Asian-Pacific Network of Centers for Research in Smart Structure Technology (ANCRiSST)*, Bangalore, India, July 27-28, 2012.

72. Sungmin Kim, Douglas E. Adams and **Hoon Sohn**, "Crack detection on wind turbine blades in an operating environment using vibro-acoustic modulation technique," *The 39th Annual Review of Progress in Quantitative Nondestructive Evaluation*, Denver, Colorado, USA, July 15-20, 2012.

73. Yun-Kyu An**,** Hyun Jun Park, Ho Min Song, **Hoon Sohn**, Chung-Bang Yun "Remote guided wave imaging using wireless PZT excitation and laser Vibrometer scanning for local bridge monitoring," *the 6th International Conference on Bridge Maintenance, Safety and Management, Lake Como, Italy*, July 8-12, 2012.

74. Hyung Jin Lim, Homin Song and **Hoon Sohn**, "Development of dual PZT based impedance measurement techniques for large-scale structures," *the 6th European Workshop on Structural Health Monitoring,* Dresden, Germany, July 3-6, 2012.

75. **Hoon Sohn**, Yun Kyu An, Byeong Jin Park, Troung Thanh Chung, Chul Min Yeum, Jin Yeol Yang, Hyeon Seok Lee, "Laser ultrasonic techniques for structural health applications," *CIMTEC 4th International Conference on Smart Materials, Structures and Systems, Tuscany, Italy,* June 10-15, 2012. **(Invited paper)**

76. Hyeonseok Lee, Jinyeol Yang, **Hoon Sohn**, Hyun Woo Park, "Imaging of pipeline defects based on waveguides," *Asian-Pacific Symposium on Structural Reliability and its Applications,* Singapore, May 23-25, 2012.

77. Min Koo Kim and **Hoon Sohn**, "3D laser scanner based precast concrete quality control for accelerated bridge construction," KBIM conference, Seoul Korea, May 19, 2012.

78. **Hoon Sohn**, "Laser based structural health monitoring for civil, mechanical and aerospace systems," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 11-15, 2012. **(Keynote Presentation)**

79. Byeongjin Park, Truong Thanh Chung, Chul Min Yeum, **Hoon Sohn**, "Laser ultrasonic Imaging of a rotating blade," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 11-15, 2012.

80. Hyeonseok Lee, Hyun Woo Park, **Hoon Sohn**, "Imaging of pipeline defects based on extraction of mode-converted guided waves," *SPIE International Symposia, Smart Structures & Materials and Nondestructive*

Evaluation for Health Monitoring and Diagnostics, San Diego, CA, March 11-15, 2012.

81. Truong Thanh Chung, Byeongjin Park Chul Min Yeum, **Hoon Sohn**, "Laser ultrasonic imaging of a rotating object with a dropout elimination technique," *The 24th KKCNN Symposium on Civil Engineering*, Hyogo, Japan, December 14-16, 2011.

82. Hyun Jun Park, **Hoon Sohn**, Chung-Bang Yun, Joseph Chung, Michael Lee "Application of a laser-based wireless active sensing system to structural health monitoring," *the 1st International Conference on Smart Structures and Systems*, Seoul, Korea, September 18-23, 2011.

83. Byeongjin Park**,** **Hoon Sohn**, "Localization of crack initiation in a pipe structure using a laser based acoustic emission technique," *the 8h International Workshop on Structural Health Monitoring, Stanford, CA*, September 13-15, 2011.

84. Truong Thanh Chung**,** Soo Jin Cho, Chung Bang Yun, **Hoon Sohn**, Hyun Myung, "Identification and model updating of Guangzhou new TV tower," *the 8h International Workshop on Structural Health Monitoring, Stanford, CA*, September 13-15, 2011.

85. Chul Min Yeum, **Hoon Sohn**, Jeong Beom Ihn, Hyung Jin Lim "Reference-free structural health monitoring for detecting delamination in composite plates," *the 8h International Workshop on Structural Health Monitoring, Stanford, CA*, September 13-15, 2011.

86. Hyeonseok Lee, **Hoon Sohn**, "Baseline-free crack detection in nuclear power plants," *the 8h International Workshop on Structural Health Monitoring, Stanford, CA*, September 13-15, 2011.

87. Yun Kyu An, **Hoon Sohn**, Chang Yik Park, "Aircraft wing structure monitoring using an integrated impedance and guided wave technique," *The 18th International Conference on Composite Materials*, Jeju Island, Korea, August 21-26, 2011.

88. Yun Kyu An, Byung Jin Park, **Hoon Sohn**, "Isolation of crack-induced standing wave energy from laser scanned ultrasonic image," *QNDE Conference*, Burlington, VT, July 17-22, 2011.

89. Jinyeol Yang, Hyeonseok Lee, **Hoon Sohn**, "An optical-fiber guided ultrasonic excitation and measurement system for online monitoring under high temperature," *QNDE Conference*, Burlington, VT, July 17-22, 2011.

90. Truong Thanh Chung, Soojin Cho, Chung Bang Yun, **Hoon Sohn**, Hyun Myung, "Modal identification and model updating of Guangzhou New TV tower," *ASCE, Engineering Mechanics Institute Conference, Boston, June 2-4,* 2011.

91. Hyung Jin Lim, **Hoon Sohn**, "Reference-free delamination detection, localization and quantification using a matching pursuit technique," *ASCE, Engineering Mechanics Institute Conference, Boston, June 2-4,* 2011.

92. Hyung Jin Lim, **Hoon Sohn**, "Reference-free delamination quantification within multi-layer composite materials," *KSNT Spring Conference*, May 26-27, Gyeong-Ju, Korea, 2011.

93. Byeongjin Park**,** Yun Kyu An, **Hoon Sohn**, "Noncontact laser ultrasonic imaging for automated damage detection," *COSEIK Annual Conference,* April 14-15, Busan, Korea, 2011.

94. Chul Min Yeum, **Hoon Sohn**, Jeong Beom Ihn, "Delamination detection in a composite plate using a dual piezoelectric transducer network," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 6-10, 2011.

95. Kevin S. Brown, Martin DeSimio, **Hoon Sohn**, "Piezoelectric transducer health determination using linear reciprocity," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 6-10, 2011.

96. Hyun Jun Park, **Hoon Sohn**, Chung-Bang Yun, Joseph Chung, Michael Lee, "Development of a non-contact PZT excitation and sensing technology via laser," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 6-10, 2011.

97. Yun-Kyu An and **Hoon Sohn**, "Integrated impedance and guided wave based damage detection under temperature variation," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 6-10, 2011.

98. Hyeon Seok Lee, **Hoon Sohn**, Hyun Woo Park, "Pipeline monitoring using an integrated MFC/FBG system," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 6-10, 2011.

99. **Hoon Sohn**, Martin P. DeSimio, Steven E. Olson, Kevin Brown and Mark Derriso, "Impact localization in an aircraft fuselage using laser based time reversal," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 6-10, 2011.

100. Hyun Jun Park, **Hoon Sohn**, Chung-Bang Yun, Joseph Chung, "Wireless guided wave-based monitoring using laser based actuation and sensing," *Asian Pacific Workshop on Structural Health Monitoring*, Tokyo, Japan, November 30-December 2, 2010.

101. Jin Yeol Yang, Hyeon Seok Lee, **Hoon Sohn**, Jung Ryul Lee, "Guided wave generation under high-temperature environment," *Asian Pacific Workshop on Structural Health Monitoring*, Tokyo, Japan, November 30-December 2, 2010.

102. Min Koo Kim, Hyun Jin Lim, Hoon Sohn, Chan Yik Park, "Impedance-based bolt loosening detection under varying temperature and loading," *Asian Pacific Workshop on Structural Health Monitoring*, Tokyo, Japan, November 30-December 2, 2010.

103. Hyung Jin Lim, Chul Min Yeum and **Hoon Sohn**, "Modeling of Impact-induced Delamination in a Multilayer Composite Plate," *The 23rd KKCNN Symposium on Civil Engineering, Taipei (Taiwan), November 13-15, 2010*

104. Yun-Kyu An and **Hoon Sohn**, "A Temperature Compensation Method for Impedance based Damage Detection," *KSCE 2010*, Song-do, Incheon, Korea, October 20 – 22, 2010.

105. Yun-Kyu An, Hyung Jin Lim and **Hoon Sohn**, "Temperature independent Delamination Detection using data normalization," *The 3rd International Conference on Multi-Functional Materials and Structures*, Chonbuk National Univ., Jeonju, Korea, September 14-18, 2010.

106. Jung Ryul Lee, See Yenn Chong, Chang Yong Yoon, **Hoon Sohn**, "Design of a fiber Bragg grating acoustic sensor for structural health monitoring of nuclear power plant," *The 3rd International Conference on Multi-Functional Materials and Structures*, Jeonju, Korea, September 14-18, 2010.

107. Debaditya Dutta, **Hoon Sohn**, Jin Yeol Yang, "A non-contact structural health monitoring system through laser based excitation and sensing of ultrasonic guided waves," *the 5th International Conference on Bridge Maintenance, Safety and Management*, Philadelphia, PA, July 11-15, 2010.

108. Hyun Jun Park, **Hoon Sohn**, Chung Bang Yun, Joseph Chung, Il Bum Kwon, "Development of a wireless power and data transmission system using laser and optoelectronic devices for guided wave-based structural health monitoring," *the 5th International Conference on Bridge Maintenance, Safety and Management*, Philadelphia, PA, July 11-15, 2010.

109. Chung-Bang Yun, **Hoon Sohn**, Hyungjo Jung, B.F. Spencer, T. Nagayama, "Wireless sensing

technologies for bridge monitoring and assessment," *the 5th International Conference on Bridge Maintenance, Safety and Management*, Philadelphia, PA, July 11-15, 2010.

110. Debaditya Dutta, **Hoon Sohn**, Jin Yeol Yang, "A non-contact structural health monitoring system through laser based excitation and sensing of ultrasonic guided waves" *the 16th US National Congress of Theoretical and Applied Mechanics*, State College, PA, June 27 - July 2, 2010.

111. **Hoon Sohn**, Yun-Kyu An, Chang Gil Lee, Min Koo Kim, Hyung Jin Lim, "Application of online NDT techniques to decommissioned bridge testing," the 5th European Workshop on Structural Health Monitoring, Sorrento, Italy, June 29-July 02, 2010.

112. Min Koo Kim, Hyung Jin Lim, **Hoon Sohn**, Chan Yik Park, "Impedance based damage diagnosis of a complex composite aircraft wing under changing loading and temperature conditions," *the 5th European Workshop on Structural Health Monitoring*, Sorrento, Italy, June 29-July 02, 2010.

113. Chul MinYeum, **Hoon Sohn**, Jeon Beom Ihn, "Lamb wave decomposition using amplitude matching with concentric circular PZT transducers," *the 5th European Workshop on Structural Health Monitoring, Sorrento*, Italy, June 29-July 02, 2010.

114. Martin P. DeSimio, Steven E. Olson, **Hoon Sohn**, Eric D. Swenson, "Analysis of lamb wave interaction with corrosion damage in aluminum plates," *the 5th European Workshop on Structural Health Monitoring*, Sorrento, Italy, June 29-July 02, 2010.

115. Steven E. Olson, Martin P. DeSimio, Eric D. Swenson, **Hoon Sohn**, "Interaction of lamb waves with structural features of an aircraft fuselage," *the 5th European Workshop on Structural Health Monitoring*, Sorrento, Italy, June 29-July 02, 2010.

116. **Hoon Sohn**, Debaditya Dutta, Jin Yeol Yang, Martin P. DeSimio, Steven E. Olson, Eric D. Swenson, "A wavefield imaging technique for delamination detection in composite structures," *the 5th European Workshop on Structural Health Monitoring*, Sorrento, Italy, June 29-July 02, 2010.

117. **Hoon Sohn**, Jin Yeol Yang, Debaditya Dutta, "Delamination and disband detection using noncontact scanning laser," *US-Korea Workshop on Multi-scale Mechanics and Multi-functional Materials for Sensing and Monitoring*, Jeju, Korea, May 31-June 01, 2010.

118. Chang Gil Lee, Yun-Kyu An and **Hoon Sohn**, "Destructive bridge testing for smart monitoring technology validation," *ASCE, Structural Congress*, Orlando, Florida, May 12-15, 2010.

119. Yun-Kyu An, Min Koo Kim, Hyung Jin Lim and **Hoon Sohn**, "Validations of reference-free crack detection techniques through a decommissioned bridge test," *2010 COSEIK Annual Conference*, Jeju, Korea, April 8-9, 2010.

120. Eric D. Swenson, **Hoon Sohn**, Steven E. Olson, Martin P. DeSimio, "Comparison of 1D and 3D laser vibrometry measurements of lamb waves," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010.

121. Steven E. Olson, Martin P. DeSimio, Eric D. Swenson, **Hoon Sohn**, "Computational lamb wave model validation using 1D and 3D laser vibrometer measurements," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010.

122. **Hoon Sohn**, Eric D. Swenson, Steven E. Olson. Martin P. DeSimio "Delamination detection in composite structures using laser vibrometry measurements of lamb waves," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010.

123. Hyeon Seok Lee, Hyun Jun Park, **Hoon Sohn**, Il Bum Kwon, "Guided wave generation and sensing system using a single laser source and optical fibers," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010.

124. Hyun Jun Park, **Hoon Sohn**, Chung-Bang Yun, Joseph Chung, "Development of a wireless power transmission system for guided wave generation and sensing via a laser," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010.

125. Eun Jin Kim, Min Koo Kim, **Hoon Sohn**, Hyun Woo Park, "Understanding a reference-free impedance method using collocated PZT transducers," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010

126. Min Koo Kim, Eun Jin Kim, Hyun Woo Park, **Hoon Sohn**, "Reference-free impedance-based crack detection in plate-like structures," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010

127. Yun-Kyu An, **Hoon Sohn**, "Experimental Validations of a Baseline-free Crack Detection Technique using Dual-PZTs," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 7-11, 2010

128. Hyeon Seok Lee, Hyun Jun Park, **Hoon Sohn**, Il Bum Kwon, "A hybrid PZT/FBG guided wave generation and sensing system using a single laser source," *International Conference on Computational Design in Engineering (CODE)*, Seoul, Korea, Nov. 3-6, 2009

129. Chung Bang Yun, **Hoon Sohn**, Seung Hee Park, Hyun Jun Park, Jee Young Min, Chang Gil Lee, "Piezoelectric sensors-based structural health monitoring," *International Conference on Computational Design in Engineering*, Seoul, Korea, November 3-6, 2009.

130. Yun-Kyu An and **Hoon Sohn**, "Energy-based instantaneous crack detection using Dual-PZT transducers on a single surface," *The 22th KKCNN Symposium on Civil Engineering, Thailand, October 31-November 2, 2009.*

131. Hyeon Seok Lee, Hyun Jun Park, **Hoon Sohn**, Il Bum Kwon, "An integrated MFC/FBG guided wave generation and sensing system using a single laser source," *International Conference on Civil and Environmental Engineering (ICCEE)*, Busan, Korea, October 28-30, 2009.

132. Chung-Bang Yun, **Hoon Sohn**, Seunghee Park, Hyun-Jun Park, Jiyoung Min, Chang-Gil Lee, "Piezoelectric sensors-based smart structural health monitoring," *International Conference on Civil and Environmental Engineering (ICCEE)*, Busan, Korea, October 28-30, 2009.

133. Hyun Jun Park, **Hoon Sohn**, Il Beom Kwon, Chung Bang Yun, "Development of a wireless power and data transmission system using laser and optoelectronic devices," *the 10th International Conference on Structural Safety and Reliability,* Osaka, Japan, September 13-17, 2009.

134. Chang Gil Lee, Seung Hee Park, Seung Bum Kim, **Hoon Sohn**, "Application of reference-free crack detection techniques to in-situ bridge monitoring," *the 10th International Conference on Structural Safety and Reliability,* Osaka, Japan, September 13-17, 2009.

135. Chung Bang Yun, **Hoon Sohn**, Ki Young Koo, Ming L. Wang, Yunfeng Zhang, Jerome P. Lynch, "US-Korea collaborative research for bridge monitoring testbeds," *the 10th International Conference on Structural Safety and Reliability,* Osaka, Japan, September 13-17, 2009.

136. **Hoon Sohn**, Sang Jun Lee, “Time reversal based piezoelectric transducer self-diagnosis under varying structural conditions,” *the 7h International Workshop on Structural Health Monitoring, Stanford, CA*, September 9-11, 2009.

137. **Hoon Sohn**, Debaditya Dutta, Yun-Kyu An, “Baseline-free damage detection through mode separation of lamb waves using self-sensing piezoelectric wafer transducers,” *the 7h International Workshop on Structural Health Monitoring, Stanford, CA*, September 9-11, 2009.

138. Yun-Kyu An, Debaditya Dutta, **Hoon Sohn**, “Energy-based reference-free damage diagnosis using a single pair of collocated PZTs,” *The Fifth International Workshop on Advanced Smart Materials and Smart Structures Technology,* Boston, MA, July 29-31, 2009.

139. Sang Jun Lee, **Hoon Sohn**, Jennifer E. Michaels and Thomas E. Michaels,” In situ detection of surface-mounted PZT transducer defects using linear reciprocity,” *36th Annual Review of Progress in Quantitative Nondestructive Testing*, Kingston, RI, July 26-31, 2009.

140. Abhinav Agrawal, Joel Hurley, Yujie Ying, James H. Garrett, Lucio Soibelman, **Hoon Sohn**, “Preliminary studies on the dispersion and attenuation of signals produced by permanently installed MFC transducers for pipeline monitoring,” *the 16h Workshop of the European Group for Intelligent Computing in Engineering , Berlin, Germany*, July 15-17, 2009.

141. Hyun-Jun Park, **Hoon Sohn**, Joseph Chung, Il-Bum Kwon, Chung-Bang Yun, "Wireless guided wave generation using PZT and optoelectronic devices," *The 5th Annual Workshop of the Asian-Pacific Network of Centers for Research in Smart Structure Technology (ANCRiSST)*, Boston, MA, July, 2009.

142. Chung-Bang Yun, **Hoon Sohn**, and Seunghee Park, “Smart Piezo-sensing for ubiquitous structural health monitoring,” *Int’l Symposium on Development of IT-Construction Convergence Technology & Its Application to Ubiquitous Urban Space*, Jeju Island, Korea, May 25, 2009.

143. Hyun Woo Park, Ki Lyong Lim, Eun Jin Kim, **Hoon Sohn**, “Analysis of lamb wave propagation on a plate using the spectral element method,” *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 8-12, 2009.

144. Seung Hee Park, Chang Gil Lee, **Hoon Sohn**, “Frequency domain reference-free crack detection using transfer impedances in plate structures,” *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 8-12, 2009.

145. Hyun Jun Park, **Hoon Sohn**, Il Bum Kwon, Chung Bang Yun, “Development of an optics-based guided wave excitation technique,” *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 8-12, 2009.

146. Chang Gil Lee, Seung Bum Kim, **Hoon Sohn**, “Application of a reference-free damage detection technique to complex structures,” *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 8-12, 2009.

147. Sang Jun Lee, **Hoon Sohn**, “Lamb wave tuning curve calibration with improved PZT modeling,” *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 8-12, 2009.

148. **Hoon Sohn**, Chang Gill Lee, Seung Bum Kim, “Guided wave based reference-free damage detection of an in-service bridge” Annual Symposium of Korea Institute for Structural Maintenance Inspection, Seoul, Korea, November 27, 2008

149. **Hoon Sohn**, “Sensing for bridge monitoring and prognostication: does it make a sense? how to make sense out of it?,” *US NSF Bridge Condition Monitoring and Prognostication Workshop,* Minneapolis, MN,

November 20-21, 2008. (**Invited Keynote Presentation**)

150. Jeon Yeol Shin, Hyun Min Kim, **Hoon Sohn**, Chung Bang Yun, "The effect of KTX vehicle size adjustment on high-speed railroad bridge vibration: numerical study," *Annual Conference of Korean Society for Railway*, November 13-14, Korea 2008.

151. Chang Gil Lee, Seung Bum Kim, **Hoon Sohn**, "Application of a reference-free damage detection technique to members with complex geometries," *Korean Society of Civil Engineers*, October 29-30, 2008.

152. Chung Bang Yun, **Hoon Sohn**, Ki Young Koo, Seung Hee Park, Hyung Jun Park, Ming Wang, Jerome Lynch, "International bridge monitoring testbeds," *the 21st KKCNN Symposium on Civil Engineering*, Singapore, October 27-28, 2008.

153. Chang Kook Oh, **Hoon Sohn**, In Hwan Bae, "System change detection within the yong jong suspension bridge subject to environmental and operational variations," *the 21st KKCNN Symposium on Civil Engineering*, Singapore, October 27-28, 2008.

154. Jeon Yeol Shin, Yun-Kyu An, Jin Woo Lee, **Hoon Sohn**, Chung Bang Yun, "Vibration reduction of high-speed bridges using vehicle size adjustment: scaled model experiment," *Annual Workshop of Earthquake Engineering Society of Korea*, September 26, 2008.

155. Sang Jun Lee, **Hoon Sohn**, "Time reversal based piezoelectric transducer self-diagnosis for structural health monitoring applications," *Integrated Systems Health Management Conference,* Covington, KY, August 11-15, 2008 (**Invited Presentation**).

156. **Hoon Sohn**, Seung Bum Kim, Sang Jun Lee, Debaditya Dutta, Hyun Jun Park, Chang Gil Lee, Abhinav Agrawal, Chul Min Yeum, Seung Hee Park, Yun-Kyu An, "Transition from guided wave based non-destructive testing to structural health monitoring," *35th Annual Review of Progress in Quantitative Nondestructive Evaluation (QNDE 2008)*, Chicago, IL, July 20-25, 2008.

157. Debaditya Dutta, **Hoon Sohn**, "A reference-free nonlinear impedance method for crack detection," *the 4th International Conference on Bridge Maintenance, Safety and Management,* Seoul, Korea, July 13-17, 2008.

158. Marcello Cammarata, Debaditya Dutta, **Hoon Sohn**, Pierovincenzo Rizzo, Kent Harries, "Advanced signal processing for ultrasonic structural monitoring of waveguides," *the 4th International Conference on Bridge Maintenance, Safety and Management,* Seoul, Korea, July 13-17, 2008.

159. Jerome P. Lynch, Jun Hyun Kim, Yunfeng Zhang, Ming L. Wang, **Hoon Sohn**, Chung Bang Yun, "Advanced sensor technologies on korean bridges: field benchmark opportunities," *the 4th International Conference on Bridge Maintenance, Safety and Management,* Seoul, Korea, July 13-17, 2008.

160. Hyun Woo Park, Joo Sung Kang, Jung Wuk Hong, **Hoon Sohn**, "Understanding the effects of complex structural features on guided wave propagation," *the 15th International Congress on Sound and Vibration,* Daejeon, Korea, July 6-10, 2008.

161. Debaditya Dutta, **Hoon Sohn**, "Crack detection in metallic structures using nonlinear electro-mechanical impedance measurement," *the 4th European Workshop on Structural Health Monitoring*, Cracow, Poland, July 2-4, 2008.

162. Sang Jun Lee, **Hoon Sohn**, "Admittance-base calibration of piezoelectric transducer size considering bonding effects on lamb wave actuation and sensing," *the 4th European Workshop on Structural Health Monitoring*, Cracow, Poland, July 2-4, 2008.

163. Chang Gil Lee, Seung Bum Kim, **Hoon Sohn**, "Application of a reference-free damage diagnosis technique to a plate with through-the-thickness holes," *the 4th European Workshop on Structural Health*

Monitoring, Cracow, Poland, July 2-4, 2008.

164. Seung Hee Park, Chang Gil Lee, **Hoon Sohn**, "Reference-free impedance based structural health monitoring," *The 4th International Workshop on Advanced Smart Materials and Smart Structures Technology (ANCRiSST 2008)*, June 24-25, 2008.

165. Marcello Cammarata, Debaditya Dutta, **Hoon Sohn**, Piervincenzo Rizzo, Kent Harries, "Advanced ultrasonic structural monitoring of waveguides," CIMTEC 2008: *3rd International Conference on Smart Materials, Structures and Systems,* Sicily, Italy, June 8-12, 2008.

166. **Hoon Sohn**, "Reference-free approaches for structural health monitoring," CIMTEC 2008: *3rd International Conference on Smart Materials, Structures and Systems,* Sicily, Italy, June 8-12, 2008. (**Invited Paper**)

167. **Hoon Sohn**, "Robust crack detection under changing temperature environment," *the 4th International Conference on Advances in Structural Engineering and Mechanics,* Jeju, Korea, May 26-28, 2008. **(Invited Paper)**

168. Chung Bang Yun, **Hoon Sohn**, "Piezoelectric transducer based structural health monitoring for civil infrastructure," *the 4th International Conference on Advances in Structural Engineering and Mechanics,* Jeju, Korea, May 26-28, 2008. **(Keynote Presentation)**

169. Seunghee Park, Chang Gil Lee, **Hoon Sohn**, "Transfer impedance-based crack detection without baseline date," *the 4th International Conference on Advances in Structural Engineering and Mechanics,* Jeju, Korea, May 26-28, 2008.

170. **Hoon Sohn**, Seung Bum Kim, Sang Jun Lee, Debaditya Dutta, Hyun Jun Park, Chang Gil Lee, Abhinav Agrawal, Chul Min Yeum, "Robust crack detection under changing temperature environment," *US-Korea Workshop on Bio, Bio-Inspired and Smart Sensing,* Jeju, Korea, May 23-25, 2008. **(Invited Paper)**

171. Chung-Bang Yun, **Hoon Sohn**, Ki-Young Koo, Hyun-Jun Park, Ming. L. Wang, Yunfeng Zhang and Jerome P. Lynch, "US-Korea collaborative research for bridge monitoring testbeds," *US-Korea Workshop and International Student Forum on Bio-inspired Sensor Technology and Infra-structure Monitoring*, Jeju, Korea, May, 2008

172. D. Dutta & H. Sohn, "Crack Detection in Metallic Structures Using Nonlinear Electro-Magnetic Impedance Measurement". *Proceedings of the 2nd CenSCIR Annual Symposium,* Pittsburgh, PA, May, 2008.

173. Kirk A. Grimmelsman, James Brownjohn, Necati Catbas, Joel P. Conte, Guido DeRoeck, Charles Farrar, Marvin W. Halling, Sami Masri, **Hoon Sohn**, Helmut Wenzel, "A review of structural identificatin for bridge structures," *ASCE 2008 Structures Congress*, Vancouver, Canada, April 24-26, 2008.

174. Chul Min Yeum, **Hoon Sohn**, "Probabilistic damage localization using embedded piezoelectric sensor networks," *the 2nd UiTM-KAIST Symposium on Urban Engineering and Sustainability,* Daejon, Korea, March 31, 2008.

175. Chang Kook Oh and **Hoon Sohn**, "Unsupervised support vector machine based principle component analysis for structural health monitoring," *International Conference on Computational and Experimental Engineering and Sciences (ICCES 08)*, Honolulu, Hawaii, March 17-22, 2008.

176. Chang Gil Lee, **Hoon Sohn**, "The effect of through-the-thickness holes on a reference-free damage diagnosis technique," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 9-13, 2008.

177. Seung Bum Kim, **Hoon Sohn**, "Instantaneous Crack detection using dual PZT transducers," *SPIE*

International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics, San Diego, CA, March 9-13, 2008.

178. Debaditya Dutta, **Hoon Sohn**, Kent A Harries, "A nonlinear acoustic technique for crack detection in metallic structures," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 9-13, 2008.

179. **Hoon Sohn**, "The effect of temperature variation on a reference-free crack detection technique," *the 20th KKCNN Symposium on Civil Engineering*, Jeju, South Korea, October 4-5, 2007.

180. **Hoon Sohn**, "Applications of smart materials and sensing technologies to civil infrastructure," *The 6th International Workshop on Structural Health Monitoring,* Stanford, CA, September 11-13, 2007.

181. Seung Bum Kim, **Hoon Sohn**, "Instantaneous crack detection in thin metal plates and aircraft panels," *The 6th International Workshop on Structural Health Monitoring,* Stanford, CA, September 11-13, 2007. **(Won the best student paper award)**

182. Sang Jun Lee, **Hoon Sohn**, "Reference-free piezoelectric transducer self-diagnosis scheme development using guided wave propagation for structural health monitoring systems," *The 6th International Workshop on Structural Health Monitoring,* Stanford, CA, September 11-13, 2007.

183. **Hoon Sohn**, Seung Bum Kim, "Instantaneous reference-free crack detection based on the polarization characteristics of piezoelectric materials," *the 10th International Conference on Applications of Statistics and Probabilities in Civil Engineering*, Tokyo, Japan, July 31- August 3, 2007.

184. Seung Bum Kim, **Hoon Sohn**, "Application of an instantaneous crack diagnosis technique to thin metal plates and panels," *World Forum on Smart Materials and Smart Structures Technologies*, Chongqing and Nanjing, China, May 22- 27, 2007. (**Won the best student paper award**)

185. **Hoon Sohn**, "Smart structures/infrastructures: state of research," *World Forum on Smart Materials and Smart Structures Technologies*, Chongqing and Nanjing, China, May 22-27, 2007.

186. Seung Bum Kim and **Hoon Sohn**, "Instantaneous crack detection under changing operational and environmental variation," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 18-22, 2007. (Cited: 1)

187. **Hoon Sohn**, David W. Greve, Irving J. Oppenheim, Seung Bum Kim, Sang Jun Lee, Seung Dae Kim, Anand Boscha, "Reference-free transducer and system diagnosis and beyond," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, March 18-22, 2007.

188. Seung Dae Kim, Chi Won In, Kelly E. Cronin, **Hoon Sohn**, Kent Harries, "Debonding detection in CFRP strengthened RC beams using active sensors," *Proceedings of Third International Conference on FRP Composites in Civil Engineering, Miami, Florida*, December 13-15, 2006.

189. Seung Bum Kim, **Hoon Sohn** "Instantaneous reference-free crack detection techniques based on guided wave propagation and polarization characteristics of piezoelectric materials," *US-Korea Workshop on Smart Structures Technology for Steel Structures, Seoul, Korea*, November 16-17, 2006.

190. Sang Jun Lee, **Hoon Sohn**, "Self-sensing scheme development for differentiating sensor defect from structural damage," *ASME International Mechanical Engineering Congress and Exposition*, Illinois, Chicago, November 5-10, 2006.

191. **Hoon Sohn**, David W. Greve, Irving J. Oppenheim, Anand K. Boscha, "Non-contact generation and reception of guided waves using near-field inductive coupling," *the 4th China-Japan-US Symposium on*

Structural Control and Monitoring, Hangzhou, China, October 16-17, 2006.

192. **Hoon Sohn**, Seung Dae Kim, Chi Won In, Kelly E. Cronin and Kent Harries, " Debonding monitoring of CFRP strengthened rc beams based on a time reversal process of guided waves," US-Taiwan Workshop on Smart Structural Technology for Seismic Hazard Mitigation, Taipei, Taiwan, October 12-14, 2006.

193. **Hoon Sohn**, Seung Dae Kim, Chi Won In, Kelly E. Cronin and Kent Harries, " Debonding monitoring of CFRP strengthened RC beams without reference data nor prior decision boundaries," the 4th International Conference on Earthquake Engineering, Taipei, Taiwan, October 12-13, 2006.

194. David Greve, Irving J. Oppenheim, and **Hoon Sohn**, "Design considerations for a non-contact, inductively coupled lamb wave transducer," *The 2006 IEEE International Ultrasonics Symposium*, Vancouver, British Columbia, Canada, October 3–6, 2006.

195. Sang Jun Lee, **Hoon Sohn**, "Active self-sensing scheme development for structural health monitoring," the 8th International Conference on Motion and Vibration Control, Daejeon, Korea, August 27-30, 2006.

196. **Hoon Sohn**, "Instantaneous damage diagnosis without neither baseline data nor prior decision boundaries," *Integrated Systems Health Management Conference*, Air Force Research Laboratory, Cincinnati, OH, August 14-17, 2006. (**Invitation only**)

197. Hyun Woo Park, **Hoon Sohn**, and Hae Sung Lee, "Statistical damage detection of structures by using system identification with 1-norm based regularization," will be presented at the Third International Conference on Bridge Maintenance, Safety and Management, July 16-19, 2006, Porto-Portugal

198. David Greve, Irving Oppenheim, **Hoon Sohn**, Patrick Yue, Anand K. Boscha, "Active sensing with an inductively coupled wireless lamb wave transducer," *The 4th World Conference on Structural Control and Monitoring*, San Diego, CA, July 11-13, 2006.

199. Sang Jun Lee, **Hoon Sohn**, "Active self-sensing module for sensor diagnosis and structural health monitoring," the 3rd *European Workshop on Structural Health Monitoring*, Granada, Spain, July 5-7, 2006.

200. David Greve, Irving Oppenheim, **Hoon Sohn**, Patrick Yue, "Structural health monitoring with an inductively coupled (wireless) lamb wave transducer," *Proceedings of the Third European Workshop on Structural Health Monitoring*, Granada, Spain, July 5-7, 2006.

201. Seung Dae Kim, Chi Won In, Kelly E. Cronin, **Hoon Sohn**, Kent Harries, "Active sensing for disbond detection in CFRP strengthened RC beams," *Proceedings of the Third European Workshop on Structural Health Monitoring*, Granada, Spain, July 5-7, 2006.

202. Seung Dae Kim, Chi Won In, Kelly E. Cornin, "A reference-free debonding monitoring technique in CFRP strengthened RC structures using active sensing materials," *the 23rd Annual International Bridge Conference*, Pittsburgh, PA, June 12-14, 2006. (**won the James D. Copper Student Paper (Best Student) Award under my supervision**)

203. David W. Greve, Irving J. Oppenheim, **Hoon Sohn**, C. Patrick Yue "An inductively coupled (wireless) lamb wave transducer," *The 3rd International Workshop on Advanced Smart Materials and Smart Structures Technology*, Lake Tahoe, CA, May 29-30, 2006

204. **Hoon Sohn**, Seung Dae Kim, Chi Won In, Kelly E. Cronin, Kent Harries, "Application of time reversal guided waves to debond detection in CFRP strengthened RC beams," *International Symposium on Mechanical Waves in Solids*, Zhejiang University, Hangzhou, Zhejiang, China, May 15-18, 2006 **(Invited Paper)**.

205. Jieun Jang, Frank Liu, Patrick Yue, **Hoon Sohn**, "Development of self-contained sensor skin for highway

bridge monitoring," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, February 26- March 2, 2006.

206. **Hoon Sohn**, Hyun Woo Park, Seung Bum Kim, "Application of outlier analysis for baseline-free damage diagnosis," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, February 26- March 2, 2006.

207. Seung Bum Kim, **Hoon Sohn**, "Application of time reversal guided waves to field bridge testing for baseline free damage diagnosis," *SPIE International Symposia, Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring and Diagnostics,* San Diego, CA, February 26- March 2, 2006.

208. Seung Dae Kim, Chi Won In, Kelly E. Cronin, **Hoon Sohn**, Kent Harries, "Active sensing for disbond detection in FRP strengthened RC beams," *The 24th International Modal Analysis Conference,* St Louis, Missouri, January 30 – February 2, 2006.

209. Hyun Woo Park, Seung Bum Kim, **Hoon Sohn**, "Understanding the reciprocity of lamb waves induced by active sensors," Proceedings of KSIAM Annual meeting, South Korea, Nov. 25-26, 2005.

210. **Hoon Sohn**, Sang Jun Lee, Seung Bum Kim, "Active sensing for multi-scale sensor and structural diagnosis," *the Second International Conference on Structural Health Monitoring of Intelligent Infrastructure, Shenzhen, China*, November 16-18, 2005.

211. Hyun Woo Park, Seung Bum Kim, **Hoon Sohn**, "Time reversal active sensing for structural health monitoring," *Presented at the Conference of Korea Institute for Structural Maintenance Inspection*, Oct 28-29, 2005

212. Seung Bum Kim, **Hoon Sohn**, David Greve, Irving Oppenheim, "Application of a time reversal process for baseline-free monitoring of a bridge steel girder," *International Workshop on Structural Health Monitoring*, Stanford, CA, September 15-17, 2005.

213. Charles R. Farrar, Gyuhae Park, Jeannette R. Wait, David W. Allen, **Hoon Sohn**, "Damage prognosis solution, part1: overview," *the 6th European Conference on Structural Dynamics (Eurodyn 2005)*, Paris, Frances, September 4-7 2005.

214. **Hoon Sohn**, Seung Bum Kim, Hyun Woo Park, "Searching for a reference-free damage detection technique," *The Second International Workshop on Advanced Smart Materials and Smart Structures Technology*, Gyeong-ju, Korea, July 21-24, 2005.

215. Hyun Woo Park, **Hoon Sohn**, "Parameter estimation of the generalized extreme value distribution using quadratic programming," *presented at the Korea Society for Industrial and Applied Mathematics Spring Conference*, Seoul National University, Seoul Korea, May 20-21, 2005.

216. Hyun Woo Park and **Hoon Sohn**, "Parameter estimation of the generalized extreme value distribution for structural health monitoring," *Proceedings of ASCE Structures Congress*, New York, NY, April 20-24, 2005.

217. Charles R. Farrar, **Hoon Sohn**, Gyuhae Park, David Allen, Steven Ball, Michael P. Masquelier, "Coupling sensing hardware with data interrogation software for structural health monitoring," *Proceedings of 11th International Symposium on dynamic Problems of Mechanics*, Ouro Preto, Brazil, March 2005. **(Invited Paper, Keynote Lecture)**

218. **Hoon Sohn** and Hyun Woo Park, "Can damage be detected without any baseline data?," *SPIE's Smart Structures/NDE Conference, San Diego, CA, March 6-10, 2005.*

219. Tim R. Fasel, Michael D. Todd, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Piezoelectric active

sensing using chaotic excitations and state space reconstruction," *SPIE's Smart Structures/NDE Conference, San Diego, CA, March 6-10, 2005.*

220. **Hoon Sohn**, Hyun Woo Park, Kincho H. Law, Charles R. Farrar, "Instantaneous online monitoring of unmanned aerial vehicles without baseline signals," *Proceedings of the 23rd International Modal Analysis Conference, Orlando, FL, January 31- February 3, 2005.*

221. Keith Worden, Graeme Manson, **Hoon Sohn**, Charles R. Farrar, "Extreme value statistics from differential evaluation for damage detection," *Proceedings of the 23rd International Modal Analysis Conference, Orlando, FL, January 31- February 3, 2005.*

222. Howard Matt, Alessandro Marzani, Joseph Oliver, Francesco Lanza di Scalea, John Kosmatka, **Hoon Sohn**, Gyuhae Park, Charles R. Farrar, "A guide-wave monitoring system for the wing skin-to-spar bond in unmanned aerial vehicles," *Proceedings of the 23rd International Modal Analysis Conference, Orlando, FL, January 31- February 3, 2005.*

223. Vivek R. Dave, Daniel A. Hartman, Charles R. Farrar., Matthew Bement, Mark J. Cola, **Hoon Sohn**, Gyuhae Park, Brian J. Reardon, "Predictive process dynamics: re-inventing manufacturing for critical defense applications," *Defense Manufacturing Conference*, Las Vegas, NV, November 29 – December 2, 2004.

224. **Hoon Sohn**, Hyun Woo Park, Kincho H. Law, Charles R. Farrar, "Instantaneous damage detection using time reversal process," *the 15th International Conference on Adaptive Structures and Technologies, Bar Harbor, Maine, October 25-27, 2004.*

225. Charles R. Farrar, Jeannette R. Wait, Trevor B. Tippetts, Francois, M. Hemez, Gyuhae Park, G., **Hoon Sohn**, "Damage detection and prediction for composite plates," *Proceedings of Symposium on Materials Damage Prognosis, Materials Science & Technology 2004*, New Orleans, LA, September 26-29, 2004.

226. Hyun Woo Park, **Hoon Sohn**, Kincho H. Law, "Damage detection in composite plates by using time reversal active sensing," *the 3rd International Conference on Advances in Structural Engineering and Mechanics*, Seoul, Korea, September 2-4, 2004.

227. **Hoon Sohn**, Hyun Woo Park, Kincho H. Law, Charles R. Farrar, "Minimizing misclassification of damage using extreme values statistics," *the US-Korea Workshop on Smart Structure Technologies*, Seoul, Korea, September 2-4, 2004.

228. Charles R. Farrar, **Hoon Sohn**, Gyuhae Park, "A statistical pattern recognition paradigm for structural health monitoring," *the 9th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Albuquerque, NM, July 26-28, 2004.

229. Charles R. Farrar, **Hoon Sohn**, Amy N. Robertson, "Applications of nonlinear system identification to structural health monitoring," *the 2nd European Workshop on Structural Health Monitoring*, Munich, Germany, July 7-9, 2004.

230. **Hoon Sohn**, Jeannette R. Wait, Gyuhae Park, Charles R. Farrar, "Multi-scale structural health monitoring for composite structures," *the 2nd European Workshop on Structural Health Monitoring*, Munich, Germany, July 7-9, 2004.

231. Charles R. Farrar, **Hoon Sohn**, Gyuhae Park , "Converting large sensor array data into structural health monitoring information," *Proceedings of the 4th International Workshop on Structural Control*, New York, NY, June 10-11, 2004. **(Invited Paper)**

232. Jeannette R. Wait, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "An integrated active sensing system for damage identification and prognosis," *the 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Material Conference*, Palm Springs, CA, April 19-22, 2004.

233. Amanda C. Rutherford, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Structural health monitoring using macro-fiber composites and impedance methods," *the 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Material Conference*, Palm Springs, CA, April 19-22, 2004.

234. Jeannette R. Wait, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Plate damage identifications using wave propagation and impedance methods," *the 11th SPIE Conference on Smart Structures and Materials*, San Diego, CA, March 14-18, 2004.

235. Timothy R. Fasel, Michael D. Todd, **Hoon Sohn**, Gyuhae Park, Charles R. Farrar, "Piezoelectric active sensing using chaotic excitations," *Proceedings of 11th SPIE Conference on Smart Structures and Materials*, San Diego, CA, March 14-18, 2004.

236. Nathan P. Limback, Jeannette R. Wait, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Monitoring of welded joints using piezoelectric active-sensing techniques," *the 11th SPIE Conference on Smart Structures and Materials*, San Diego, CA, March 14-18, 2004.

237. Amanda C. Rutherford, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Nonlinear feature identification of impedance-based structural health monitoring," *the 11th SPIE Conference on Smart Structures and Materials*, San Diego, CA, March 14-18, 2004.

238. Gyuhae Park, **Hoon Sohn**, Amanda C. Rutherford, Charles R. Farrar, "Self-sensing piezoelectric actuators for structural damage identification," *the 11th SPIE Conference on Smart Structures and Materials*, San Diego, CA, March 14-18, 2004.

239. **Hoon Sohn**, Gordon Thompson, Amy N. Robertson, Gyuhae Park, Charles R. Farrar, "Online damage detection for theme park rides," *the 22nd International Modal Analysis Conference*, Dearborn, MI, January 26-29, 2004.

240. Jerome P. Lynch, Arvind Sundararajan, Kincho H. Law, **Hoon Sohn,** Charles R. Farrar, "Piezoelectric structural excitation using a wireless active sensing unit," *the 22nd International Modal Analysis Conference*, Dearborn, MI, January 26-29, 2004.

241. Amy N. Robertson, **Hoon Sohn**, Charles R. Farrar, "Damage detection using wavelet transforms for theme park rides," *the 22nd International Modal Analysis Conference*, Dearborn, MI, January 26-29, 2004.

242. Amanda, C. Rutherford, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "The use of electric impedance moments for structural health monitoring," *the 22nd International Modal Analysis Conference,* Dearborn, MI, January 26-29, 2004.

243. **Hoon Sohn**, Amy N. Robertson, Charles R. Farrar, "Data interrogation for damage prognosis," *Proceedings of the 1st International Workshop on Smart Materials and Structures Technology*, Honolulu, Hawaii, January 12-14, 2004.

244. Jerome P. Lynch, Arvind Sundararajan, **Hoon Sohn**, Gyuhae Park, Charles R. Farrar and Kincho H. Law. "Embedding actuation functionalities in a wireless structural health monitoring system," *Proceedings of the 1st International Workshop on Smart Materials and Structures Technology*, Honolulu, Hawaii, January 12-14, 2004.

245. Charles R. Farrar, Francois Hemez, Gyuhae Park, Amy N. Robertson, **Hoon Sohn** and Todd. O. Williams, "An introduction to the los alamos damage prognosis project," *An International Workshop on Advanced Smart Materials and Smart Structures Technology*, Hawaii, January 12-14, 2004. **(Invited Paper, Keynote lecture)**

246. Jerome P. Lynch, Arvind Sundararajan, **Hoon Sohn**, Gyuhae Park, Charles R. Farrar, Kincho H. Law, "Embedding actuation functionalities in a wireless structural health monitoring system," *An International*

Workshop on Advanced Smart Materials and Smart Structures Technology, Hawaii, January 12-14, 2004.

247. Timothy R. Fasel, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Application of frequency domain ARX models and extreme value statistics to impedance-based damage detection," *the International Mechanical Engineering Congress and Exposition Winter Annual Meeting of the ASME,* Washington, D.C., November 16-21, 2003.

248. Amanda C. Rutherford, Gyuhae Park, **Hoon Sohn**, Charles R. Farrar, "Damage identification using impedance methods coupled with statistical classifiers," *the International Mechanical Engineering Congress and Exposition Winter Annual Meeting of the ASME,* Washington, D.C., November 16-21, 2003.

249. **Hoon Sohn**, "Statistical pattern recognition paradigm for structural health monitoring," *presented at National Science Foundation Sponsored Advanced Study Institute on Damage Prognosis*, Florianopolis, Brazil, October 19-30, 2003 **(invited speaker:** Hoon Sohn**).**

250. **Hoon Sohn**, Amy N. Robertson "Structural health monitoring application to theme park rides," *presented at National Science Foundation Sponsored Advanced Study Institute on Damage Prognosis*, Florianopolis, Brazil, October 19-30, 2003 **(invited speaker:** Hoon Sohn**).**

251. **Hoon Sohn**, Gyuhae Park, Jeannette R. Wait, Nathan P. Limback, "Wavelet based analysis for detecting delamination in composite plates," *the 4th International Workshop on Structural Health Monitoring, Stanford University, Stanford, CA*, September 15-17, 2003 (presenter: Hoon Sohn).

252. Amy N. Robertson, **Hoon Sohn**, Charles R. Farrar, "An improved statistical classifier for identifying signal discontinuities using holder exponents," *the 4th International Workshop on Structural Health Monitoring, Stanford University, Stanford, CA*, September 15-17, 2003.

253. **Hoon Sohn**, Gyuhae Park, Charles R. Farrar, "Wavelet based active sensing for delamination detection in composite structures," *will be presented at the International Design Engineering Technical Conferences & Computers and Information in Engineering Conference,* Chicago, Illinois, September 2-6, 2003 (presenter: Hoon Sohn: presentation only).

254. Charles R. Farrar, Francois Hemez, Gyuhae Park, Amy N. Robertson, **Hoon Sohn**, Todd Williams, "A coupled approach to developing damage prognosis solutions," 5th International Conference on Damage Assessment of Structures; Southampton, England, July 1-3, 2003. **(Invited Paper, Keynote Lecture)**

255. Charles R. Farrar and **Hoon Sohn**, "Adaptive algorithms for damage detection and location," Caltrans/UCSD Structural Health Monitoring and Bridge Infrastructure Workshop, San Diego, CA, March 7-8, 2003**. (Invited Paper)**

256. Amy N. Robertson, Charles R. Farrar, **Hoon Sohn**, "Singularity detection for structural health monitoring using holder exponents," *SPIE's 10th Annual International Symposium on Smart Structures and Materials,* San Diego, CA, March 2-6, 2003.

257. Jerome P. Lynch, Arvind Sundararajan, Kincho H. Law, Anne S. Kiremidjian, Ed Carryer, **Hoon Sohn**, Charles R. Farrar, "Field validation of a wireless structural monitoring system on the Alamosa Canyon bridge," *SPIE's 10th Annual International Symposium on Smart Structures and Materials,* San Diego, CA, March 2-6, 2003.

258. Tim Fasel, **Hoon Sohn**, Charles R. Farrar, "Damage detection using extreme value statistics on frequency domain ARX models," *SPIE's 10th Annual International Symposium on Smart Structures and Materials,* San Diego, CA, March 2-6, 2003 (presenter: Hoon Sohn).

259. David W. Allen, Joshua A. Clough, **Hoon Sohn**, Charles R. Farrar, "A software tool for graphically assembling damage identification algorithms," *SPIE's 10th Annual International Symposium on Smart*

Structures and Materials, San Diego, CA, March 2-6, 2003.

260. Jerry P. Lynch, Kincho H. Law, Anne S. Kiremidjian, Ed Carryer, **Hoon Sohn**, Charles R. Farrar, "Wireless structural monitoring field validation using the Alamosa Canyon bridge," *SPIE's 10th Annual International Symposium on Smart Structures and Materials,* San Diego, CA, March 2-6, 2003.

261. Amy N. Robertson, **Hoon Sohn**, Matthew T. Bement, Norman F. Hunter, Cheng Liu, Charles R. Farrar, "Damage diagnosis and prognosis for composite plates," the *21st International Modal Analysis Conference*, Kissimmee, FL, February 3-6, 2003.

262. Timothy R. Fasel, **Hoon Sohn**, Charles R. Farrar, "Damage detection using frequency domain ARX models and extreme value statistics," the *21st International Modal Analysis Conference*, Kissimmee, FL, February 3-6, 2003.

263. **Hoon Sohn**, Jeannette R. Wait, Charles R. Farrar, "Continuous damage diagnosis and prognosis using an embedded sensing system," the *21st International Modal Analysis Conference*, Kissimmee, FL, February 3-6, 2003.

264. **Hoon Sohn**, Amy N. Robertson, Charles R. Farrar, "Singularity detection using holder exponent," the *US-Korea Workshop on Smart Infrastructural Systems*, Pusan, South Korea, August 23-24, 2002 (**invited speaker**: Hoon Sohn).

265. **Hoon Sohn**, David W Allen, Charles R. Farrar, Keith Worden, "Development of an autonomous continuous monitoring system for mechanical damage detection," the *2nd International Conference on Advances in Structural Engineering and Mechanics*, Pusan, South Korea, August 21-23, 2002 (**session organizer & invited speaker**: Hoon Sohn)

266. Charles R. Farrar, Francois M. Hemez, **Hoon Sohn**, "Developing damage prognosis solution," the *1st European Workshop on Structural Health Monitoring*, Paris, France, July 10-12, 2002 (**invited keynote paper**).

267. Charles R. Farrar, Jerry J. Czarnecki, **Hoon Sohn**, Francois M. Hemez, "A review of structural health monitoring literature 1996-2001," the *3rd World Conference on Structural Control, Como, Italy, April 7-12,* 2002 (presenter: Hoon Sohn).

268. Jeannette R. Wait, **Hoon Sohn**, Charles R. Farrar, "Application of a wireless sensor module as a distributed structural health monitoring solution," the *3rd World Conference on Structural Control, Como, Italy, April 7-12,* 2002.

269. Keith Worden, David W. Allen, **Hoon Sohn**, Charles R. Farrar, "Damage detection in mechanical structures using extreme value statistics," *SPIE's 9th Annual International Symposium on Smart Structures and Materials,* San Diego, CA, March 17-21, 2002.

270. **Hoon Sohn**, Keith Worden, Charles R. Farrar, "Consideration of environmental and operation variations for damage diagnosis," *SPIE's 9th Annual International Symposium on Smart Structures and Materials,* San Diego, CA, March 17-21, 2002 (presenter: Hoon Sohn).

271. Neal A. Tanner, Charles R. Farrar, **Hoon Sohn** "Structural health monitoring using wireless sensing system with embedded processing," *SPIE's 7th Annual International Symposium on NDE for Health Monitoring and Diagnostics,* San Diego, CA, March 17-21, 2002.

272. Charles R. Farrar, Daniel W. Stinemates, Francois M. Hemez, **Hoon Sohn**, "Structural health monitoring design using finite element analysis," *SPIE's 7th Annual International Symposium on NDE for Health Monitoring and Diagnostics,* San Diego, CA, March 17-21, 2002.

273. David W. Allen, **Hoon Sohn**, Keith Worden, Charles R. Farrar, "Utilizing the sequential probability ratio test for building joint monitoring," *SPIE's 7th Annual International Symposium on NDE for Health Monitoring and Diagnostics,* San Diego, CA, March 17-21, 2002 **(Won the best NDE paper award: first place)**.

274. Charles R. Farrar, **Hoon Sohn**, "Structural health monitoring issues for earthquake engineering applications," National Research Council, Irvine, CA, March 2002.

275. Francois M. Hemez, **Hoon Sohn**, "Structural assessment of a cable-stayed bridge," the *20th International Modal Analysis Conference*, Los Angeles, CA, February 4-7, 2002.

276. Charles R. Farrar, **Hoon Sohn**, "Condition/damage monitoring methodologies," *The Consortium of Organizations for Strong-Motion Observations Systems (COSMOS)*, Emeryville, CA, November 14-15, 2001.

277. **Hoon Sohn**, Keith Worden, Charles R. Farrar, "Novelty detection using auto-associative neural network," *ASME Symposium on Identification of Mechanical Systems: International Mechanical Engineering Congress and Exposition*, New York, NY, November 11-16, 2001 (presenter: Hoon Sohn).

278. Charles R. Farrar, **Hoon Sohn**, Keith Worden, "Data normalization: a key for structural health monitoring," the *3rd International Workshop on Structural Health Monitoring, Stanford University, Stanford, CA*, September 12-14, 2001.

279. **Hoon Sohn**, Charles R. Farrar, Michael L. Fugate, Jerry J. Czarnecki, "Structural health monitoring of welded connections," the *1st International Conference on Steel & Composite Structures, Pusan, Korea*, June 14-16, 2001 (presenter: Hoon Sohn).

280. **Hoon Sohn**, Charles R. Farrar, Keith Worden, "Novelty detection under changing environmental conditions," *SPIE's 8th Annual International Symposium on Smart Structures and Materials, Newport Beach,* CA, March 4-8, 2001 (presenter: Hoon Sohn).

281. Charles R. Farrar, **Hoon Sohn**, Michael L. Fugate, "Integrated structural health monitoring," *SPIE's 8th Annual International Symposium on Smart Structures and Materials, Newport Beach,* CA, March 4-8, 2001.

282. John F. Schultze, Francois M. Hemez, Scott W. Doebling, **Hoon Sohn**, "Statistical based non-linear model updating using feature extraction," the *19th International Modal Analysis Conference*, Orlando, FL, February 5-8, 2001.

283. Darby J. Luscher, James M.W. Brownjohn, **Hoon Sohn**, Charles R. Farrar, "Modal parameter extraction of Z 24 bridge data," the *19th International Modal Analysis Conference*, Orlando, FL, February 5-8, 2001.

284. Thomas A. Butler, Francois M. Hemez, John F. Schultze, **Hoon Sohn**, Scott W. Doebling, "Model validation for a complex jointed structure," the *19th International Modal Analysis Conference*, Orlando, FL, February 5-8, 2001.

285. **Hoon Sohn**, Charles R. Farrar, Norman F. Hunter, "Data normalization issue for vibration-based structural health monitoring," the *19th International Modal Analysis Conference*, Orlando, FL, February 5-8, 2001 (presenter: Hoon Sohn).

286. Charles R. Farrar, **Hoon Sohn**, Scott W. Doebling, "Structural health monitoring activities at los alamos national laboratory," the *13th International Congress and Exhibition on Condition Monitoring and Diagnostic Engineering Management (COMADEM 2000)*, Houston, TX, December 3-8, 2000.

287. Charles R. Farrar, **Hoon Sohn**, "Pattern recognition for structural health monitoring," *presented at Workshop on Mitigation of Earthquake Disaster by Advanced Technologies*, Las Vegas, NV, November 30 – December 1, 2000.

288. John F. Schultze, Francois M. Hemez, Scott W. Doebling, **Hoon Sohn**, "Application of nonlinear system

model updating using feature extraction and parameter effects analysis," the *71st Shock and Vibration Symposium*, Arlington, VA, November 7-9, 2000.

289. **Hoon Sohn**, Charles R. Farrar, "A statistical pattern recognition paradigm for vibration-based structural health monitoring," *Smart Engineering System Design, Neural Networks, Fuzzy Logic, Evolutionary Programming, Complex Systems, and Data Mining*, St. Louis, MO, November 5-8, 2000 (presenter: Hoon Sohn).

290. **Hoon Sohn**, Charles R. Farrar, "Time series analyses for locating damage sources in vibration systems," *International Conference on Noise and Vibration Engineering*, Leuven, Belgium, September 13-15, 2000.

291. **Hoon Sohn**, Michael L. Fugate, Charles R. Farrar, "Damage diagnosis using statistical process control," *Conference on Recent Advances in Structural Dynamics*, Southampton, UK, July 22-25, 2000 (presenter: Hoon Sohn).

292. Scott W. Doebling, Tom Butler, Francois M. Hemez, Winston Rhee, **Hoon Sohn**, "Statistical model updating and validation applied to nonlinear transient structural dynamics," *European COST F3 Conference on System Identification & Structural Health Monitoring*, Madrid, Spain, June 6-9, 2000.

293. **Hoon Sohn**, Charles R. Farrar, "Statistical process control and projection techniques for structural health monitoring," *European COST F3 Conference on System Identification & Structural Health Monitoring*, Madrid, Spain, June 6-9, 2000.

294. Erik G. Straser, **Hoon Sohn**, Anne S. Kiremidjian, Kincho H. Law, "A framework for health monitoring of structures," *2000 Structures Congress & Exposition, ASCE*, Philadelphia, PA, May 8-10, 2000.

295. **Hoon Sohn**, Michael L. Fugate, Charles R. Farrar, "Continuous structural monitoring using statistical process control," the *18th International Modal Analysis Conference*, San Antonio, TX, February 7-10, 2000 (presenter: Hoon Sohn).

296. Michael L. Fugate, **Hoon Sohn**, Charles R. Farrar, "Unsupervised learning methods for vibration-based damage detection," *the 18th International Modal Analysis Conference*, San Antonio, TX, February 7-10, 2000.

297. **Hoon Sohn**, Scott W. Doebling, "Extraction of Ritz vectors using a complete flexibility matrix," *Proceedings of Asia-Pacific Vibration Conference*, Orchard Hotel, Singapore, December 13-15, 1999 (presenter Hoon Sohn).

298. **Hoon Sohn**, Kincho H. Law, "Flexibility based extraction of Ritz vectors and their application to damage diagnosis," the *2nd International Workshop on Structural Health Monitoring*, Stanford University, Stanford, CA, September 8-10, 1999 (presenter: Hoon Sohn).

299. **Hoon Sohn**, Kincho H. Law, "Extraction of Ritz vectors and their application to structural damage diagnosis," the *5th US. National Congress on Computational Mechanics*, University of Colorado at Boulder, CO, August 4-6, 1999 (presenter: Hoon Sohn).

300. **Hoon Sohn**, Chuck Farrar, Mike Fugate, "Statistical pattern recognition applied to structural health monitoring," the *4th International Workshop on Nonlinear Elasticity in Materials*, Los Alamos National Laboratory, Los Alamos, NM, July 19-23, 1999.

301. **Hoon Sohn**, Kincho H. Law, "Application of Ritz vectors to damage detection for a grid-type bridge model," the *17th International Modal Analysis Conference*, Kissimmee, FL, February 8-11, 1999 (presenter: Hoon Sohn).

302. **Hoon Sohn**, Mark Dzwonczyk, Erik G. Straser, Kincho H. Law, Teresa Meng and Anne S. Kiremidjian, "Adaptive modeling of environmental effects on modal parameters for damage detection in civil structures,"

the SPIE's *5th Annual International Symposium on Smart Structures and Materials*, San Diego, CA, March 1-5, 1998 (presenter: Hoon Sohn).

303. **Hoon Sohn**, Kincho H. Law, "Application of load-dependent Ritz vectors to probabilistic damage detection," the *SPIE's 5th Annual International Symposium on Smart Structures and Materials*, San Diego, CA, March 1-5, 1998 (presenter: Hoon Sohn).

304. **Hoon Sohn**, Kincho H. Law, "A bayesian probabilistic damage detection using load-dependent Ritz vectors," the *16th International Modal Analysis Conference*, Santa Barbara, CA, February 2-5, 1998 (presenter: Hoon Sohn).

305. Anne S. Kiremidjian, Erik G. Straser, Kincho H. Law, **Hoon Sohn**, Teresa Meng, Lorentz Redlefsen, Ramon Cruz, "Structural damage monitoring for civil structures," *International Workshop on Structural Health Monitoring*, Stanford University, Stanford, CA, September 18-20, 1997 (**invited keynote paper**).