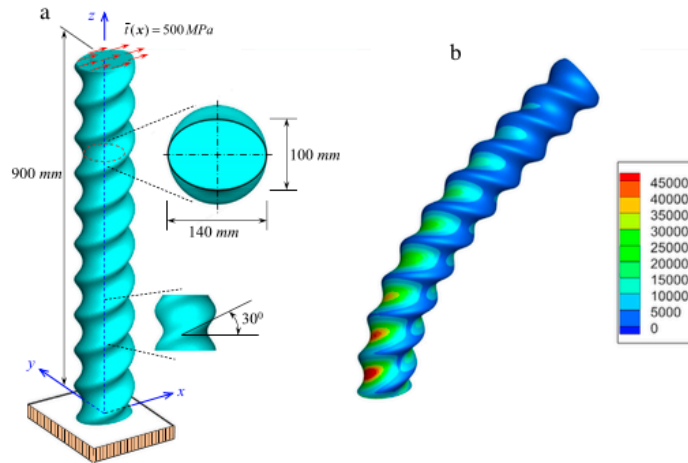




**Professor Hyun-Gyu Kim**



**Fig. 10.** A spiral beam of a Saint-Venant Kirchhoff hyperelastic material: (a) dimensions and boundary conditions, and (b) distribution of von-Mises stress of a reference solution obtained by using a fine mesh of 2,854,993 four-node tetrahedral elements.

From: S. Nguyen-Hoang, D. Sohn, and H.-G. Kim, “A new polyhedral element for the analysis of hexahedral-dominant finite element models and its application to nonlinear solid mechanics problems,” *Computer Methods Applied Mechanics and Engineering*, vol. 324, pp. 248–277, 2017.

See:

<https://scholar.google.co.kr/citations?user=nKgIW60AAAAJ&hl=ko>

[https://www.researchgate.net/scientific-contributions/72860616\\_Hyun-Gyu\\_Kim](https://www.researchgate.net/scientific-contributions/72860616_Hyun-Gyu_Kim)

<https://biography.omicsonline.org/korea/seoul-national-university-of-science-and-technology/hyungyu-kim-194761>

Department of Mechanical and Automotive Engineering  
Seoul National University of Science and Technology, Seoul, South Korea

### Selected Publications:

S.N. Atluri, J.Y. Cho, H.-G. Kim, “Analysis of thin beams, using the meshless local Petrov–Galerkin method, with generalized moving least squares interpolations”, *Comput. Mech.*, 24 (5) (1999), pp. 334-347

Young Jong Kim, Hyun-Gyu Kim and Seyoung Im, “Mode decomposition of three-dimensional mixed-mode cracks via two-state integrals”, *International Journal of Solids and Structures*, Vol. 38, Nos. 36-37, pp 6405-6426, September 2001

Hyun-Gyu Kim, “Interface element method (IEM) for a partitioned system with non-matching interfaces”, *Computer Methods in Applied Mechanics and Engineering*, Vol. 191, Nos. 29-30, pp 3165-3194, May 2002

Jeong-Hun Kim, Hyun-Gyu Kim, Byung-Chai Lee and Seyoung Im, “Adaptive mesh generation by bubble packing method, *Structural Engineering and Mechanics*, Vol. 15, No. 1, pp 135-150, January 2003

Young-Sam Cho, Sukky Jun, Seyoung Im and Hyun-Gyu Kim, “An improved interface element with variable nodes for non-matching finite element meshes”, *Computer Methods in Applied Mechanics and Engineering*, Vol. 194, Nos. 27-29, pp 3022-3046, July 2005

Hyun-Gyu Kim, “A new coupling strategy for fluid-solid interaction problems by using the interface element method”, *International Journal for Numerical Methods in Engineering*, Vol. 81, No. 4, pp 403-428, January 2009

Hyun-Gyu Kim and Hye-Young Kim, "An adaptive procedure based on combining finite elements with meshless methods", *Journal of Mechanical Science and Technology*, Vol. 23, No. 8, pp 2224-2235, August 2009

Yong-Soo Kang, Dongwoo Sohn, Jeong Ho Kim, Hyun-Gyu Kim and Seyoung Im, "A sliding mesh technique for the finite element simulation of fluid-solid interaction problems by using variable-node elements", *Computers & Structures*, Vol. 130, pp 91-104, January 2014

Young-Jo Cheon and Hyun-Gyu Kim, "An equivalent plate model for corrugated core sandwich panels", *Journal of Mechanical Science and Technology*, Vol. 29, No. 3, pp 1217-1223, March 2015

Hyun-Gyu Kim, "A comparative study of hyperelastic and hypoelastic material models with constant elastic moduli for large deformation problems", *Acta Mechanica*, Vol. 225, No. 5, January 2016

Son Nguyen-Hoang, Phuc Phung-Van, Sundararajan Natarajan and Hyun-Gyu Kim, "A combined scheme of edge-based and node-based smoothed finite element methods for Reissner-Mindlin flat shells", *Engineering with Computers*, Vol. 32, No. 2, pp 267-284, April 2016

S. Nguyen-Hoang, D. Sohn, and H.-G. Kim, "A new polyhedral element for the analysis of hexahedral-dominant finite element models and its application to nonlinear solid mechanics problems," *Computer Methods Applied Mechanics and Engineering*, vol. 324, pp. 248–277, 2017.

Thuan Ho-Nguyen-Tan and Hyun-Gyu Kim, "A new strategy for finite-element analysis of shell structures using trimmed quadrilateral shell meshes: A paving and cutting algorithm and a pentagonal shell element", *International Journal for Numerical Methods in Engineering*, Vol. 114, No. 1, pp 1-27, 6 April 2018

Thuan Ho-Nguyen-Tan and Hyun-Gyu Kim, "An interface shell element for coupling non-matching quadrilateral shell meshes", *Computers & Structures*, Vol. 208, pp 151-173, 1 October 2018

Thuan Ho-Nguyen-Tan and Hyun-Gyu Kim, "Polygonal shell elements with assumed transverse shear and membrane strains", *Computer Methods in Applied Mechanics and Engineering*, Vol. 349, pp 595-627, 1 June 2019