

## Joon-Hyun Lee, Ph.D



**Birth Date:** May, 1956

**Nationality:** Korean

**Home Address:** Busan Metropolitan City, Korea

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### **Educations**

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

### **Major Awards**

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

- 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 CO<sub>2</sub> 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 44<sup>th</sup> Japan-US-Canada Advanced Collaborative Education Program (JUACEP) Seminar, Nagoya University, Japan, Feb. 2<sup>nd</sup>, 2018

“Status and Prospect of NDT Technology for Nuclear Energy Industry in Korea”, The 42<sup>nd</sup> Annual Review of Progress in Quantitative Nondestructive Evaluation Conference, Minneapolis, MN, U.S.A. July 27<sup>th</sup>, 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 13<sup>th</sup>, 2012.

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