

Joon-Hyun Lee, Ph.D



Birth Date: May, 1956

Nationality: Korean

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Educations

1983. 2	Mechanical Engineering, Pusan National University (BS)
1986. 3	Mechanical Engineering, Tohoku University, Sendai, Japan (MSc)
1989. 3	Mechanical Engineering, Tohoku University, Sendai, Japan (Ph.D)
2010. 3	Executive Leadership Program, Center for Climate Change, aSSIST University, Seoul, Korea
2010, 8	Advanced Center for Administrative Development (ACAD), Graduate School of Public Administration, Seoul National University, Seoul, Korea

Major Awards

1994, 5	Academic Research Award The Korean Society for Nondestructive Testing, Seoul, Korea
1997, 9	Outstanding Scientist Award The Society of Materials Science, Japan
2000, 9	Yoo-Dam Research Award The Korean Society of Mechanical Engineers, Seoul, Korea
2001, 5	Outstanding Academic Research Award Pusan National University, Busan, Korea
2005, 5	Hyowon Award for Academic-Industry Cooperation Pusan National University, Busan, Korea
2006, 5	Busan Science & Engineering Award

The Metro-city Government of Busan, Korea

2006, 5 **Presidential Award** for Outstanding R & D,
 The Government of the Republic of Korea

2009, 9 **Award for Academic-Industry Cooperation**
 Pusan National University

2010, 5 **Green Leadership Award**, Climate Change Center, Seoul, Korea

Professional Experiences

1989.3 – 1990.8 **Senior Research Scientist**
 Center for Quality Engineering & Failure Prevention,
 Northwestern University, Evanston, IL., U.S.A.

1990.8 – Present **Full Professor (Mechanical Engineering)**
 Pusan National University, Busan, Korea

1998.9 – 2004.8 **Member of Board Directors**, Korean Society for Composite
 Materials, Seoul, Korea

2001.9 – 2005.9 **Advisory Committee Member**
 National Nuclear Security Council, The Republic of Korea

2004.6 – 2008.5 **Head**
 Research Center for Failure Analysis and Reliability (Supported by
 Ministry of Trade, Industry & Energy), Pusan National University

2006.3 – 2009.4 **Member of Board Directors**, Korean Society for Pressure Vessel
 and Piping, Daejeon, Korea

2006.9 – 2008.8 **Korean Representative**, Korea-France Joint Committee for Nuclear
 Energy, Ministry of Science and Technology, The Republic of Korea

2007.2 – 08.1 **Advisory Board Member**
 National Science Technology Council, Ministry of Science and
 Technology, The Republic of Korea

2007.3 – 09.2 **Director**
 Basic Atomic Energy Research Institute (Supported by Ministry of
 Science and Technology), Pusan National University

2007.3 – 09.4 **Chair of School of Mechanical Engineering & Director of Brain
 Korea 21 Program** (Supported by Ministry of Education)
 Pusan National University, Busan, Korea

2007.6 – 2009.5 **Korean Representative**, Korea-Japan Joint committee for Nuclear
 Energy, Korea

2007.10 – 2008.9 **Vice President**, Korean Society for Mechanical Engineers (KSME)

2008.7- 2009.6: **Director World Class University (WCU) Program** (Supported by Ministry of Education) , Pusan National University

2009.5 – 2012.5 **Advisory Board Member**
Korean Renewable Energy Association

2009.5 – 2012.5 **Member of Executive Committee**
Low-Carbon Green Growth National Forum

2009.5 – Present **Member of Executive Committee**
National Energy Forum, The National Academy of Engineering of Korea

2009.5 – 2012.5 **Founding President**, Korea Institute of Energy Technology Evaluation and Planning (KETEP), Seoul, Korea

2009.8 – 2012.5 **Member of Board Directors**, Korean Smart Grid Institute, Seoul, Korea

2010.1 – 2012.12 **Advisory Board Member**, The Korean Society of Energy, Seoul, Korea

2010.5 – 2012.5 **Advisory Committee Member**, The Federation of Korean Industries, Seoul, Korea

2010.5 – 2012.5 **Advisory Committee Member**, United-Korea Conference (UKC 2011)

2012.3 – Present **Senior Member**, The National Academy of Engineering (NAE), Seoul, Korea

2012.6 – Present **President**, Future Energy Policy Institute, Seoul, Korea

2013. 12 -2014.2 **JSPS Invited Professor**, Nagoya University, Nagoya, Japan

2014.1 – 2015 .12 **President**, Korean Society for Nondestructive testing (KSNT), Seoul, Korea

2014.3 – 2015, 3 **President**, Wellness Information Technology (IT) Association, Ministry of Science and Technology, Seoul, Korea

2014.3 – 2015. 3 **Invited Professor**, School of Mechanical and Aerospace Engineering, Seoul National University, Seoul, Korea

2019.3 - Present **Invited Professor**, Precourt Institute for Energy, Stanford University, Stanford, U.S.A.

2021. 8.31 **Service Merit Medal**, The government of Korea

2021.9 - Present **Professor Emeritus**, School of Mechanical Engineering, Pusan National University

2023.3 – Present	Vice President , The Korean Federation of Science and Technology Societies
2024.11 - Present	President , The Institute for Regional Innovation System and Education(RISE) in Busan Metropolitan City

Major International Journal Editor

2001.9 - 2002.9	Guest Editor-in-Chief ,” IEEE Transaction on UFFC”
2005.3 – 2007.2	Editor , “Journal of Structural Integrity & Durability”
2008.10 –Present	Advisory Editor , “Journal of Structural Longevity”
2007.3 – 2009.3	Editor , Journal of Composite Materials” etc.,

Publications

A total of 515 academic journals: 115 in the international journals, 84 in the Korean academic journals, 145 at the international academic conferences and 169 at the Korean academic conferences.

□ Major Books (in English)

- 2011.11. Strategic Roadmap of Technology for CO₂ Reduction in Korea
- 2011. 11. Strategic Roadmap for Resources Development Technology in Korea
- 2009. 5. Strategic Roadmap for Green Energy Technology in Korea
- 2004. 9. Advances in Nondestructive Evaluation, Trans Tech Publication
- 2004. 3. Macro and Microscopic Approach to Fracture (Chap. 10) WIT etc.,

□ Major Publications

“Detection of Source Location in RC columns Using Machine Learning with Acoustic Emission Data” Engineering Structures, Vol. 246, No.2, pp.318-332 (2021.11)

“Detection of Damage Locations and Damage Steps in File Foundations Using Acoustic Emissions with Deep Learning Technology” Frontiers of Structural and Civil Engineering, Vol.15, No.2, pp. 341-364(2021.4)

“A Study on thermal performance of batteries using thermal imaging and infrared radiation”, J. of Industrial and Engineering Chemistry, Vol. 45, pp.360-365 (2017)

“Evaluation on Hydrogen Embrittlement of Material Using Nondestructive Test”, International Journal of Precision Engineering and Manufacturing, Vol.15, No.6, pp.989-993(2014)

“Acoustic Emission and Ultrasonic Wave Characteristics in TIG-welded 316 Stainless Steel”, Metals and Materials International., Vol.20, No.3, pp.483-488(2014)

“Optimum Design Domain of LED-based Solid State Lighting Considering Cost, Energy Consumption and Reliability”, Microelectronics Reliability", Vol. 53, No.3., pp. 435-442 (2013)

“Non-Contact Guided Waves Tomographic Imaging of Plate Like Structures Using probabilistic Algorithm”, Metals Transaction, Vol.53, No.2, pp.330-336(2012)

“AE Evaluation on the Smart Composite Damaged by Thermal Shock”, International Journal of Modern Physics B, Vol.6, pp.658-663 (2012)

Evaluation of Corrosion in Carbon Steel Pipes by Laser-Generated Guided Wave”, ITUAM Symposium on Recent Advances of Acoustic Waves in Solids, Springer Science and Business Media B.V, Vol 26. Pp.87-94(2010)

“Assessment of Wall-Thinning in Carbon Steel Pipe by Using laser-Generated Guided Wave”, Nuclear Engineering and Technology, Vol.42, No.5, pp.546-551(2009)

“High Temperature Characterization of LPS-SiC Based Materials with Oxide Additives”, Journal of Nuclear Materials, Vol.386, pp. 483-486(2009)

“Characteristic Evaluation of Liquid Phase-Sintered SiC Materials by a Nondestructive Technique”, Journal of Nuclear Materials, Vol. 386. pp. 487-490(2009)

“Application of Laser-Generated Guided Waves for Evaluation of Corrosion in Carbon Steel Pipe”, NDT&E International, Vol.42, No.3, pp. 222-227(2009)

“A Study of the Characteristics of the Acoustic Emission Signals for Condition Monitoring

of “Check Valves in Nuclear Power Plants”, Nuclear Engineering & Design, Vol.236, No.13. pp.1411-1421(2006)

□ Major Invited & Plenary Lecture

“Thermal Management of Li Ion Battery for Energy Storage System”, The 44th Japan-US-Canada Advanced Collaborative Education Program (JUACEP) Seminar, Nagoya University, Japan, Feb. 2nd, 2018

“Status and Prospect of NDT Technology for Nuclear Energy Industry in Korea”, The 42nd Annual Review of Progress in Quantitative Nondestructive Evaluation Conference, Minneapolis, MN, U.S.A. July 27th, 2015

“Recent Outcomes and Future Strategy of Korea’s Green Energy Technology”, Green Energy Leader’s Forum, Seoul, Korea, April 18, 2012

“Recent Outcomes and Future Strategy of Korea’s Green Energy Technology”, Asian Pacific Conference on Fracture and Strength-Mechanics and Materials (APCFS-MM), Busan, Korea, May 13th, 2012.

“Energy Technology R&D and International Collaboration between Korea and EU”, 2011 EU Set Plan Conference, Warsaw, Poland, November 28th, 2011.

“Green Energy R&D Strategy of Korea and Korea-Denmark Partnership”, Korea-Denmark Summit Meeting, Copenhagen, Denmark, May 12, 2011.

“Korean Strategies for Climate Change and Green Energy Technology”, International Energy Agency (IEA), Paris, France, November, 10, 2010

“Overview of Korean Policy for Green Energy Technology”, Australia-Korea Symposium on Future Cooperation, Melbourne. Australia, March 17, 2010.

“Introduction to Green Growth Policy in Korea”, The International Renewable Energy Agency (IRENA), Abu Dhabi, United Arab Emirates, May 17, 2010

“Green Growth and Green Energy Technology in Korea”, Harvard University Kennedy School, Boston, U.S.A., October 28th, 2009.

“The Cooperation between Korea and Japan for Green Energy Technology”, New Energy and Industrial Technology Development Organization (NEDO), Yokohama, Japan, November 10, 2009

“Energy R & D Strategy for Low Carbon, Green Growth of Korea”, International Symposium on Low Carbon Technology, Beijing, China, September 18th, 2009.

“Energy technology R & D Policy in Korea and KETEP’s Major Activities, KSEA, Raleigh, U.S.A., July 16, 2009.

“Current Status and Future Strategy of National Energy R & D Program and Overview of Related NDE Research in Korea”, Asian Pacific Conference on Nondestructive Testing, Yokohama, Japan, November 9th, 2009.