

# Curriculum Vitae

## 1. Personal Information

- 1) Name: Ki-Ju Kang
- 2) Date of birth: Dec. 16, 1958
- 3) Nationality: Korea
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- 6) Current Affiliation: School of Mechanical Engineering, Chonnam National University

## 2. Educational Information including Dates

Ph. D., August 1988	Department of Mechanical Engineering Korea Advanced Institute of Science and Technology (Thesis : The Effects of Tensile and Compressive Residual Stresses on Fatigue Crack Growth and Crack Closure Behavior (Advisor : Y.Y. Earmme))
M.S., February 1983	Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology (Thesis : Low Cycle Fatigue of Al 7039 (Advisor : Y.Y. Earmme))
B.S., February 1981	Department of Mechanical Engineering, Chonnam National University

## 3. Professional Experience

April 2000 – Feb. 2001	: Sabbatical Leave at Princeton University, Worked with A.G. Evans
July 1997 - June 1999	: Head of Department of Mechanical Engineering
July 1992 - present	: Professor, Associate Professor, Assistant Professor, Department of Mechanical Engineering, Chonnam National University
July 1991 - June 1992	: Postdoctoral Associate, Engineering Department, Cambridge University, England (Supervisor : N.A. Fleck)
Mar. 1989 - June 1991	: Assistant Professor, Department of Machine Design Engineering, Chonnam National University

Mar. 1987 - Aug. 1988 : Instructor, Department of Industrial Engineering,  
Seongkyunkwan University

#### 4. Honors and Awards

- 1) A paper titled "Method for Measuring Mechanical Behaviors of Thin Films at High Temperature" was selected as a **best paper** in KSME Spring Conference, May, 2002.
- 2) Appointed as a **National Research Laboratory** for Development of Manufacturing Technology for Truss Periodic Cellular Metals
- 3) A paper titled "Design and Manufacture of Creep Tester of Thin Film Form Specimen at high temperature," was selected as a **best paper** in KSME Spring Conference, May, 2006.
- 4) A paper titled "Mechanical Behaviors under Compression in Wire-woven Bulk Kagome Truss PCMs – Part II: Effects of Geometric and Material Imperfections," was selected as a **best paper** in KSME Spring Conference, June, 2007.
- 5) The **best scientist award** from Chonnam National University, December, 2007.
- 6) **Invited talk** titled "Residual Stress Measurements on Thin Films with A Focused Ion Beam Equipment", in ICRS-8: The Eighth International Conference on Residual Stress-8 held at Denver USA, August 6-8, 2008
- 7) **Yudam academic prize** from KSME, November, 2008.
- 8) **Hanwoon prize** from Engineering College, Chonnam National University, December, 2009.
- 9) **A best paper award** from The Korean Federation of Science and Technology Societies for a paper titled "Effect of Imperfection upon Mechanical Behaviors of Wire-woven Bulk Kagome truss PCMs under Shear Loading", July, 2010.
- 10) **Prime minister prize** from Korea Invention Patent Exhibition for a Korea patent No. 10-1029183, December, 2011.
- 11) **Academic prize** from Engineering College, Chonnam National University, December, 2011.
- 12) **Yongbong academic award** from Chonnam National University, June, 2012.

#### 5. Publications

134 papers in journals (88 international) and 256 papers in conference proceedings (79 international)

44 Patents (10 foreign) registered among 59 Patents applied (11 international PCTs, 10 foreign)

#### International Journal Papers since 2010

- 1) Byung-Kon Lee and Ki-Ju Kang, "A Parametric Study on Compressive Characteristics of Wire-woven Bulk Kagome Truss Cores", Composites Structures, Vol.92, pp.445-453, 2010.
- 2) Feng-Xun Li, Jun Ding, Ki-Ju Kang, "Morphological Change Occurring near a Surface Groove On an Alumina Forming Alloy Subjected to Thermal and Mechanical Cycling," Surface and Coatings Technology, Vol.204, Issues 9-10, pp.1461-1468, 2010
- 3) Ji-Eun Choi, Gyoung-Dek Ko and Ki-Ju Kang, "Taguchi Method-Based Sensitivity Study of Design Parameters Representing Specific Strength of Wire-Woven Bulk Kagome under Compression," Composites Structures, Vol.92, pp. 2547–2553, 2010.
- 4) Heonsoo Kim, Jai-Hwang Joo and Ki-Ju Kang, "A Zigzag Formed Truss Core and Its Mechanical Performances," Journal of Sandwich Structures and Materials, Vol. 12, pp.351-368, 2010.

- 5) Jai-Hwang Joo and Ki-Ju Kang, "Modified Octet Truss Cellular Metals Fabricated By Expanded Metal Process," *Journal of Sandwich Structures and Materials*, Vol.12, pp.327-349, 2010.
- 6) S. K. Sharma, G. D. Ko and K. J. Kang, "Strengthening effect of Cr<sub>2</sub>O<sub>3</sub> thermally grown on alloy 617 foils at high temperature," *J. of Nuclear Materials*, Vol. 405, pp.165–170, 2010.
- 7) Insu Jeon, Tadashi Asahina, Ki-Ju Kang, Seyoung Im, Tian Jian Lu, "Finite element simulation of the plastic collapse of closed-cell aluminum foams with X-ray computed tomography," *Mechanics of Materials*, Vol.42, No.3, pp.227-236, 2010.
- 8) Ming-Zhen Li, Günter Stephani and Ki-Ju Kang, "New Cellular Metals with Enhanced Energy Absorption: Wire-woven Bulk Kagome (WBK)-Metal Hollow Sphere (MHS) Hybrids," *Advanced Engineering Materials*, Vol.13, No.1-2, pp.33-37, 2011.
- 9) J.S. Park; J.H. Joo; B.C. Lee; K.J. Kang, "Mechanical Behaviour of Tube-Woven Kagome Truss Cores Under Compression," *Intern J. of Mechanical Sciences*, Vol.53, pp.65-73, 2011.
- 10) J-H. Joo, K-J. Kang, T. Kim, T.J. Lu, "Forced Convective Heat Transfer in All Metallic Wire-Woven Bulk Kagome Sandwich Panels," *Inter. J. of Heat and Mass Transfer*, Volume 54, Issues 25-26, pp. 5658-5662, 2011.
- 11) S.S. Feng, M.Z. Li, J-H. Joo, K-J. Kang, T. Kim, T.J. Lu, "Thermo-mechanical properties of brazed wire-woven bulk Kagome cellular metals for multifunctional applications," *AIAA Journal of Thermophysics and Heat Transfer* Vol.26, No.1 pp.66-74, 2012
- 12) Byung-Chul Lee, Ki-Won Lee, Jun-Hyeung Byun and Ki-Ju Kang, "The compressive response of new composite truss cores," *Composites B*, Vol.43, No.2, pp.317-324, March 2012
- 13) Min-Geun Lee, Gyeong-Deuk Ko, Junye Song and Ki-Ju Kang, "Compressive Characteristics of A Wire-woven Cellular Metal," *Materials Science & Engineering A*, Vol.539, pp.185-193, 2012
- 14) Youngho Park, Sangil Hyun, Ki-Ju Kang, "Structural Analysis on Kagome Trusses under Dynamic External Loadings," *Journal of the Korean Physical Society*, Vol. 60, No. 3, pp.349-355, Feb., 2012.
- 15) Yun-Soo Lee, Byeong-Hoon Yeon, Soong-Keun Hyun, Ki-Ju Kang, "A new fabrication method to improve metal matrix composite dispersibility," *Materials Letters*, Vol.89, pp.279–282, 2012.
- 16) M.G Lee, K.W. Lee, H.K. Hur, K.J. Kang, "Mechanical behaviors of a wire-woven metal under compression," *Composite Structures*, Vol.95, pp.264-277, 2013.
- 17) Ki Won Lee, Jong-Sun Park, Insu Jeon, and Ki-Ju Kang, "Equivalent Material Properties of a Wire-Woven Cellular Core," *Mechanics of Materials*, Vol.57, pp.1-14, 2013.
- 18) Feng-Xun Li, Ki-Ju Kang, "Deformation and cracking near a hole in an oxide forming alloy foil subjected to thermal cycling," *Acta Materialia*, Vol.61, pp.385-398, 2013.
- 19) Feng-Xun Li, Ki-Ju Kang, "Deformation and cracking near a hole in an oxide forming alloy foil subjected to thermal cycling: Part II. Effects of Remote Applied Stress," *Acta Materialia*, Vol.61, pp. 2944–2952, 2013.
- 20) S.K. Sharma, D.Y. Kim, K.J. Kang, "Effect of Annealing on the Growth and the Microstructure of Thermally-grown Oxides on Foils of Alloy 617," *Journal of the Korean Physical Society*, Vol. 63, No. 9, November 2013, pp. 1755 ~ 1759
- 21) M.G. Lee, J.W. Yoon, S.M. Han, Y.S.Suh, K.J. Kang, "In-plane Compression Response of Wire-Woven Metal Cored Sandwich Panels," *Materials & Design*, Vol.55 pp.718-726, 2014.
- 22) M.G. Lee, V.M. Hoang, J.W. Yoon, S.M. Han, Y.S. Suh, K.J. Kang, "Effects of Cell Size and Orientation on Compressive Strength of WBK," *Composite Structures*, Vol.108, pp.635-645, 2014.
- 23) M.G. Lee, J.W. Yoon, S.M. Han, Y.S. Suh, K.J. Kang, "Bending Response of Sandwich Panels With Discontinuous Wire-Woven Metal Cores," *Materials & Design*, Vol.55 pp.707-717, 2014.
- 24) M.G Lee, K.J. Kang, "Feasibility of a wire-woven metal for application as a sandwich core," *International J.*

- of Mechanical Science, Vol. 80, 81-92, 2014.
- 25) X.H. Yang, J.X. Bai, K-J. Kang, T.J. Lu, T. Kim, "Experimental Investigations of Natural Convection in Wire-Woven Bulk Kagome," *Transport in Porous Media*, Vol. 105, pp.1-22, 2014.
  - 26) Hara Kim, Bong Hyun Cho, Hae Gue Hurr, Ki-Ju Kang, "A Composite Sandwich Panel Integrally Woven with Truss Core," *Materials & Design*, Vol.65 pp.231-242, 2014.
  - 27) M.G. Lee, K.J. Kang, "Mechanical Properties of Three Variations of a Wire-woven metal subjected to shear," *International Journal of Solids and Structures*, Vol.51, pp.4504-4518, 2014.
  - 28) Xiaohu Yang, Jiayi Bai, Ki-Ju Kang, Tianjian Lu, Tongbeum Kim, "Effective thermal conductivity of wire-woven bulk Kagome sandwich panels," *Theoretical & Applied Mechanics Letters*, Vol. 4, pp. 051010-1-7, 2014.
  - 29) H.B. Yan, T. Mew, M-G. Lee, K-J. Kang, T.J. Lu, F.W. Kienhofer, T. Kim, "Thermo-Fluidic Characteristics of a Porous Ventilated Brake Disc," *ASME Journal of Heat Transfer*, Vol.137, pp. 022601-1-11, 2015.
  - 30) K.J. Kang, "Wire-woven cellular metals: the present and future", *Progress in Materials Science*, Vol. 69, pp.213–307, 2015.
  - 31) Timothy D. Mew, Ki-ju Kang, Frank W. Kienhofer, Tongbeum Kim, "Transient thermal response of a highly porous ventilated brake disc," *Proc IMechE Part D: J Automobile Engineering*, Vol. 229, pp.674-683, 2015.
  - 32) Seung Chul Han, Jeong Woo Lee, Kiju Kang, "A New Type of Low Density Material; Shellular", *Advanced Materials*, Vol.27, pp.5506-5511, 2015.
  - 33) Min Geun Lee, Jeong Woo Lee, Seung Chul Han, Kiju Kang, Mechanical Analyses of "Shellular", an Ultralow-density Cellular Metal, *Acta Materialia*, Vol. 103, pp.595-607, 2016.
  - 34) Ban Dang Nguyen<sup>1</sup>, Jeong Shik Cho<sup>2</sup>, Kiju Kang, Optimal Design of "Shellular", a Micro-Architected Material with Ultralow Density, *Materials & Design*, Vol.95, pp.490-500, 2016.