Hoon Sohn

Professor
Civil and Environmental Engineering Department
Korea Advanced Institute of Science and Technology (KAIST)
291 Daehak-ro, Yuseong-gu, Daejeon, Republic of Korea, 305-701
Phone: (82)+42-350-3625, Fax: (82)+42-350-8480
Email: hoonsohn@kaist.ac.kr

CONTENTS

RESEARCH INTERESTS

Structural Health Monitoring, Non-destructive Testing, 3D Printing Monitoring, Statistical Pattern Recognition & Machine Learning, Data Analytics, Sensing Technologies, Smart Materials & Structures, Smart Construction, Laser Ultrasonics, Thermography, Probabilistic & Statistical Analysis, System Identification, Structural Dynamics, Random Vibrations, 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

2021-2023	**Joint appointment**, AI Graduate School. Dept, KAIST, KAIST, Daejeon, Korea.
2021-Present	**Director**, Global Strategy Institute (GSI), KAIST, Korea
2019-Present	**Chaired Professor**, College of Civil Engineering & Architecture, Zhejiang University, China
2020-Presnet	**Director**, KAIST Global Strategic Institute, Vision Strategy Center, KAIST, Korea
2019-Present	**Director**, Center for 3D Printing Nondestructive Testing, National Research Foundation, Korea
2013-2019	**Director**, ICT Bridge Research Center supported by Ministry of Land, Infrastructure and Transportation, Korea.
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.
2011-2012	**Edward E. Curtis Visiting Professor**, School of Civil Engineering, Purdue University, IN.
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.
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

July, 2018 **Lecturer at Harbin Institute of Technology, China, (2018):** I gave two days lectures on "Statistical Pattern Recognition for Structural Health Monitoring" for 50 graduate students in Civil and Environmental Engineering Department at Harbin Institute of Technology

July, 2016 **Lecturer for 2016 World Federation Short Course, Atlanta, USA, (2016):** As part of World Federation of NDE centers activities and in conjunction with 2016 QNDE conference at Atlanta, I participated in the 2016 short course on "Advancing NDE through bulk and guided wavefield methods" organized by Profs. Jennifer E. Michaels and Massimo Ruzzene at Georgia Institute of Technology.

2012- 2015 **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 by applying advanced smart sensing and structures 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.

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.

2008- Present **Program Coordinator and Lecturer for Asia-Pacific-European 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, 2017), China (2011, 2018), India (2012), Taiwan (2014), and United Kingdom (2016). 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.

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

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

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).

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 Mechanics (CE202), KAIST, 3 unit undergraduate course [Fall 2015 FCE:4.61, 12 students registered; Fall 2016 FCE:4.69, 21 students registered; Fall 2017 FCE: 4.46, 20 students registered; Fall 2018 FCE: 4.75, 16 students registered, Fall 2020 FCE: 4.68, 8 students registered Fall 2021 FCE: 4.75, 8 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]

Statistical Pattern Recognition and Machine Learning 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; Summer 2015 FCE:3.67, 9 students registered; Spring 2017 FCE: 4.25, 7 students registered; Spring 2019 FCE: 4.05, 11 students registered; Spring 2021 FCE: 4.05, 10 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; Spring 2014 FCE: 4.06, 17 students registered; Spring 2016 FCE: 3.88, 8 students registered; Spring 2018, FCE: 4.83, 10 students registered; Spring 2020, FCE: 4.50, 5 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), KAIST, 3 unit 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.), **Hyun Woo Park** (2004-2005, KAIST, joined the faculty of DongA Univ.), **Jun Hee Kim** (2011-2013, KAIST, joined the faculty of DanKook Univ.), **Yun-Kyu An** (2013, KAIST, joined the faculty of Sejong Univ.), **Min-Koo Kim** (2015, KAIST, joined the faculty of Chungbuk National Univ.), **Hyung Jin Lim** (2015-2019, &,2020-2021, KAIST, joined faculty of Kyunggi Univ.), **Pouria Aryan** (2017-2019, KAIST), **Peipei Liu** (2018-Present, KAIST), **Kiyoung Kim** (2019-Present, KAIST), **Dinh-Son Nguyen** (2020-2022, Postech), **Soonkyu Hwang** (2020-2022, Samsung Electronics)**.**

Ph.D. Students

Kyuwon Han (2022-Present)**, Yilei Xiong** (2022-Present)**, Kiyoon Yi** (2021-Present)**, Ohjun Kwon** (2020-Present), **Seunghyun Park** (2020-2022, student at Hanyang University) **Jinho Jang** (2019-Present), **Hyeonjin Kim** (2019-Present), **Liu Yang** (2018-Present, KAIST-HKUST Joint-Degree Program), **Jun Yeon Chung** (2018-Present)**, Zhanxiong Ma** (2017-Present), **Santhakumar S** (2017-Present), **Ikgeun Jeon** (2017-Present), **Jun Lee** (2015-Present), **Jaemook Choi** (2016-Present**), Soonkyu Hwang** (2016-2020**), Suyoung Yang** (2015-2020**), Nazirah Wahab (**2014-2019**), Qian Wang** (2013-2017, KAIST-HKUST Joint-Degree Program, Faculty of National University of Singapore), **Ji Min Kim** (2013-2018,Samsung Electronics), **Peipei Liu** (2012-2017, Postdoctoral Research), **Byeongjin Park** (2012-2017, Korea Institute of Materials Science), **Kiyoung Kim** (2012-2019, Postdoctoral Research), **Truong Thanh Chung (**2011~2013, transferred to AE dept), **Hyung Jin Lim** (2011~2015), **Jin Yeol Yang** (2011~2016, Samsung Electronics)**, Hyeon Seok Lee** (2011~2014, Postdoctoral Researcher at KRISS), **Min Koo Kim** (2010-2015, KAIST-HKUSK Joint Degree Program, Assistant Professor at Hong Kong Polytechnic Univ), **Eui Jae Jin** (2009-2011, KAIST-CMU Dual Degree Program, transferred to CMU), **Yun-Kyu An** (2009-2013, CEE, KAIST, the faculty of Sejong 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

Subin Shin(2021-Present)**, Jigu Lee**(2021-Present**), Jongsu Lee** (2020-Present)**, Seungjun Choi** (2020-Present)**, Sangjun Kim** (2020-Present)**, Vittorio Palma** (2020, visiting student from University of Naples

Federico II), **Eden Binega** (2019-2020), **Kiyoon Yi** (2019-2020), **Chisung Kim** (2019-2022), **Donggun Kim** (2018-2020), **Ohjun Kwon** (2018-2020), **Jinho Jang** (2017-2019), **Gayoung Han** (2017-2019), **Jiho Park** (2016-2018)**, Jun Yeon Chung** (2016-2018)**, Ikgeun Jeon** (2016-2017), **Gunhee Koo** (2015-2017), **Timotius Yonathan Sunarsa** (2015-2017), **Yongtak Kim** (2015-2017), **Seongheum Yoon** (2015-2017), **Jun Lee** (2015-2017), **Jaemook Choi** (2014-2016), **Sangmin Lee** (2014-2016), **Soonkyu Hwang** (2014-2016), **Byung Joo Song** (2014-2016), **Seunghwan Jung** (2013-2016), **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, joined the faculty of Waterloo Univ.), **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

Jeonghoon Park (2022). **Minkyu Cho** (2021). **Kwangnam Ryu** (2020)**, Eunyeong Lee** (2019), **Hyunkyung Kim** (2018), **Hyunjun Ryu** (2018), **Jiung Kim** (2017), **Minsung Kil** (2016), **Eugene Kim** (2016), **Donggun Kim** (2016-2018), **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)

Researcher

Taejin Kim (2020)**, Hansol Yoon** (2020-2021)

HONORS & AWARDS

NDPD Best Student Paper Competition at IMECE2021 (2022): Santhakumar Sampath and Prof. Hoon Sohn (advisor) won the first-place winner of the competition with “Spectral Correlation Method for Fatigue Crack Detection Based on Nonlinearly Mixed Ultrasonic Waves” in the Nondestructive Diagnostics and Prognostics Division (NDPD) Best Student Paper Competition at the IMECE2021.

KOFST outstanding paper award (2021): Prof. Hoon Sohn from the Smart Structures and Systems Laboratory received the outstanading presentation award, Sep 10^{th,} by “Development of Automatic Crack Detection Technology in Welded Surface using Laser Active Thermography and CNN Deep Learning”

International Symposium on Precision Engineering and Sustainable Manufacturing (PRESM) 2021 Outstanding Presentation Award (2021): My students, Ikgeun Jeon, Liu Yang, Prof. Hoon Sohn (advisor) from the Smart Structures and Systems Laboratory received the outstanading presentation award, July 23th, by “Development of an Online Melt Pool Depth Estimation Technology for Directed Energy Deposition (DED) 3D Printing Using Coaxial Thermography and Laser Line Scanning System.

The Korean Society for Nondestructive Testing Excellent Paper Presentation Award (2021): My students, Jinho Jang, Prof. Hoon Sohn (advisor), and Prof.Lim Hyungjin from the Smart Structures and Systems Laboratory received the Excellence award by “Long-term memory network-based noise reduction technology for structural safety diagnosis” paper.

The 31st Science and Technology Excellence Paper Award (2021): This annual award is given to person who wrote the paper selected with excellent paper in Korea. Prof.Sohn has been selected as the recipient of the 31st Science and Technology Excellence Paper Award established by the Korean Federation of Science and Technology Societies with “Development of Automatic Crack Detection Technology in Welded Surface using Laser Active Thermography and CNN Deep Learning”, Sep 10th, 2021.

Associate Member of the NAEK (2021): The National Academy of Engineering of Korea (NAEK) proudly elected associate members of their distinguished achievements in original research, and election to NAEK is recognized as one of the highest honors that can accorded a scientist or engineer. (Term: January 1, 2021 - December 31, 2023)

Drone Video Challenge for Civil Infrastructures (2020): Soonkyu Hwang (Post-doctoral researcher) and Prof. Hoon Sohn (advisor) from the Smart Structures and Systems Laboratory received the Excellence award from the recently concluded Drone Video Challenge for Civil Infrastructures (Student Category) during the annual Korean Society of Civil Engineers (KSCE) Convention held in Jeju. The drone presentation demonstrated the ‘Precise diagnosis of large-scaled infrastructure using the UAV-aided vision-infrared integrated inspection system’.

Grand Prize for 2019 KAIST Invention Award (2019): My students, Jaemook Choi, and Junyeon Chung received the best invention award at KAIST, November 6^{h}, for our invention entitled “Development of 6-DOF displacement measurement system for civil infrastructure monitoring” (with 1,500,000 KRW ($1,500 USD) cash award).

National Fire Agency’s Excellent Research Achievement of 2018 (2019): This award is given to a researcher who produced the best research outcomes for the projects sponsored by National Fire Agency, Korea.

Twenty-Five Best R&D Research Award (2018): This award is given to 25 researchers who produced the best research outcomes for the projects sponsored by Ministry of Land, Infrastructure, and Transport.

The 14th Kyung-Ahm Award Engineering Field (2018): This award is annually given only to a single person who have made significant contributions to the common good of society in the engineering field. This award comes with 200,000,000 won ($200,000 USD) cash award.

KAIST's TOP 10 Research Achievements of 2017 (2018): This annual award is given to person at KAIST who had the technology selected as KAIST's top 10 research achievement 2017 (with 3,000,000 KRW ($3,000 USD cash award).

The Order of Industrial Service Merit at the 53th Invention Day (2018): The award is a government award to a person who made a significant contribution in the field of invention.

The Recruit Program for Foreign Experts, China (2017): The program provides selected foreign experts with research subsides, housing allowance, medical insurance, etc during the stay in China.

KAIST, Research Grant Award (2017): This annual award is given only to a single person at KAIST who had the most active funded research (5,000,000 KRW (5,000 USD) cash award).

NAEK, Young Engineers Award (2017): The National Academy of Engineering of Korea (NAEK) proudly recognizes leaders in engineering for their lifetime achievements and their commitment to advancing engineering excellence through innovation in engineering and technology education. Each year, this award bestows 50 Million KRW (50,000 USD) cash awards on only two recipients nationwide.

Outstanding Reviewer Award (2016): This award is given to reviewer in recognition of the high quality and timeliness of reviews for Smart Materials and Structures Journal. This award is given to a very small number of reviewers who are judged by the editorial teams of Smart Materials and Structures Journal to have provided exceptional service to the journal during the year.

KSCE, Excellent Paper Award (2016): Dr. Hyung Jin Lim, my student Yongtak Kim and I won the Excellent Paper Award at 42th Korean Society of Civil Engineers Annual Conference, Jeju, South Korea, October 19-21, 2016 for our paper entitled "Fatigue crack monitoring in a butt welded joint of steel structure using nonlinear ultrasonic modulation".

KSCE, Excellent Paper Award (2016): Prof. Yun-Kyu An, my student Soonkyu Hwang and I won the Excellent Paper Award at 42th Korean Society of Civil Engineers Annual Conference, Jeju, South Korea, October 19-21, 2016 for our paper entitled "Development of a line laser thermal wave imaging technique for fatigue crack inspection in a steel member under dynamic conditions".

The Best Idea Award (2016): My student, Byeongjin Park, received the best idea award by the Minister of Land, Infrastructure and Transport of Korea, at 2015 U-City Idea Competition for the idea entitled "A Drone Based Monitoring Service for Safe U-City Infrastructures". His idea was evaluated as the best idea among 201 applicants.

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 assessment of a 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 Hyundai & KIA motors for 03/01/15-108/31/15, and I was the Primary Investigator of this project. (3,000,000 KRW (3,000 USD) cash award)

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).

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 Inter Academic 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 KRW (150,000 USD 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

* 206 (196 SCI/E, 179 1st/corresponding author) published, 3 accepted, 8 submitted, 11 in preparation
* The corresponding author is underlined.
* H-index (64), Citations (Web of Science 5,23; Google Scholar 20,82), Total Impact Factor (856.04), Average Impact Factor (4.35) (please update this)

In preparation

1. Hansol Yoon, Peipei Liu, Yejun Park, Gwanghyo Choi, Pyuck-Pa Choi, **Hoon Sohn**, "Real-time pulsed-laser-assisted additive manufacturing of Ti-6Al-4V for grain structure control", in preparation for Scientific Reports (IF: 4.380)

2. Jinho Jang, **Hoon sohn**, "Spectral noise reduction using long short-term memory (LSTM) network and its application to fatigue crack detection using nonlinear ultrasonic modulation", in preparation for Mechanical Systems and Signal Processing (Impact factor:5.005)

3. Jun Lee, Donggun Kim, **Hoon Sohn**, "Hydro turbine condition monitoring using 1D convolution neural network", in preparation for Smart Structures and Systems (Impact factor: 3.622)

4. Soonkyu Hwang, Eun-Wha Jung, **Hoon Sohn**, “Quantification and visualization of wet and dry coating thickness using active thermography”, in preparation for Mechanical Systems and Signal Processing (Impact factor: 6.471)

5. Jaemook Choi, Zhanxiong Ma, Kiyoung Kim, **Hoon Sohn**. Continuous Structural Displacement Monitoring Using Accelerometer, Vision, and IR Cameras, In preparation for Measurement Science and Technology (Impact factor: 2.046)

6. Jaemook Choi, Junyeon Chung, Kiyoung Kim, **Hoon Sohn**. “Seismic-induced Permanent Displacement Estimation Combining Acceleration and Computer Vision Measurements”, in preparation for Mechanical Systems and Signal Processing (Impact factor: 6.823)

7. Zhanxiong Ma, Peipei Liu, Jaemook Choi, **Hoon Sohn**, “Structural displacement estimation through the FIR-filter-based fusion of high-sampled acceleration and temporally-aliased low-sampled displacement”, In preparation for Mechanical Systems and Signal Processing (Impact factor: 6.823)

8. Hyeonjin Kim, Hyung Jin Lim, Soonkyu Hwang, **Hoon Sohn**, “Development of an online steel bridge coating defect detection and quantification technique by combined IR and vision images,” In preparation for Engineering Structures (Impact factor: 4.471)

9. Soonkyu Hwang, **Hoon Sohn**, Keunyoung Jang, “Development of UAV-Aided Laser Thermography System for Visualizing Invisible Paint Defects in Steel Bridges,” In preparation for Structural Health Monitoring (Impact factor: 4.870)

10. Santhakumar Sampath, Seungjun Choi, **Hoon Sohn**. “Nondestructive evaluation of defect detection in lithium-ion battery packs using nonlinear high frequency laser ultrasonics.” Journal of Power Sources. (Impact factor: 9.127)

11. Liu Yang, Jack C.P. Cheng, Zhanxiong Ma, Ikgeun Jeon, Peipei Liu, **Hoon Sohn**, “Real-time Layer Height Estimation during Multi-Layer Directed Energy Deposition Using Laser Line Scanner, Vision Camera, and Domain Adaptive Neural Networks”, In preparation for Manufacturing Systems (Impact factor: 5.666)

Submitted

12. Santhakumar Sampath and **Hoon Sohn**, “Non-contact microcrack detection through nonlinear lamb wave mixing and laser line arrays”, submitted to International Journal of Mechanical Sciences (Impact factor: 5.329)

13. Jinho Jang, Hoon Sohn, **Hyunh Jin Lim**, “Spectral noise and data reduction using a long short-term memory network for nonlinear ultrasonic modulation-based fatigue crack detection”, submitted to Ultrasonics (Impact fator: 2.890)

14. Jinho Jang, **Hoon Sohn**, “Online remaining fatigue life estimation of curved steel connection using nonlinear ultrasonic modulation”, submitted to Structural Control and Health Monitoring (Impact fator: 4.819)

15. Seong-Hyun Park, Kiyoon Yi, Peipei Liu, Kyung-Young Jhang, **Hoon Sohn**, “In-situ and Layer-by-layer Grain Size Estimation in Additively Manufactured Metal Components using Femtosecond Laser Ultrasonics”, submitted to Materials Characterization (Impact factor: 4.342)

16. Soonkyu Hwang, Hyunjin Kim, Hyungjin Lim, **Hoon Sohn**, “Development of portable laser thermography system for automated steel bridge paint inspection”, submitted to Structural Health Monitoring (Impact factor: 4.939)

17. Zhanxiong Ma, Jaemook Choi, Jinho Jang, Ohjun Kwon, **Hoon Sohn**, “Simultaneous estimation of submerged floating tunnel displacement and mooring cable tension through FIR filter-based strain and acceleration fusion”, Submitted to Structural Control and Health Monitoring (Impact factor: 4.819)

18. Chisung Kim, Soonkyu Hwang, **Hoon Sohn**, “Automatic weld crack detection and quantification using laser thermography, Mask R-CNN and CycleGAN,” Submitted to Automation in Construction (Impact factor: 7.7)

19. Ikgeun Jeon, Peipei Liu, Hoon Sohn, “Real-time melt pool depth estimation and control during metal-directed energy deposition for porosity reduction”, Submitted to International Journal of Advanced Manufacturing Technology (Impact factor: 3.226)

Accepted

20. Zhanxiong Ma, Jaemook Choi, Liu Yang, **Hoon Sohn**, “Structural displacement estimation using accelerometer and FMCW millimeter wave radar”, Submitted to Mechanical Systems and Signal Processing (Impact factor: 6.823)

21. Peipei Liu, Liu Yang, Kiyoon Yi, Tribikram Kundu, **Hoon Sohn**, “Application of nonlinear ultrasonic analysis for in-situ monitoring of metal additive manufacturing,” Submitted to Structural Health Monitoring (Impact factor: 5.929)

22. Ohjun Kwon, Hyung Jin Lim, **Hoon Sohn**, “Ultrasonic-based tensile force estimation for cylindrical rod at various temperature conditions”, Engineering Structures (Impact factor: 4.471)

Published

23. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**, “Noncontact Cable Tension Force Estimation Using an Integrated Vision and Inertial Measurement System”, Measurement, June 2022 (Impact factor: 3.927)

24. Santhakumar Sampath, **Hoon Sohn**, “Ultrasonic Lamb wave mixing based fatigue crack detection using a deep learning model and higher-order spectral analysis” International Journal of Fatigue, 22th May 2022 (Impact factor: 5.186)

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28. Santhakumar Sampath, **Hoon Sohn**, “Cubic nonlinearity parameter measurement and material degradation detection using nonlinear ultrasonic three-wave mixing”, Ultrasonics, 27th Dec 2022 (Impact factor: 2.89)

29. Peipei Liu, Kiyoon Yi, Yejun Park, **Hoon Sohn**, “Ultrafast nonlinear ultrasonic measurement using femtosecond laser and modified lock-in detection”, Optics and Lasers in Engineering, 23th Oct 2022 (Impact factor: 4.836)

30. Peipei Liu, Hansol Yoon, Kiyoon Yi, Liu Yang, Sangjun Kim, **Hoon Sohn**, “Real-time porosity reduction during metal directed energy deposition using a pulse laser”, Journal of Materials Science & Technology, 20th July 2022 (Impact factor: 8.067)

31. Santhakumar Sampath, **Hoon Sohn**, "Detection and localization of fatigue crack using nonlinear ultrasonic three-wave mixing technique ", International Journal of Fatigue,5th Oct 2021 (Impact factor: 5.186)

32. Jonghyun Jeong, Yukyeong Lee, JeongMin Park, DongJun Lee, Ikgeun Jeon, **Hoon Sohn**, HyoungSeop Kim, Tae-Hyun Nam, Hyokyung Sung, Jae Bok Seol, JungGi Kim, “Metastable δ-ferrite and twinning-induced plasticity on the strain hardening behavior of directed energy deposition-processed 304L austenitic stainless steel,” Additive Manufacturing, 24th Sep 2021 (Impact factor: 10.998)

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37. Kiyoon Yi, Peipei Liu, Seong-Hyun Park, **Hoon Sohn**, “Femtosecond laser ultrasonic inspection of a moving object and its application to estimation of silicon wafer coating thickness”, Optics and Lasers in Engineering, 23th Aug 2021 (Impact factor: 4.836)

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39. Junyeon Chung, **Hoon Sohn**, "Detection and quantification of bolt-Loosening using RGB-D camera and Mask R-CNN ", Smart Structures and Systems, 25th May 2021 (Impact factor: 3.622)

40. Seong-Hyun Park, Kyung-Young Jhang, Hyung-Sop Yoon, **Hoon Sohn**, "Porosity evaluation of additive manufactured parts: ultrasonic testing and eddy current testing", published to Journal of the Korean Society for Nondestructive Testing, Feb 2021 (No SCI)

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43. Santhakumar Sampath, R Dhayalan, Anish Kumar, N.N. Kishore, **Hoon Sohn**, "Evaluation of Material Degradation Using Phased Array Ultrasonic Technique with Full Matrix Capture," Engineering Failure Analysis, 23th Nov 2020 (Impact factor: 2.987)

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46. Jinho Jnag, Peipei Liu, Byunggi Kim, Seung-woo Kim and **Hoon Sohn**, "Silicon wafer crack detection using nonlinear ultrasonic modulation induced by high repetition rate pulse laser", Optics and Lasers in Engineering, Vol.129, pp.106074, Jun 2020 (Impact factor: 4.273) (Acknowledgement: 2019R1A3B3067987, NRF-2019R1C1C1009493, NRF-2012R1A3A1050386)

47. Peipei Liu, Kiyoon Yi and **Hoon Sohn**, "Estimation of silicon wafer coating thickness using ultrasound generated by femtosecond laser", Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, pp.1-21, Jun 2020 (No SCI) (Acknowledgement: 2019R1C1C1009493, 2019R1A3B3067987)

48. Donggun Kim, Younghak Kwak and **Hoon Sohn**, "Accelerated cable-stayed bridge construction using terrestrial laser scanning", Automation in Construction, Vol.117, pp.103269, Sep 2020 (Impact factor: 4.313) (Acknowledgement: 2019R1A3B3067987)

49. Peipei Liu, Jinho Jang, **Hoon Sohn**, "Crack localization by Laser-Induced narrowband ultrasound and nonlinear ultrasonic modulation," Smart Structures and Systems, Vol.25(3), pp.301-310, Mar 2020 (Impact factor: 3.622) (Acknowledgement: 2019R1C1C1009493, 2019R1A3B3067987)

50. Ying Xu, Soonkyu Hwang, Qingyuan Wang, Donggun Kim, Congcong Luo, Jinyeol Yang and **Hoon Sohn**, "Laser active thermography for debonding detection in FRP retrofitted concrete structures", NDT&E an International, Vol.114, pp.102285, Sep 2020 (Impact factor: 2.934) (Acknowledgement: National Natural Science Foundation of China 51778191, Shenzhen Science and Technology Plan Project JCYJ20170307145853300)

51. Soonkyu Hwang, Yun-Kyu An, Jinyeol Yang, **Hoon Sohn**, "Remote inspection of internal delamination in wind turbine blades using continuous line laser scanning thermography," International Journal of Precision Engineering Manufacturing – Green Technology, Vol.7, pp.699-712, Jan 2020 (Impact factor: 4.561) (Acknowledgement: 2019R1A3B3067987)

52. Soonkyu Hwang, Ikgeun Jeon, Gayoung Han, **Hoon Sohn**, and Wonjun Yun, "Visualization and classification of hidden defects in triplex composites used in LNG carriers by active thermography", Smart Structures and

Systems, Vol.24(6), pp.803-812, Dec 2019 (Impact factor: 3.622) (Acknowledgement: (19CTAPC152129-01, Hyundai Heavy Industries Inc.)

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55. Santhakumar Sampath, Bishakh Bhattacharya, Pouria Aryan, **Hoon Sohn**, "A real-time, non-contact method for in-line inspection of oil and gas pipeline using optical sensor array", Sensors, Vol.19(16), pp.3615, Aug 2019 (Impact factor: 3.031)

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57. Qian Wang, Minkoo Kim, **Hoon Sohn**, "A mirror-aided laser scanning system for geometric quality inspection of side surfaces of precast concrete elements Measurement," Measurement, Vol.141, pp.420-428, Jul 2019 (Impact factor: 2.791) (Acknowledgement: 2016R1A6A3A03010355, PolyU 252236/18E, 2017R1A5A1014883)

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61. Suyoung Yang, Jinhwan Jung, Peipei Liu, HyungJin Lim, Yung Yi, Inhwan Bae, **Hoon Sohn**, "Ultrasonic wireless sensor development for online fatigue crack detection and failure warning," Structural Engineering and Mechanics, Vol.69(4), pp.407-416, Jan 2019 (Impact factor: 2.804) (Acknowledgement: CISS2016M3A6A6054195, 13SCIPA01)

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TECHNOLOGY TRANSFER

* An exchange rate of 1 USD = 1,000 KRW is used.
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2. **Hoon Sohn**, Peipei Liu, Ikgeun Jeon, Kiyoon Yi, Seong-Hyun Park, Subin Shin, “Online monitoring and process control during metal additive manufacturing”, European Workshop on Structural Health Monitoring (EWSHM 2022), Palermo, Italy, July 4-7, 2022

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8. **Hoon Sohn**, “Autonomous inspection and continuous monitoring of wind turbines and other structures”, Joint Scientific Seminar on Energy Technologies between KAIST and DTU, Online, November, 11, 2020 **(Invited Presentation)**

9. Seonghyun Park and **Hoon Sohn**, “Application of nondestructive testing techniques to online 3D printing monitoring” (Invited Paper), The 5th International Conference on Structural Health Monitoring and Integrity Management-2020, Online, November, 28-29, 2020 **(Invited Presentation)**

10. **Hoon Sohn**, Soonkyu Hwang, Jiho Park, Gayoung Han, “Mission Impossible: Making Invisible Visible using Noncontact Active Thermography,” International Conference on Digital Image Correlation and Noncontact Experimental Mechanics, Hangzhou, China, October 15-18,2018 **(Keynote Presentation).**

11. **Hoon Sohn**, “Data Driven Decision Making for Smart Infrastructure Monitoring,” Chinese Institute of Civil and Hydraulic Engineering (CICHE) Convention, Taipei, Taiwan, December 1-2,2017 **(Keynote Lecture).**

12. **Hoon Sohn**, “Sensing and Monitoring of Fatigue Cracks,” 9th Australasian Congress on Applied Mechanics, Sydney Australia, November 27-29, 2017 **(Keynote Presentation)**.

13. **Hoon Sohn**, “ICT Technology for Smart Infrastructure Monitoring,” 11th Frontier Scientists Workshop, San Francisco, US, July 23-25, 2017 **(Invited Presentation)**.

14. **Hoon Sohn**, Kiyoung Kim, Jaemook Choi, Junyeon Chung, Gunhee Koo, Namyeol Kwon, Dooyoung Kang, “High Fidelity Online Estimation of Infrastructure Displacement by Fusing Acceleration and GPS-RTK Measurements” 13th Asian Pacific Network of Centers for Research in Smart Structures Technology (ANCRiSST), Tokyo, Japan, july 22-23, 2017 (**Keynote Lecture**).

15. **Hoon Sohn**, “Applications of SHM and NDT techniques: From micro-scale to large-scale structures,” An invited guest lecture for the Asian-Pacific-Europe Summer School on Smart Structures, Yokohama National University, July 22, 2017. (**Invited Guest Lecture**)

16. **Hoon Sohn**, “Development of a High Accuracy and High Sampling Rate Displacement Sensors for Civil Engineering Structures Monitoring,” 7th international Conference on Experimental Vibration Analysis for Civil Engineering Structures, San Diego, US, July 12-14, 2017 **(Keynote Lecture)**.

17. **Hoon Sohn**, Ki-Young Kim, Jae-Mook Choi, Gun-Hee Koo, “High-accuracy and high-sampling rate displacement measurement based on multi-rate data fusion of acceleration and GNSS data,” 3rd International Conference on Structural Health Monitoring and Integrety Management, October 15-17, Chengdu, China, 2016 **(Plenary Speaker)**.

18. **Hoon Sohn**, “A brief introduction to nonlinear ultrasonics damage visualization using nonlinear ultrasonics,” 43rd Review of Progress in Quantitative Nondestructive Evaluation, Atlanta, US, July 16-22, 2016 **(Invited lecture)**.

19. **Hoon Sohn,** “Noncontact Sensing Technology for Structural Health Monitoring and Nondestructive Testing,” Structural Integrety and Failure, Adelaide, Austrailia, July 13-15, 2016 **(Plenary Talk).**

20. **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)**.

21. **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**)

22. **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.

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

24. **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)**

25. **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)**

26. **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)**

27. 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**)

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

29. **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**)

30. **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)**

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

32. **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)**.

33. **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.

34. **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)**

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

36. 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)**

37. **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)**

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

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

40. **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

41. **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)**

42. **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.

43. **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.

44. **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.

45. **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.

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

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

48. **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.

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

50. **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**)

51. **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**)

52. **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)**.

53. **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.

54. **Hoon Sohn**, “Reference-free transducer and structure self-diagnosis,” Korea Electric Power Research Institute, Daejeon, Korea, April 30, 2008.

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

56. **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.

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

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

59. **Hoon Sohn**, “Reference-free transducer and system diagnosis,” Xiamen University, Xiamen, China, October 18, 2006.

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

61. **Hoon Sohn**, “Reference-free transducer and system diagnosis,” University of Cincinnati, Cincinnati, OH, August 14, 2006.

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

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

64. **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.

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

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

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

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

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

70. **Hoon Sohn**, H. Scott Matthews, Irving J. Oppenheim, “Sensing applications for advance infrastructure systems,” Advanced Infrastructure Systems Symposium, Carnegie Mellon University, April 29, 2005.

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

72. **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.

73. **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.

74. **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.

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

76. **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.

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

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

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

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

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

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

83. **Hoon Sohn**, “Overview of structural health monitoring,” Norwegian Defense Research Establishment, Kjeller, Norway, November 23, 2002.

84. **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.

85. **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.

86. **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.

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

88. **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

89. 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.

90. **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)

91. **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**, Peipei Liu, Hyungjin Lim and Byeongjin Park, "Noncontact Nonlinear Ultrasonic Wave Modulation for Fatigue Crack and Delamination Detection," a book chapter in Nonlinear Ultrasonic and Vibro-Acoustical Techniques for Nondestructive Evaluation (Editor: Tribikram Kundu), Springer, 2019.

2. Tribikram Kundu, Jesus N. Eiras, Weibin Li, Peipei Liu and **Hoon Sohn**, "Fundamentals of Nonlinear Acoustical Techniques and Sideband Peak Count," a book chapter in Nonlinear Ultrasonic and Vibro-Acoustical Techniques for Nondestructive Evaluation (Editor: Tribikram Kundu), Springer, 2019.

3. **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), 2017.

4. **Hoon Sohn**, Peipei Liu, "Non-contact laser ultrasonic for SHM in aerospace structures," a book chapter in Structural health monitoring in aerospace structures (Editor: Fuh-Gwo Yuan), Elsevier, 2016.

5. **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.

6. 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.

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

8. **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.

9. 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.

10. 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

11. 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.

12. 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.

13. **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.

14. **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.

15. **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: 1402)**

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 57,623,072.317 USD
* Since 2007, raised a total of 51,321,055.317 USD

1. **Development of a real-time inspection system for welding defects in cylindrical secondary batteries based on active thermal imaging:** Hana Technology, Korea (Funded: 49,300,000 KRW (49,300 USD) for 05/01/22 to 12/31/22)

2. **Development of digital twin system for inspection and management of structures based on augmented reality:** KAIST, Korea (Funded: 10,000,000 KRW (10,000 USD) for 05/01/22 to 12/31/22)

3. **Global technology strategy analysis platform R&D:** Future Science Academy, Korea (Funded: 320,317,000 KRW (320,317 USD) for 04/08/22 to 12/31/22)

4. **Development and commercialization of metal DED 3D printing real-time monitoring and process control technology:** Small and Medium Business Technology Information Promotion Agency, Korea (Funded: 191,500,000 KRW (191,500 USD) for 10/01/21 to 12/19/22)

5. **Review of applicability of coating film thickness measurement technology for marine paints using thermal image analysis:** Samsung Heavy Industries Pangyo R&D Center, Korea (Funded: 10,000,000 KRW (10,000 USD) for 09/01/21 to 12/31/21)

6. **IoT-based urban construction site constant safety management system development:** Korea Regional Information Development Institute, Korea (Funded: 144,000,000 KRW (144,000 USD) for 01/01/21 to 12/31/21)

7. **Displacement sensor performance advancement and measurement data analysis:** Poongsan Corporation, Korea (Funded: 40,000,000 KRW (40,000 USD) for 10/01/20 to 05/31/21)

8. **Advancement and commercialization of automatic condition evaluation equipment for portable steel structures based on artificial intelligence and thermal imaging/vision technology:** Daedeok R&D Special Zone Support Headquarters, Korea (Funded: 115,000,000 KRW (115,000 USD) for 09/01/20 to 08/31/21)

9. **Yeongjong Bridge Linear Laser Thermal Image-based Steel Crack Detection:** Korea Facilities Safety Corporation, Korea (Funded: 21,045,454 KRW (21,045 USD) for 09/01/20 to 10/30/20)

10. **Summer/Fall 2020 URP Program_Research 45th:** KAIST (Funded: 91,000,000 KRW (91,000 USD) for 07/01/20 to 12/31/21)

11. **Development of fatigue crack monitoring PZT sensor system for Incheon grand bridge (Primary Investigator):** Yoosin Engineering Corporation, Korea (Funded: 24,000,000 KRW (24,000 USD) for 03/01/20 to 02/28/21)

12. **Investigation for structural safety diagnosis technology trends and promote commercialization (Primary Investigator):** SQ Engineering, Korea (Funded: 250,000,000 KRW (250,000 USD) for 03/01/20 to 02/28/25)

13. **Theory and methods for evaluation of microstructural fatigue damage (Partner Investigator):** Australian Research Council, Australia (Funded: 450,000,000 KRW (450,000 USD) for 04/19/19 to 04/19/22)

14. **Online nondestructive evaluation for 3D printing process control (Primary Investigator):** National Research Foundation, Korea (Funded: 5,700,000,000 KRW (5,700,000 USD) for 06/01/19 to 02/28/24)

15. **Development of Automatic Crack Detection System for Welded Joints of Membrane Primary Barrier (Primary Investigator):** Hyundai Heavy Industries, Korea (Funded: 100,000,000 KRW (100,000 USD) for 01/02/19 to 31/01/20)

16. **Development of Artificial Intelligence-based Infrared/Vision Inspection Robot for Real-time Evaluation of Steel Structure Coating Conditions (Primary Investigator):** KAIA (Funded: 800,001,000 KRW (800,001 USD) for 04/19/19 to 12/31/21)

17. **Development and commercialization of inspection robot for real-time evaluation of steel structure coating condition with artificial intelligence-based infrared/vision system (Co-Investigator):** Innopolis Daedeok (Funded: 266,667,000 KRW (266,667 USD) for 05/15/19 to 05/14/20)

18. **Commercialization and development of a structural 6 DOF displacement measurement system by fusing an accelerometer and RTK-GNSS data:** Poongsan Corporation (Funded: 100,000,000 KRW (100,000 USD) for 06/01/18 to 5/31/19) (Check this, the funding is not from Poongsan, this is from a govermentn)

19. **Development of IOT-based Monitoring System and Intelligent Self-diagnosis System for Pumped Storage Power Plant (Co-investigator) :** Korea Hydro & Nuclear Power Co.,Korea (Funded : 166,000,000 KRW (166,000 USD) out of total 500,000,000 KRW (500,000 USD) for 02/01/18 to 01/31/20)

20. **Establishment and Simulation of Paint Degradation Diagnosis Solution Model (Primary Investigator)**: POSCO, Korea (Funded: 27,500,000 KRW (27,500 USD) for 10/01/17 to 03/01/18)

21. **Development of a Smart Monitoring System for Seoul~Sejong Expressway (Sub-contractor) :** Korean Society of Civil Engineers, Korea (Funded: 2,500,000 KRW (2,500 USD) for 08/24/17 to 11/21/17)

22. **Research Center for Smart Submerged Floating Tunnel System (Co-investigator) :** National Research Foundation of Korea , Korea (Funded: 1,090,000,000 KRW (1,090,000 USD) out of total 16,345,000,000 KRW (16,345,000 USD) for 06/01/17 to 02/29/24)

23. **The Application Plan Search of The Fourth Industrial Revolution Technology for Infrastructure Maintenance (Primary Investigator):** Korea Advanced Institute of Science and Technology(KAIST) , Korea (Funded: 8,000,000 KRW (8,000 USD) for 06/01/17 to 11/30/17)

24. **Development of Fatigue Crack Diagnosis Technique for Offshore Structures Using Nonlinear Ultrasonic Technique (Primary Investigator)**: Hyundai Heavy Industries, Korea (Funded: 100,000,000 KRW (100,000 USD) for 03/01/15 to 02/28/17)

25. **Development of Micro Crack Detection System using Laser Thermal Imaging (Primary Investigator)**: Samsung Display**,** Korea (Funded: 100,000,000 KRW (100,000 USD) for 03/02/17 to 02/28/18)

26. **Development of Real-Time Autonomous Wall Thinning Detection System for Conveyer Rails (Primary Investigator):** Hyundai Automobile, Korea (Funded: 11,800,317 KRW (11,800.317 USD) for 03/28/06 to 05/31/17)

27. **Commercialization and Global Market Development of 6-DOF Displacement Measurement System for Civil Infrastructure Monitoring (Primary Investigator):** Commercialization Promotion Agency for R&D Outcomes (COMPA), Korea (Funded: 240,000,000 KRW (240,000 USD) for 05/04/16 to 05/03/18)

28. **Real-time Non-contact Damage Visualization and Characterization of Composite Aircraft Structures (Co-investigator):** Boeing, US (Funded: 11,800,317 KRW (11,800 USD) for 03/28/16 to 12/01/16)

29. **Investigation for Urban Safety with the Application of Unmanned Aerial Vehicle (Primary Investigator):** Seoul City, Korea (Funded: 38,800,000 KRW (38,800 USD) out of total 97,000,000 KRW(97,000 USD) for 04/15/16 to 11/10/16)

30. **Requirements for Measurement of Structural Member Stability (Sub-contractor):** Korea Research Institute of Standards and Science (KRISS) (Funded: 30,000,000 KRW (30,000 USD) for 02/01/16 to 10/31/16)

31. **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 2,001,000,000 KRW (2,001,000 USD) for 11/01/15 to 10/31/18)

32. **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: 94,930,000 KRW (94,930 USD) out of total 190,000,000 KRW(190,000USD) for 10/01/15 to 12/31/16)

33. **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)

34. **Development of a Self-Sufficient Wireless Sensor Node Based Structural Health Monitoring System for Civil Infrastructure (Global Frontier Project) (Co-investigator (2012-2016) & Sub-contractor (2017)):** National Research Foundation of Korea (Funded: 420,276,000 KRW (420,276 USD) out of total 4,666,000,000 KRW (4,666,000 USD) for 09/01/12 to 03/31/18)

35. **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)

36. **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)

37. **Development of a Fire-Induced Structural Collapse Alarm System using Smart Ball Sensors (Primary Investigator):** Ministry of Public Safety and Security of Korea (Funded: 2,335,000,000 KRW (2,335,000 USD) for 07/01/2015 to 06/30/2018)

38. **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

39. **Development of a Noncontact Potable Facility Monitoring System (Primary Investigator):** Kia Automobile, Korea (Funded: 84,150,000 KRW (84,150 USD) for 03/01/15 to 10/31/15)

40. **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)

41. **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)

42. **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)

43. **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)

44. **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)

45. **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)

46. **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 01/03/13 to 04/01/14)

47. **Development of a Facility Monitoring System Through Laser Scanning (Primary Investigator):** Kia Automobile (Funded: 80,750,000 KRW (80,750 USD) for 05/01/13 to 08/31/14)

48. **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)

49. **Development of an Automated Non-Destructive Inspection System for Triplex Adhesive Layers In LNG Carriers (Primary Investigator):** Hyundai Heavy Industries (Funded: 504,000,000 KRW (504,000 USD) for 09/01/13 to 12/31/15 and 03/02/16 to 02/28/17 and 08/01/17 to 08/31/18)

50. **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)

51. **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)

52. **Bridge Life-Span Extension Using ICT, Partial Replacement and Low-Carbon Materials (Primary Investigator and Director):** Ministry of Land, Infrastructure and Transportation (Funded: 28,691,670,000 KRW (28,691,670 USD) for 06/01/13 to 05/31/18)

53. **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)

54. **Development of Autonomous Non-Contact Measurement System Combining Laser Doppler Vibrometer And LADAR (Primary Investigator: Junhee Kim who was a research professor working for me):** Korean Ministry of Land, Transport, and Maritime Affairs (Funded: 50,000,000 KRW for 11/19/12 to 05/18/14)

55. **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 11/30/13)

56. **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)

57. **Development of Smart Sensing Technology for Equipment Abnormality Detection (Primary Investigator):** Hyundai Automobile (Funded: 80,750,000 KRW (80,750 USD) for 06/01/12 to 05/31/13)

58. **Characterization of Guided Wave Propagation in Aircraft Structures (Subcontractor):** National Sciences and Engineering Research Council of Canada (Funded: 45,525,000 KR: (45,525 USD) for 09/01/13 to 08/31/15)

59. **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)

60. **Development of Smart Steel Members for Online Steel Structure Monitoring (Primary Investigator):** POSCO Corporation (Funded: 40,999,000 KRW (40,999 USD) for 01/05/11 to 12/31/11)

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

62. **Development of a Real-Time Continuous Monitoring System for Nuclear Power Plants Considering High Temperature and Radiation Environments (Primary Investigator, Co-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)

63. **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)

64. **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)

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

66. **Advancement of Reference-Free Diagnosis for Aircraft Monitoring (Primary Investigator):** US Air Force, Asian Office of Aerospace Research and Development (AOARD) Program (Funded: 30,940 USD (30,940,000 KRW) for 06/01/09 to 05/31/10)

67. **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)

68. **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)

69. **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)

70. **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)

71. **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)

72. **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)

73. **Development of On-board SHM Technologies for Composite Air Vehicles (Primary investigator):** The Boeing Company (Funded: 233,537 USD (233,537,000 KRW) for 08/01/08 to 07/31/11)

74. **Panel Testing, Analysis and Final Report (Primary investigator):** The Boeing Company (Funded: 23,532 USD (23,532,000 KRW) for 11/07/07 to 12/31/07)

75. **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)

76. **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)

77. **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)

78. **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)

79. **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)

80. **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)

81. **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)

82. **International Testbed Opportunity for Bridge Monitoring and Assessment (Co-investigator):** Smart Infra-Structure Technology Center, National Research Foundation of Korea (Funded: 131,450,000 KRW (131,450 USD) for 03/01/07 to 02/28/11)

83. **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)

84. **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)

85. **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)

86. **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)

87. **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)

88. **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)

89. **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)

90. **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)

91. **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)

92. **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)

93. **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)

94. **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)

95. **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)

96. **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)

97. **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)

98. **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)

99. **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)

100. **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)

101. **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)

102. **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)

103. **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)

104. **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)

NEW EXCELLENT TECHNOLOGY CERTIFICATE (건설신기술)

1. **Artificial intelligence-based thermal imaging and vision convergence measurement system for coating film condition evaluation of steel structures** Registration # 933 (2022/04/29) (with SQ Eng.)

2. **Steel bridge fatigue crack automatic inspection technology using nonlinear ultrasonic modulation technique and attached wireless piezoelectric sensor technology** Registration # 880 (2020/01/02)

3. **Displacement measurement technique for long-span bridges using an accelerometer and RTK-GNSS** Registration # 847 (2018/09/18) (with Poongsan FNS)

PROFESSIONAL SERVICES

EXTERNAL

Advisory Committee Member of Seoul Metro (서울교통공사 토목자문단 자문위원 2022.7.1 ~ 2024.6.30)

Advisory Committee Member for Korea Authority of Land & Infrastructure Safety 1st Advisory Committee Infrastructure Subcommittee
(국토안전관리원 제 1 기 국토안전자문위원회 기반시설분과위원 2022.1.1 ~ 2023.12.31)

Civil structure field National Railroad Corporation technical advisory design deliberation subcommittee (토목구조분야 국가철도공단 기술자문설계심의분과위원 2021.7.14 ~ 2021.12.31)

Advisory Committee Member of Expert Working Group for Smart Port Construction R&D Project Planning and Mid- to Long-Term Roadmap (부산 항만공사 스마트 항만건설 연구개발 과제기획 및 중장기 로드맵 수립을 위한 전문가 워킹그룹 자문위원 2021~Present)

Editor in Chief for Journal of the Korean Society for Nondestructive Testing (한국비파괴검사학회지 편집위원장 2020~2022)

Load Policy Review Committee for Ministry of Land, Infrastructure and Transport (도로정책 심의위원회 2018~2020)

Structure and Safety Division Committee Chairperson for The Korea Society for Nondestructive Testing (한국비파괴검사학회 구조안전분과 운영위원회 위원장 2018~2019)

Smart City National Strategic Project National Committee for Ministry of Land, Infrastructure and Transport (스마트시티 국가전략 프로젝트 운영위원회 2018~2021)

Technical Committee for Korea Expressway Corporation (한국도로공사 고속도로 기술자문위원회) (2018-2019)

Information Technology Committee president, Korean Society of Civil Engineers (대한토목학회, 기술정보위원회) (2017-Present)

Review Committee for Next Generation Business Division for the 5th Continuous Acquisition & Life-cycle Support (CALS)System (제 5 차 건설사업정보화(CALS) 기본계획 수립을 위한 차세대사업 분과위원), (2017)

Central Design Review Committee (국토부 중앙건설심의위원, 토목구조 설계심의분가위원) for Ministry of Land, Transportation, Maritimes (2012-2015) , Korea.

External Review Committee for materic (www.materic.or.kr) (2016-2018)

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, International Journal of Machine Tools and Manufacture; 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). SPIE Lifetime Achievement Awards (2018)

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

Director, ILP(Industrial Liaison Program), Industry-University Cooperation Center, KAIST, Korea (2021 – 2023)

Director, Global Strategic Institute, Vision Strategy Center, KAIST, Korea (2020-Present)

Director, 3D Printing Nondestructive Testing Center, KAIST, Korea (2019-2024)

Personnel Committee Member, Institute of Technology Value Creation, KAIST, Korea (2017-Present)

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

Associate Editor, Ultrasonics journal (2019-present)

Editorial Board Member, Sensors, Sensors Network Area (2019-2022)

Associate Editor, ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems (2017-present)

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)

Board Member, Korean Society of Nondestructive Testing (2010- 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, Smart Structures and Systems (2004-present)

PROFESSIONAL AFFILIATIONS

General Member, The National Academy of Engineering of Korea (NAEK) (2021 - Present)

Fellow, SPIE (International Society for Optics and Photonics) (2018-Present)

Member, The Korean Academy of Science and Technology, (2017-Present)

Member, American Society of Mechanical Engineers, (2013-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 (2009-2016)

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) (2007-2017)

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

JOURNAL & CONFERENCE RELATED SERVICES

Special Issue Editor, (1) A special issue on Bridge Technology for Life-span Extension, Structural Engineering and Mechanics, 2017 (2) a special issue on Structural Health Monitoring: Use of Guided Waves and/or Nonlinear Acoustic Techniques, Optical Engineering, 2015, (3) 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, (4) 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, (5) a special issue on innovations in structural identification and condition assessment, Smart Structures and Systems, 2014, (6) a special issue on noncontact measurement technology for structural health monitoring, International Journal of Structural Health Monitoring, 2012-2013, (7) 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 "Smart Sensing and Monitoring", as part of The 2022 International Conference on Advances in Structural Monitoring and Maintenance (ASMM22), Seoul, Korea, August 16-19, 2022 (2) Organized a mini-symposium entitled "Structural Safety", as part of The 2022 Spring Conference of Korean Society of Nondestructive Testing (KSNT 2022), Gyeongju, Korea, May 25-27, 2022 (3)Organized a mini-symposium entitled "Bridge Technology for Life-span Extension and Carbon Emission Mitigation", as part of the 2017 World Congress on Advances in Structural Engineering and Mechanics (ASEM17), Ilsan, Korea, August 28-Sep 1, 2017 (4) Organized a mini-symposium entitled “Infrastructure inspection using unmanned aerial and ground vehicles” as part of the 7th World Conference on Structural Control and Monitoring, Qingdao, China, July 22-25, 2018; (5) 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; (6) 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; (7) 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; (8) organized a Global Policies for Infrastructure Monitoring and Management Workshop with Prof. Shirley Dyke, Douglas Adams at Purdue University, August 16-17, 2012; (9) 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; (10) 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.

Symposium Co-chair (2018-2019) and Chair (2020-2021), Smart Structures + Nondestructive Evaluation, SPIE, Hoon Sohn, KAIST (Korea, Republic of).

Co-chair (2018), the 7th Asia-Pacific Workshop on Structural Health Monitoring, Hong Kong, November 12-15, 2018.

Conference Chair (2018-Present) and Program Committee (2005-2017), the SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems (6174) (Conference Chair: 2018-Present & Program Committee: 2005-2017).and on Health Monitoring and Smart NDE of Structural and Biological Systems (6177) (Program Committee: 2005-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 System-II, Italy, 2012.

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

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. (6) the 8th World Conference on Structural Control and Monitoring (8WCSCM) 2022, Orlando and Online (Hybrid), June 5-9, 2022, (7) European Workshop on Structural Health Monitoring (EWSHM 2022), Palermo, Italy, July 4, 2022 – July 7, 2022, (8) 24th World Conference on Non-Destructive Testing (WCNDT 2024), Songdo Convensia, Incheon, Korea, 27-31 May, 2024

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), Annual Review of Progress in Quantitative Nondestructive Evaluation(2022).

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 COVERAGE

Featured in e 대한경제 "[주목! 신기술] 에스큐엔지니어링 '인공지능 기반 계측시스템'" (06/10/2022)
(https://m.dnews.co.kr/m_home/view.jsp?idxno=202206071905215230891)

Featured in 한국강사신문 "카이스트, Crazy Day 아이디어 공모전 당선작 선정" (05/18/2022)
(http://www.lecturernews.com/news/articleView.html?idxno=97309)

Featured in 2021 동아 건설 부동산 정책포럼. "조끼 작업복에 에어백... 근로자 추락시 생명 구해" (11/19/2021)
(https://www.donga.com/news/article/all/20211118/110325798/1)

Prof.Sohn had an interview on KTV 국민방송.
The interview title is 'A new extension of the digital new deal, the metaverse (디지털 뉴딜의 새로운 확장, 메타버스)'. (10/02/2021) (https://www.ktv.go.kr/program/home/PG2210019D/content/634085)

Featured in YTN, Prof. Sohn and SSSLAB were reported by YTN Science. Program title is '핫클립'. (06/16/2021)
(https://science.ytn.co.kr/hotclip/view.php?s_mcd=1394&key=202104291640402589)

Featured in YTN, Prof. Sohn appeared on YTN Science. Program title is '[과학의 달인]' (05/20/2021)
(https://science.ytn.co.kr/program/program_view.php?s_mcd=0082&s_hcd=0031&key=202105201634194449)

Featured in YTN, Prof. Sohn and SSSLAB were reported by YTN Science. Program title is 'Bravo K-Scientist'. (04/20/2021)
(https://www.youtube.com/watch?v=3hcOxnyIMAk&t=290s)

Featured in 세계일보, “KAIST, 코로나 19 극복 글로벌 협력 방안 모색”, (04/21/2020)
(http://www.segye.com/newsView/20200420509651?OutUrl=naver) (Prof. Sohn participated as moderator)

Featured in 건설경제, “교량 균열 상시 모니터링 기술 나왔다”, (02/18/2020)
(http://www.cnews.co.kr/uhtml/read.jsp?idxno=2020021711275949803 09)

Featured in NAVER, “NRF 기초연구사업 연구자에게 직접 듣는 연구 과제 선정 TIP <KAIST 건설 및 환경공학과 손 훈 교수님>”, (09/18/2019)
(https://blog.naver.com/basic_science/221651701598)

Featured in 세계로컬신문, “소방분야 최우수 연구 수상자로 손훈 카이스트 교수”, (01/22/2019)
(http://www.segyelocalnews.com/news/newsview.php?ncode=1065625174652122)

Featured in etnews, “제 14 회 경암상 수상자에 금종해, 손훈, 권오곤 3 명 선정”, (09/17/2018)
(http://mobile.newsis.com/view.html?ar_id=NISX20180917_0000421105#imadnews)

Featured in etnews, “빅데이터 기반 스마트시티 구조물 모니터링 기술 개발”, (05/03/2018)
(http://www.etnews.com/news/article.html?id=20180502000244)

Featured in GGilbo (금강일보), “2017 KAIST 연구대상에 손훈 교수”, (05/18/2017)
(http://www.ggilbo.com/news/articleView.html?idxno=372248)

Featured in MK (매일경제), “공학한림원 대상에 박진수 LG 화학 부회장, 강병영 손훈 ‘젊은공학인상’ 선정”**,** **(**03/20/2017)
(http://news.mk.co.kr/newsRead.php?&year=2017&no=189288)

Featured in digital times, “구조물 6 자유도 변위 모니터링 시스템”, (02/21/2017)
(http://www.dt.co.kr/contents.html?article_no=2017022102101076788001)

Featured in YTN, “공간다큐 도시, 사람을 품다”, (06/10/16)
(https://www.youtube.com/watch?v=xcX6NdlPsgs&index=152&list=UUhlgI3UHCOnwUGzWzbJ3H5w)

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,” 12/16/2013)
(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, (06/08/2011)
(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” (12/16/2011)
(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” (10/05/2007)
(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.
* No WASET or OMICS related conferences were ever attended.

1. Zhanxiong Ma, Peipei Liu, Jaemook Choi, **Hoon Sohn**, "Structural displacement estimation using high-sampling acceleration and temporally-aliased low-sampling vision measurements", SPIE Smart Structures + Nondestructive Evaluation conference (SPIE 2023), Long Beach, California, United States, March 12-16, 2023

2. Santhakumar Sampath, Seungjun Choi, **Hoon Sohn**, "Noncontact ultrasonic wave mixing with laser line arrays for fatigue crack detection",17th Asia-Pacific Conference on Fracture and Strength and the 13th Conference on Structural Integrity and Failure (AFCFS/SIF 2022), The University of Adelaide, Adelaide, South Australia, December 6-9, 2022

3. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**. "Structural displacement estimation using a low-cost sensing system combining millimeter-wave radar and accelerometer", The 2022 International Conference on Advances in Structural Monitoring and Maintenance (ASMM22), Seoul, South Korea, August 16-19, 2022.

4. Jaemook Choi, Zhanxiong Ma, **Hoon Sohn**. "Continuous structural displacement estimation combining accelerometer, vision and IR cameras", The 2022 International Conference on Advances in Structural Monitoring and Maintenance (ASMM22), Seoul, South Korea, August 16-19, 2022.

5. Peipei Liu, Kiyoon Yi, Hansol Yoon, **Hoon Sohn**, "Real-Time Additive Manufacturing Quality Enhancement in Pulse Laser-Assisted Metal Directed Energy Deposition", 49th Annual Review of Progress in Quantitative Nondestructive Evaluation (QNDE), San Diego, USA, July 25-27, 2022

6. Santhakumar Sampath, **Hoon Sohn** "Non-contact nonlinear wave mixing response of narrowband Lamb waves generated by making a laser beam with line laser array sources, 7th European Conference on Structural Control, July 11, 2022

7. Jinho Jang, **Hoon Sohn**, "Fatigue crack detection of lifting-lug using deep-learning", 8th World Conference on Structural Control and Monitoring (8WCSCM), Orlando, USA, June 5-8, 2022

8. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**, "Structural displacement estimation through the fusion of FMCW millimeter wave radar and accelerometer", The 8th World Conference on Structural Control and Monitoring (8WCSCM), Florida, USA, June 5-8, 2022

9. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**. Displacement and Cable Tension Estimation for Submerged Floating Tunnel Using Acceleration and Strain Measurements, The 2022 Spring Conference of Korean Society of Nondestructive Testing (KSNT 2022), Gyeongju, South Korea, May 25-27, 2022.

10. Jinho Jang, **Hoon Sohn**, "Fatigue crack prognosis of lifting-lug by nonlinear ultrasonic modulation", SPIE. Smart Structures+Nonestructive Evaluation (SPIE 2022), California, USA, March 6-10, 2022

11. **Hoon Sohn**, Peipei Liu, Ikgeun Jeon, Kiyoon Yi, Seong-Hyun Park, Subin Shin, "Online monitoring and process control during metal additive manufacturing", European Workshop on Structural Health Monitoring (EWSHM 2022), Palermo, Italy, July 4-7, 2022

12. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**, "Simultaneous Estimation of Submerged Floating Tunnel Displacement and Mooring Cable Tension Using Accelerometer and Strain Gauge Measurements", The 10th European Workshop on Structural Health Monitoring (EWSHM 2022), Palermo, Italy, July 4-7, 2022

13. Hyeonjin Kim, Soonkyu Hwang, Ikgeun Jeon, Jun Lee, Jun Yeon Chung, Subin Shin, **Hoon Sohn** “Active thermography for inspection, monitoring and control from technology development to commercialization”, 8th World Conference on Strutural Control and Monitoring (8WCSCM), Orlando, Florida, U.S.A, June 5-8, 2022

14. Hail Park, Mr. Seoungho Lim, Kiyoon Yi, Pyuckpa Choi, **Hoon Sohn** “3D Printing of NbCoSn Half-Heusler Thermoelectric Material with Ultra-Low Thermal Conductivity by Introducing Nano Powder and Nano-Pulse Laser”, International Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE 2022), Jeju, Korea, November 6-9, 2022

15. Jeong Jonghyun, Lee Yukyeong, Park Jeong Min, Lee Dong Jun, Jeon Ikgeun, **Hoon Sohn**, Kim Hyoung Seop, Nam Tae-Hyun, Sung Hyokyung, Seol Jae Bok, Kim Jung Gi, “Role of metastable δ-ferrite on the plastic deformation behavior of directed energy deposition-processed 304L austenitic stainless steel”, Alloys for Addtive Manufacturing Symposium 2022 (AAMS22), Bundeswehr University Munich, Neubiberg, Germany, September 12-14, 2022

16. Jinho Jang, **Hoon Sohn**, “Fatigue crack detection of lifting-lug using deep-learning”, 8th World Conference on Structural Control and Monitoring (8WCSCM), Online, June 5-9, 2022

17. Hyeonjin Kim, **Hoon Sohn**, "Development of steel bridge coating condition evaluation system using UV based active thermography and vision technique", QIRT 2022, Paris, France, July 4-8, 2022.

18. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**, "Simultaneous displacement and cable force estimation for submerged floating tunnel based on strain and acceleration measurements", The 11th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2022), Barcelona, Spain, July 11-15, 2022.

19. **Hoon Sohn**, Peipei Liu, Ikgeun Jeon, Seong-Hyun Park, Liu Yang, " Online nondestructive testing for laser metal directed energy deposition" IWSHM 2021, Stanford University, CA, December 7-9, 2021

20. Zhanxiong Ma, Jaemook Choi, **Hoon Sohn**. “Millimeter-wave Radar and Accelerometer Based Structural Displacement Estimation”, The 2021 Technical Conference of Korean Institute of Bridge and Structural Engineers (KIBSE 2021), Online, November 27, 2021

21. Hyeonjin Kim, **Hoon Sohn**, “Development of Portable Paint Assessment Evaluation System for Steel Structure using Active Thermography and Vision-based AI algorithm,” Korea Institute for Structural Maintenance and Inspection Fall Conference, Jeju, November 19-20, 2021.

22. Ohjun Kwon, Hyungjin Lim and **Hoon Sohn**, "Monitoring of cylindrical rod tension force under varying temperature using acoustoelastic effect”, IABSE Conference Seoul 2020: Risk Intelligence of Infrastructures, IBASE Korea, November 9-10, 2021

23. Hyeonjin Kim, Jun Lee, Taejin Kim, **Hoon Sohn**, “Development of Portable Active Thermography and Vision Integrated System for Steel Structure Coating Assessment Evaluation,” The Korea Society for Nondestructive Testing Fall Conference, Yeosu, October 28-29, 2021.

24. Hyeonjin Kim, Soonkyu Hwang, Hyung Jin Lim, **Hoon Sohn**, “Development of Unmanned Vehicle Mounted Active Thermography and Vision Combined System for Coating Assessment Evaluation,” Korea Society of Civil Engineers 2021 Convention, Gwangju, October 20-22, 2021.

25. Hyeonjin Kim, Soonkyu Hwang, **Hoon Sohn**, "Quantification and Visualization of Steel Bridge Paint Thickness Using an Unmanned Inspection Robot with Magnetic Wheels" Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference, Online, May 25-28, 2021

26. **Hoon Sohn**, Zhanxiong Ma, Jae-Mook Choi, "Structural displacement estimation through multi-mode sensor fusion under GNSS denied environments" International Conference on Vibration Engineering 2021, Online, July 23-26, 2021 (Plenary speaker)

27. Junyeon Chung, **Hoon Sohn**, "Development of structural damage inspection and maintenance system based on mixed reality," IWSHM 2021, Stanford University, CA, December 7-9, 2021

28. Santhakumar Sampath, **Hoon Sohn**, "Detection of material nonlinearity using nonlinear ultrasonic three-wave mixing technique," Proc. SPIE 11592, Nondestructive Characterization and Monitoring of Advanced Materials, Online, March 22, 2021

29. Liu Yang, Eden Binega, Jack C.P. Cheng, Ikgeun Jeon, **Hoon Sohn**, "Online Geometry Quality Management During Directed Energy Deposition Using Laser Line Scanner" Solid Freeform Fabrication Symposium 2021, Online, August 2-4, 2021

30. Santhakumar Sampath, and **Hoon Sohn**, "Fatigue crack detection based on nonlinear ultrasonic two-wave mixing technique and spectral correlation method." In Proceedings of International Mechanical Engineering Congress and Exposition (IMECE) 2021, Online, November, 1-4, 2021

31. Peipei Liu, Kiyoon Yi and **Hoon Sohn**, "Porosity Inspection in Metal Directed Energy Deposition Using Femtosecond Laser Based Transient Thermoreflectance Measurement", QNDE 2021, Online, July, 28-30, 2021

32. Ikgeun Jeon, Liu Yang, **Hoon Sohn**, "Development of an real-time melt pool depth estimation technology for directed energy deposition (DED) 3D printing using coaxial thermography and laser line scanning system", Korean Society of Metals and Materials Spring Conference, Online, April, 28-30, 2021

33. Vittorio Palma, Giacomo Iovane, Soonkyu Hwang, Federico M. Mazzolani, Raffaele Landolfo, Haeng Ki Lee, Beatrice Faggiano, and **Hoon Sohn**, "Innovative Technologies for Structural Health Monitoring of SFTs: Combination of InfraRed Thermography with Mixed Reality", EUROSTRUCT 2021- The 1st European Conference of the European Association on Quality Control of Bridges and Structures, Online, November, 28-29, 2020

34. Seonghyun Park and **Hoon Sohn**, "Application of nondestructive testing techniques to online 3D printing monitoring" (Invited Paper), The 5th International Conference on Structural Health Monitoring and Integrity Management-2020, Online, November, 28-29, 2020

35. Santhakumar Sampath, Bishakh Bhattacharya, and **Hoon Sohn**, "Development of novel integrated in-line inspection techniques for pipeline inspection," SPIE, Future Sensing Technologies, Digital Forum, Online Only, 9–13 Novemeber 2020

36. Santhakumar Sampath and **Hoon Sohn**, "Development of a nonlinear ultrasonic three-wave mixing technique for fatigue crack detection", 2020 World Conference on Non-Destructive Testing, Songdo Convensia, Incheon, Korea May 31-June 4, 2021

37. Santhakumar Sampath, and **Hoon Sohn**, "Detection of material nonlinearity using nonlinear ultrasonic three-wave mixing technique," SPIE, Smart Structures + Nondestructive Evaluation, Hilton Long Beach, Long Beach, California, United States, 7 - 10 March 2021

38. Jaemook Choi, Zhanxiong Ma, Kiyoung Kim, **Hoon Sohn**. Structural Displacement Estimation Based on Accelerometer and Camera Data. The 2020 Technical Conference of Korean Institute of Bridge and Structural Engineers (KIBSE 2020), Seoul, South Korea, November 27, 2020.

39. Soonkyu Hwang, **Hoon Sohn**, Hyunjin Kim, Sae Young Jin, and Howoong Shon, “Visualization of steel bridge coating thickness and delamination using UAV based Laser thermography system”, 2020 Korean Society of Civil Engineers Annual Conference, Jeju, Korea, October 21-23, 2020

40. Ohjun Kwon, Hyungjin Lim and **Hoon Sohn**, “Acoustoelastic effect-based tension estimation of anchorage rod in suspension bridge under varying temperature”, 2020 Korean Society of Civil Engineers Annual Conference, Jeju, Korea, October 21-23, 2020

41. Ikgeun Jeon, **Hoon Sohn**, “Development of an online melt pool depth estimation technology for directed energy deposition (DED) 3D printing using coaxial thermography system, Korean Society of Precision Engineering, Annual Conference, Jeju, Korea, September 15, 2020

42. Jaemook Choi, Zhanxiong Ma, **Hoon Sohn** “Structural displacement estimation by fusing accelerometer and vision camera”, ACEM20/Structures20, Seoul, Korea, August 25~29, 2020

43. Junyeon Chung, Chisung Kim, Kiyoon Yi, Juneho Park, Oliver Ramos, **Hoon Sohn**, “Development of thermography based technique for automated detection and classification of defects in semiconductor lead frame”, 2020 Digital Thermography Workshop of Korean Society of Nondestructive Testing, Seoul, Korea, August 14, 2020

44. Andrei Kotousov, Ching-Tai Ng, James Hughes, James Vidler, Aditya Khanna and **Hoon Sohn**, “Theory and methods for the quantitative evaluation of microstructural damage and remaining fatigue life”, APCFS 2020, Jeju, Korea, November 3-7, 2020

45. Peipei Liu, Kiyoon Yi and **Hoon Sohn**, “Coating thickness estimation in silicon wafer using ultrafast ultrasonic measurement”, SPIE Smart Structures + Nondestructive Evaluation, April 22, 2020, Online

46. Ikgeun Jeon, Peipei Liu and **Hoon Sohn**, “Detection of a micro crack on a rotating steel shaft using noncontact ultrasonic modulation measurement”, WCCM 2019, Singapore, December 2, 2019

47. Soonkyu Hwang, Hyunjin Kim, Hyungjin Lim and **Hoon Sohn**, “Development of unmanned vehicle mounted active thermography system for visualizing steel bridge coating thickness and adhesion condition”, The 2019 Technical Conference of Korean Institute of Bridge and Structural Engineers (KIBSE), Seoul, Korea, November 22, 2019

48. Hyungjin Lim, Ohjun Kwon and **Hoon Sohn**, "Stress monitoring based on Lamb waves measurements and a convolutional Neural network", IWSHM 2019, California, USA, September 11, 2019

49. Jun Lee, Donggun Kim and **Hoon Sohn**, "Anomaly Detection of Hydro Turbine using Autoencoder", KKHTCNN, Daejeon, Korea, October 25, 2019

50. Zhanxiong Ma and **Hoon Sohn**, "FIR Filter Based Bridge Displacemnet Estimation Using Strain and Acceleration Measurements", KKHTCNN, Daejeon, Korea, October 24, 2019

51. Junyeon Chung and **Hoon Sohn**, "Loosened Bolt Detection and Quantification Using RGB-depth Sensor and Mask R-CNN”, KKHTCNN, Daejeon, Korea, October 25, 2019

52. **Hoon Sohn**, "UAV-based Automous and Instantaneous Bridge Diagnosis", SHMII-9, Missouri, USA, August 5, 2019

53. Jaemook Choi, Junyeon Chung, Kiyoung Kim, **Hoon Sohn**, “Smart ball based pre-engineered building failure warning”, International Conference on Smart Cities 2019, Seoul, Korea, July 19, 2019

54. Hyungjin Lim and **Hoon Sohn**, "Online prognosis of fatigue crack at welded joints using nonlinear ultrasonic modulation", 2019 SPIE smart structures+nondestructive evaluation, USA, march 7, 2019

55. Ikgeun Jeon, Peipei Liu and **Hoon Sohn**, "Detection of a micro crack on a rotating steel shaft using noncontact ultrasonic modulation measurement", WCCM2019, Singapore, December 2, 2019

56. Zhanxiong Ma and **Hoon Sohn**, "Structural Displacement Estimation by FIR Filter Based Fusion of Strain and Acceleration Measurements", The 29th International Ocean and Polar Engineering Conference, Honolulu, Hawaii, USA, June 16-21, 2019

57. Zhanxiong Ma, **Hoon Sohn**, "Data Fusion Based Structural Displacement Estimation Using Strain and Acceleration Measurements", The Annual Conference of Earthquake Engineering Society of Korea (EESK), Korea, 16-21 March, 2019

58. Donggun Kim and **Hoon Sohn**, "Monitoring of Pre-stressed Concrete Girder Deflection using terrestrial Laser Scanner", The Thirty-first KKHTCNN Symposium on Civil Engineering, Japan, November 22-24, 2018

59. Jun Lee, Ohjun Kwon and **Hoon Sohn**, "Load monitoring at suspension bridge cable anchorage using pulsed eddy current measurement", 7th Asia-Pacific Workshop on Structural Health Monitoring, Hongkong, November 12-15, 2018

60. Soonkyu Hwang, Hyungjin Lim and **Hoon Sohn**, "Line Laser Thermography for Steel Bridge Coating Thickness Quantification", 7th Asia-Pacific Workshop on Structural Health Monitoring, Hongkong, November 12-15, 2018

61. Soonkyu Hwang, Jiho Park, Gayoung Han and **Hoon Sohn**, "Mission Impossible: Making Invisible Visible using Noncontact Active Thermography", International Conference on Digital Image Correlation and Noncontact Experimental Mechanics, China, October 15-18, 2018

62. Junyeon Chung, Kiyoung Kim, Jaemook Choi, **Hoon Sohn,** "Structural displacement estimation technique during earthquake based onmeasured acceleration", Earthquake Engineering Society of Korea conference 2018, South Korea, September 14, 2018

63. Oh-Jun Kwon, Jun Lee and **Hoon Sohn**, "Field application examples of an eddy current based post-tension tendon force monitoring technique", ACEM 2018, Incheon, Korea, August 28-30, 2018

64. Peipei Liu, Jinho Jang and **Hoon Sohn**, "Laser-induced narrowband ultrasound for fatigue crack detection. NDT&E International", The European Workshop on Structural Health Monitoring Series 2018 (EWSHM 2018), Manchester, UK, July 10-13, 2018

65. Soonkyu Hwang, Jiho Park, **Hoon Sohn**, "UAV applicable line laser thermography for imaging of coating thickness and corrosion area in steel structures. NDT&E International", The 7th World Conference on Structure Control and Monitoring (7WCSCM), Qingdao, China, July 22-25, 2018

66. Soonkyu Hwang, Jiho Park, **Hoon Sohn**, "Reference-free Coating Thickness Quantification using Laser Thermography under Various Exterior Temperature Conditions", 14th Quantitative InfraRed Thermography Conference, Berlin, Germany, June 25-29, 2018

67. Hyungjin Lim, Jungwuk Hong, Sangeon Lee, **Hoon Sohn**, "A Study on the Detection of Compressed Micro-crack by Nonlinear Wave Modulation Technique", SPIE Smart Structures/NDE 2018, Denver, USA, March 4-8, 2018

68. Junyeon Chung, Kiyoung Kim, Jaemook Choi and **Hoon Sohn**, "Development of a fire-induced displacement estimation method based on data fusion of a low cost RTK-GPS and accelerometer", The 30th KKHTCNN Symposium on Civil Engineering, Taipei, Taiwan, November 2-4, 2017

69. Jaemook Choi, Kiyoung Kim, Junyeon Chung, Gunhee Koo, Namyeol Kwon and **Hoon Sohn**, “Development of Sensor Module for Seismic response measurement of structures based on RTK-GPS and acceleration data”, Earthquake Engineering Society of Korea conference 2017, Gyeongju, Korea, September 15th, 2017

70. Soonkyu Hwang, Jiho Park, and **Hoon Sohn**, "Development of a noncontact and moving line laser thermography system for paint thickness visualization," The 2017 World Congress on Advances in Structural Engineering and Mechanics (ASEM17), Ilsan(Seoul), Korea, August 28 - September 1, 2017

71. Soonkyu Hwang, Jiho Park, Yun-Kyu An and **Hoon Sohn**, "Line laser scanning thermography system for paint thickness estimation," Asia Pacific of the Prognostics and Health Management Society, Jeju, Korea, July 12 - 13, 2017, 2017

72. Soonkyu Hwang, Jiho Park and **Hoon Sohn**, "Automated inspection system using thermography for uncured damage detection in LNG carrier Triplex bonding layers,” The 2nd Asian Conference on Quantitative Infrared Thermography, Daejeon, South Korea, July 2 - 6, 2017

73. Jiho Park, Soonkyu Hwang and **Hoon Sohn**, "Laser thermography and image processing for under-paint corrosion detection," The 2nd Asian Conference on Quantitative Infrared Thermography, Daejeon, Korea, July 2 - 6, 2017

74. Kiyoung Kim, Jaemook Choi, Junyeon Chung, Gunhee Koo, Namyeol Kwon, Dooyoung Kang and **Hoon Sohn** “High fidelity online estimation of infrastructure displacement by fusing acceleration and GPS-RTK measurements,” 13th AsianPacific Network of Centers for Research in Smart Structures Technology (ANCRiSST), Tokyo, Japan, july 22-23, 2017 (Keynote lecture)

75. Seongwoon Jeong, Rui Hou, Jerome P. Lynch, **Hoon Sohn** and Kincho H. Law, "A distributed cloud-based cyberinfrastructure framework for integrated bridge monitoring," The SPIE Smart Structures/NDE Conference, Portland, OR, USA, March 25-29, 2017

76. Seongwoon Jeong, Rui Hou, Jerome P. Lynch, **Hoon Sohn** and Kincho H. Law, “A hybrid cloud-based distributed data management infrastructure for bridge monitoring,” The 2017 World Congress on Advances in Structural Engineering and Mechanics (ASEM17), Ilsan(Seoul), Korea on August 28 -September 1, 2017

77. Seongwoon Jeong, Rui Hou, Jerome P. Lynch, **Hoon Sohn** and Kincho H. Law,” A big data management and analytics framework for bridge monitoring,” The 11th International Workshop on Structural Health Monitoring.”, USA, California, Stanford, September 12-14, 2017

78. Ji-Mi Kim, Jun Lee and **Hoon Sohn**, “Post-tensioning Tendon Force Loss Detection using Low Power Pulsed Eddy Current Measurement,” 44th Review of Progress in Quantitative Nondestructive Evaluation, Provo, USA, July 16-21, 2017

79. Byeongjin Park and **Hoon Sohn**, “Accelerated defect visualization of microelectronic systems using binary search with fixed pitch-catch distance laser ultrasonic scanning,” 44th Review of Progress in Quantitative Nondestructive Evaluation, Provo, USA, July 16-21, 2017.

80. Byeongjin Park and **Hoon Sohn**, “Accelerated damage visualization using binary search with fixed distance laser ultrasonic scanning,” SPIE International Symposium, Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring, Portland, USA, March 25-29, 2017.

81. Yi Yang, Ching-Tai Ng, Andrei Kotousov, Hyung Jin Lim and **Hoon Sohn**“Fatigue crack detection using nonlinear guided wave generation,” The 15th East Asia-Pacific Conference on Structural Engineering and Construction, Xi’an, China, October 11-13, 2017.

82. Seongheum Yoon, Qian Wang and **Hoon Sohn**, “2017. Optimal placement of precast bridge deck slabs with respect to precast girders using LiDAR.” 34th International Symposium on Automation and Robotics in

Construction and Mining (ISARC 2017), Taipei, Taiwan, June 28 – July 1, 2017.

83. Qian Wang, J.C.P. Cheng and **Hoon Sohn**, "2017. Automatic dimensional quality assessment of rebars on reinforced precast concrete elements using laser scan data." The 3rd International Conference on Civil and Building Engineering Informatics (ICCBEI 2017), Taipei, Taiwan, April 19-21, 2017.

84. **Hoon Sohn**, "Sensing and Monitoring of Fatigue Cracks," 9th Australasian Congress on Applied Mechanics, Sydney Australia, 2017 **(Keynote Presentation)**.

85. Ji-Min Kim, Jun Lee and **Hoon Sohn**, "Automatic Force Loss Detection of Post-Tensioning Tendon using Low Power Pulsed Eddy Current Measurement," QNDE 2017, Utah, US, July 16-21, 2017

86. **Hoon Sohn**, "ICT Technology for Smart Infrastructure Monitoring," 11th Frontier Scientists Workshop, San Francisco, US, July 23-25, 2017 **(Invited Presentation)**.

87. **Hoon Sohn**, "Development of a High Accuracy and High Sampling Rate Displacement Sensors for Civil Engineering Structures Monitoring," 7th international Conference on Experimental Vibratoin Analysis for Civl Engineering Structures, San Diego, US, July 12-14, 2017 **(Keynote Lectures)**.

88. Junyeon Chung, Kiyoung Kim, Jaemook Choi, Gunhee Koo and **Hoon Sohn**, "Fire-induced displacement estimation using Kalman filtering", International Association for Fire Safety Science 12th International Symposium, Lund, Sweden, June 12-16, 2017

89. Peipei Liu and **Hoon Sohn**, "Fatigue crack detection by nonlinear spectral correlation with a wideband input," SPIE International Symposium, Smart Structures and Material Systems + Nondestructive Evaluation and Health Monitoring, Portland, US, March 25-29, 2017.

90. Seongwoon Jeong, Yilan Zhang, Rui Hou, Jerome P. Lynch, **Hoon Sohn** and Kincho H. Law, "A Cloud based Information Repository for Bridge Monitoring Applications," The SPIE Smart Structures/NDE Conference. Las Vegas, NV, USA, March 20-24, 2016.

91. Seongwoon Jeong, Rui Hou, Jerome P. Lynch, **Hoon Sohn** and Kincho H. Law, "Cloud-based cyber infrastructure for bridge monitoring," The 14th International Symposium on Structural Engineering (ISSE-14) Beijing, China, Oct.12-15, 2016.

92. Soonkyu Hwang, Yun-Kyu An and **Hoon Sohn**, "Continuous line laser thermography for damage imaging of rotating wind turbine blades," The 6th Asian Pacific Workshop on Structural Health Monitoring, Hobart, Austrailia, December 7-9, 2016

93. Gunhee Koo, Kiyoung Kim, Jaemook Choi, Jun Yeon Chung and **Hoon Sohn**, "Development of a dynamic displacement measurement system by fusing GPS-RTK and accelerometer data," 29th KKHCNN Symposium, Hongkong, December 3-5, 2016

94. Seongheum Yoon, Qian Wang and **Hoon Sohn,** "Automated Noncontact Quality Assessment of Precast Girder using 3D Laser Scanner", Korean Institute of Bridge and Structural Engineers Annual Conference, Mokpo, Mokpo, Korea, November 10-11, 2016

95. Hyung Jin Lim, Yongtak Kim and **Hoon Sohn**, "Nonlinear ultrasonic modulation based fatigue crack detection for metallic structures using data fusion approach," Korean Institute of Bridge and Structural Engineers Annual Conference, Mokpo, Korea, November 10-11, 2016.

96. Yongtak Kim, Hyung Jin Lim and **Hoon Sohn**, "Fatigue crack monitoring in a butt welded joint of steel structure using nonlinear ultrasonic modulation," The 42th Korean Society of Civil Engineers Annual Conference, Jeju, Korea, October 19-21, 2016. **(Excellent Paper Award)**

97. Jaemook Choi, Kiyoung Kim, Gunhee Koo and **Hoon Sohn**, “Reference-free structural dynamic displacement measurement via single-rate data fusion of velocity and acceleration records”, The 42th Korean Society of Civil Engineers Annual Conference, Jeju, Korea, October 19-21, 2016.

98. Soonkyu Hwang, Yun-Kyu An and **Hoon Sohn**, “Development of a line laser thermal wave imaging technique for fatigue crack inspection in a steel member under dynamic conditions,” The 42th Korean Society of Civil Engineers Annual Conference, Jeju, Korea, October 19-21, 2016. **(Excellent Paper Award)**

99. Gunhee Koo, Kiyoung Kim, Jaemook Choi, Jun Yeon Chung and **Hoon Sohn**, “Application of Kalman filter based displacement measurement system to precise dynamic response measurement,” Korea Institute for Structural Maintenance and Inspection, Daejeon, Korea, October 12-14, 2016

100. Hyung Jin Lim, Ji-Min Kim, Suyoung Yang, Jun Lee, Yongtak Kim and **Hoon Sohn**, “ICT innovations for reducing infrastructure lifecycle cost,” ASCE-Civil Engineering Conference in the Asia Region (CECAR), Hawaii, August 30-September 2, 2016.

101. Timotius Yonathan Sunarsa, Byeonjin Park, Peipei Liu and **Hoon Sohn**, “Noncontact debonding identification in adhesive using guided waves,” The 2016 World Congress on Advances in Civil, Environmental, and Materials Research (ACEM16), Jeju, Korea, August 28-September 1, 2016

102. Qian Wang, Jack C.P. Chen and **Hoon Sohn**, “Automatic Reconstruction of As-built BIM from Laser Scanned Data of Precast Concrete Elements for Dimensional Quality Assessment,” 33nd International Symposium on Automation and Robotics in Construction and Mining (ISARC 2016), Auburn, Alabama, U.S., July 18-21, 2016.

103. 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.

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

105. 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-acoustic modulation,” European Workshop on Structural Health Monitoring, Bilbao, Spain, July 5-8, 2016.

106. **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)**.

107. 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.

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

109. 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.

110. 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

111. Suyoung Yang, Jaehyun Han, Keonjae Lee and **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

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

113. Jaemook Choi, Gunhee Koo, Kiyoung Kim and **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, February 18~19, 2016

114. Seongwoon Jeong, Yilan Zhang, Jerome P. Lynch, **Hoon Sohn** and Kincho H. Law, "A NoSQL-based data management infrastructure for bridge monitoring database", International Workshop on Structural Health Monitoring 2015 (IWSHM 2015). Stanford University, Stanford, CA, USA, September 1-3, 2015.

115. 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.

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

117. 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.

118. 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.

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

120. 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

121. 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.

122. **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**)

123. 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.

124. 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.

125. 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.

126. 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.

127. 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.

128. 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.

129. Min-Koo Kim, Joonwoo Park, Qian Wang, **Hoon Sohn**, 2015. Dimensional quality assessment of atypical precast elements using laser scanning and BIM. 22nd International Workshop on Intelligent Computing in Engineering (EG-ICE 2015), Eindhoven University of Technology, Eindhoven, Netherlands, July 13-15, 2015.

130. 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.

131. 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.

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

133. 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.

134. 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.

135. 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.

136. 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.

137. **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)**

138. 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.

139. 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.

140. **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)**

141. 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.

142. 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.

143. 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

144. **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 Diagnostics, San Diego, CA, March 9-13, 2014. **(Plenary Keynote Presentation)**

145. 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.

146. 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.

147. 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**)

148. 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.

149. 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**).

150. 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**).

151. 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.

152. 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.

153. 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.

154. 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.

155. 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.

156. 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.

157. **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)**

158. 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.

159. 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.

160. 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.

161. 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.

162. **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.

163. 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.

164. 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.

165. 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.

166. 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.

167. 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.

168. 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)**

169. 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.

170. 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.

171. 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.

172. 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.

173. 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.

174. 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.

175. 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.

176. **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)**

177. 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.

178. 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.

179. **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)**

180. 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.

181. 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.

182. 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.

183. 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.

184. 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.

185. 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.

186. 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.

187. 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.

188. 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.

189. 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.

190. 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.

191. 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.

192. 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.

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

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

195. 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.

196. 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.

197. 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.

198. 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.

199. 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.

200. **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.

201. 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.

202. 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.

203. 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.

204. 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

205. 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.

206. 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.

207. 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.

208. 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.

209. 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.

210. 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.

211. 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.

212. **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.

213. 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.

214. 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.

215. 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.

216. 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.

217. **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.

218. **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.

219. 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.

220. 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.

221. 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.

222. 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.

223. **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.

224. 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.

225. 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.

226. 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

227. 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

228. 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

229. 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

230. 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.

231. 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.

232. 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.

233. 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.

234. 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.

235. 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.

236. 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.

237. **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.

238. **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.

239. 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.

240. 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.

241. 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.

242. 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.

243. 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.

244. 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.

245. 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.

246. 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.

247. 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.

248. 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.

249. **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

250. **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**)

251. 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.

252. 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.

253. 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.

254. 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.

255. 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.

256. 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**).

257. **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.

258. 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.

259. 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.

260. 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.

261. 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.

262. 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.

263. 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.

264. 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.

265. 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.

266. 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.

267. **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**)

268. **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)**

269. 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)**

270. 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.

271. **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)**

272. 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

273. 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.

274. 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.

275. 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.

276. 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.

277. 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.

278. 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.

279. 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.

280. **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.

281. **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.

282. 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)**

283. 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.

284. **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.

285. 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**)

286. **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.

287. 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.

288. **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.

289. 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.

290. 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.

291. 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.

292. **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.

293. **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.

294. **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.

295. 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.

296. 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.

297. **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**)

298. 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

299. 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.

300. 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.

301. 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.

302. 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.

303. 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**)

304. 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

305. **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)**.

306. 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.

307. **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.

308. 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.

309. 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.

310. 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.

311. **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.

312. 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

313. 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.

314. 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.

315. **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.

316. 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.

317. 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.

318. 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)**

319. **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.

320. 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.

321. **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.

322. 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.

323. 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.

324. 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.

325. **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.

326. 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.

327. 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.

328. **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.

329. 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.

330. 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.

331. **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.

332. 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)**

333. 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.

334. 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.

335. 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.

336. 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.

337. 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.

338. 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.

339. 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.

340. **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.

341. 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.

342. 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.

343. 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.

344. **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.

345. 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.

346. 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)**

347. 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.

348. 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.

349. 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.

350. **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**).**

351. **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**).**

352. **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).

353. 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.

354. **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).

355. 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)**

356. 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)**

357. 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.

358. 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.

359. 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).

360. 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.

361. 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.

362. 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.

363. 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.

364. **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.

365. **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).

366. **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)

367. 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**).

368. 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).

369. 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.

370. 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.

371. **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).

372. 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.

373. 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.

374. 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)**.

375. Charles R. Farrar, **Hoon Sohn**, "Structural health monitoring issues for earthquake engineering applications," National Research Council, Irvine, CA, March 2002.

376. 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.

377. 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.

378. **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).

379. 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.

380. **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).

381. **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).

382. 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.

383. 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.

384. 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.

385. 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.

386. **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).

387. 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.

388. 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.

389. 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.

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