

# SANG HYUN LEE

126 Jukjeon-dong, Suzi-ku, Yongin-si, Kyeonggi-do, 448-701, South Korea  
Tel) +82-31-8005-3735 E-mail) lshyun00@dankook.ac.kr

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## EDUCATION

**Seoul National University**, Seoul, Korea (South)

PhD of Engineering in Architectural Engineering, 1998~2003

- Thesis: "Nonlinear Vibration Control Algorithms and Performance Evaluation Procedure for Building Structures"

**Seoul National University**, Seoul, Korea (South)

Master of Engineering in Architectural Engineering, 1996~1998

- Thesis: "Vibration Control of Building Structures using Active Stiffness System"

**Seoul National University**, Seoul, Korea (South)

Bachelor of Engineering in Architectural Engineering, 1992~1996

## RESEARCH AND TEACHING INTERESTS

-Design Structural Earthquakes and Wind Resistance Buildings

-Evaluation and reinforcement of seismic performance of buildings

-Design of vibration isolation device

-Health Monitoring Technology

## **PUBLICATION**

1. "Performance Evaluation of Modified Sliding Mode Control Algorithm for Nonlinear Structures", Journal of the Computational Structural Engineering Institute of Korea, 2007, Volume 20, pp 147-155.
2. Jae-Seung Hwang, Sang-Hyun Lee, Ahsan Kareem, "Estimation of modal masses of a structure with a mass-type damping device", Engineering Structures, 2015, Volume 99, 15, pp149-156.
3. Yeong-Min Kim, Seul-Gi Lee, Sang-Hyun Lee, "Evaluation of effective lateral stiffness of a Korean-traditional wooden house with new joint types", Engineering Structures, 2015, Volume 94, 1, pp 113-121.
4. Eunjong Yu, Seung-Nam Kim, Taewon Park, and Sang-Hyun Lee, "Detection of Earthquake-Induced Damage in a Framed Structure Using a Finite Element Model Updating Procedure", The Scientific World Journal, 2014.
5. Kyungkoo Lee, Sang-Hyun Lee, Gee-Cheol Kim, Sung-Sik Woo, "Global vertical resonance phenomenon between steel building and human rhythmic excitations", Journal of Constructional Steel Research, 2014, Volume 92, pp164-174.

## **PRESENTATIONS**

“Hybrid Mass Damper Application to Technomart 21”, On the COSE, Jeju, Republic of Korea, November, 2012

“Performance Evaluation of Tuned Liquid Mass Damper for Reducing Bi-directional Responses of Building Structure”, Korea Association of computational Mechanics, KAIST, Structural engineering and Mechanism , Jeju KAL Hotel, May,2008

"Computation of Optimal Friction of uned Mass Damper for Controlling Base-Excited Structures" International Conference on Computational & Experimental Engineering and Science, Honolulu, Hawaii, March , 2008

"Breakdown mode analysis and reinforcement technology of Korean pagoda" DOCOMOMO Korea International Symposium on the Conservation of Modern Architecture, Dankook.Univ , Republic of Korea, October, 2007

"Design of Semi-Active Tuned Mass Damper for Controlling Seismically Induced Responses of Elastic and Inelastic Structures", International Institute of Accoustics and Vibration, Cairns, Australia, October , 2007

"Forced Vibration Test for Simulating the Earthquake Response of a Real-Scaled Building Structure", SEEBUS2006, Nagoya, Japan, December, 2006

"Shaking Table Test of Nonseismic-Designed Wall-type Structures", EESK, Seoul, Republic of Korea, September, 2006

"Performance Evaluation of the Passive and Semi-active Magneto-Rheological Dampers", MOVIC2006, Daejeon, Republic of Korea, August, 2006

"Experimental Implementation of a Building Structure with a Tuned Liquid Column Damper Based on the Real-Time Hybrid Testing Method", MOVIC2006, Daejeon, Republic of Korea, August, 2006

"Control Responses of Commercial Magnetorheological Damper for Passenger Vehicles", ERMR, Lake Tahoe, Nevada, USA, June, 2006

"Effects of Excitation Characteristics on the Equivalent Linear System of a Building Structure with MR Dampers", ERMR, Lake Tahoe, Nevada, USA, June, 2006

"MR Damper Generating Response-Dependent Frictional Force for Controlling Building Structures Excited by Seismic Load", ERMR, Lake Tahoe, Nevada, USA, June, 2006

"Performance Evaluation of MR Damper in Building Structures Considering Dynamic Soil-Structure Interaction", ERMR, Lake Tahoe, Nevada, USA, June, 2006

"Response Control of a Real-scaled Five-story Structure Using Magneto-rheological Damper", ERMR, Lake Tahoe, Nevada, USA, June, 2006

## TEACHING AND ADVISING EXPERIENCE

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Architecture firing theory, *assisting* in one course 2003~2004

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Structural vibration control *assisting* in one course 2004~2008

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Finite element method *assisting* in one course 2005

- **University of Dankook**

*Teaching* masters for practical and tutorial at the School of Architecture Engineering about Special structure *assisting* in one course 2005~2008

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Engineering mathematics1 *assisting* in one course 2006~

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Smart structure design *assisting* in one course 2006~2009

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Engineering numerical analysis *assisting* in one course 2006~2008

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Reinforced Concrete Structural Engineering *assisting* in one course 2008~

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Architectural Engineering Graduation Design 1 *assisting* in one course 2006~

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about Architectural Engineering Graduation Design 2 assisting in one course 2007~

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about General mathematics1 assisting in one course 2015~

- **University of Dankook**

*Teaching* Bachelor for practical and tutorial at the School of Architecture Engineering about General mathematics2 assisting in one course 2015~

### **Voluntary activities**

- Executive Director, Earthquake Engineering Society of Korea, 2017~
- Executive Director, Wind Engineering Society of Korea, 2017~

### **PROFESSIONAL EXPERIENCE**

Dec.2000 ~ Present	Member, Architectural Institute of Korea
Aug. 2005 ~ Present	Member, Korea Concrete Institute
Oct. 2005 ~ Present	Member, Earthquake Engineering Society of Korea
Mar. 2006 ~ Present	Member, Computational Structural Engineering Institute of Korea
Oct. 2008 ~ Oct. 2008	Consultant, National Disaster Management Research Institute
Sep. 2011 ~ Aug. 2012	Member, Seismic Performance Evaluation Review Committee, Chungcheongnamdo Office of Education
Jan. 2013 ~ Dec. 2013	Member, Seismic Performance Evaluation Review Committee, Sejong City Office of Education

## **RESEARCH EXPERIENCE**

**Dankook University**, Seoul, Korea (South), Research Assistant, June 2008-June 2009

- Performed an experimental research of “Development of residential apartment structure and facility performance opening technology” sponsored by Korea Institute of Construction Technology

**Dankook University**, Seoul, Korea (South), Research Assistant, August 2009-November 2009

- Performed an experimental research of “Creation of school building seismic reinforcement manual using steel” sponsored by Research Institute of Industrial Science & Technology

**Dankook University**, Seoul, Korea (South), Research Assistant, May 2009-February 2010

- Performed an experimental research of “Development of large inelastic structure dispersion control system design technology” sponsored by Research Korea Science and Engineering Foundation

**Dankook University**, Seoul, Korea (South), Research Assistant, October 2010-February 2012

- Performed an experimental research of “Establishment of Seismic Performance Improvement Plan for Reinforced Concrete Buildings in Seoul” sponsored by Research Seoul City

**Dankook University**, Seoul, Korea (South), Research Assistant, 2014 Performed an experimental research of “Construction of analytical model for dynamic stability evaluation of transmission tower structure”

## **SKILLS**

- Architecture Engineer class1 qualified by Korea Industrial Property Corporation

## **HONORS AND AWARDS**

Research Award, The Wind Engineering Institute of Korea, 2017  
Commendation, Korea's Minister of Construction and Transportation, Nov. 2013  
2, Dankook University, 2009  
Commendation, Korea's Minister of Land, Transport and Maritime Affairs, Nov. 2008  
Research Award, Earthquake Engineering Society of Korea, 2006  
Research Award, Computational Structural Engineering Institute of Korea, 2006

## **Recent 5 patents**

1. 10-1755127-0000, Isolation Structural System for Vertical and Horizontal Extension Remodeling, 2017.06.30
2. 10-1735090-0000, Apparatus for Preventing Masonry-Infilled Wall from Falling Sideward by Out-of-plane Force on Wall Using Angles, 2017.05.04
3. 10-1681084-0000, Apparatus for Preventing Masonry-Infilled Wall from Falling Sideward by Out-of-plane Force on Wall Using Tendon, 2016.11.24
4. 10-1681079-0000, Apparatus for Preventing Masonry-Infilled Wall from Falling Sideward by Out-of-plane Force on, 2016.11.24
5. 10-1665073-0000, Multi-action Hybrid Damping Device for Mitigation of Building Vibration, 2016.10.05