



Professor Jinseok Kim

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- <https://wmich.edu/mechanical-aerospace/directory/kim>
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Mechanical and Aerospace Engineering
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Research Interests:

Computational solid mechanics (Finite element method); Non-local mechanics; Plate and shell theories

Selected Publications:

- Kim, J.-S. and Cho, M., “Buckling analysis for delaminated composites using plate bending elements based on higher-order zig-zag theory”, International Journal for Numerical Methods in Engineering, Vol. 55, No. 11, December 2002, pp.1323–1343
- Kim, J.-S.: Reconstruction of First-Order Shear Deformation Theory for Laminated and Sandwich Shells. AIAA Journal, vol. 42, no. 8, 2004, pp. 1685-1697
- Kim, J.S. (2007). Free vibration of laminated and sandwich plates using enhanced plate theories, Journal of Sound and Vibration 308(1-2):268–286

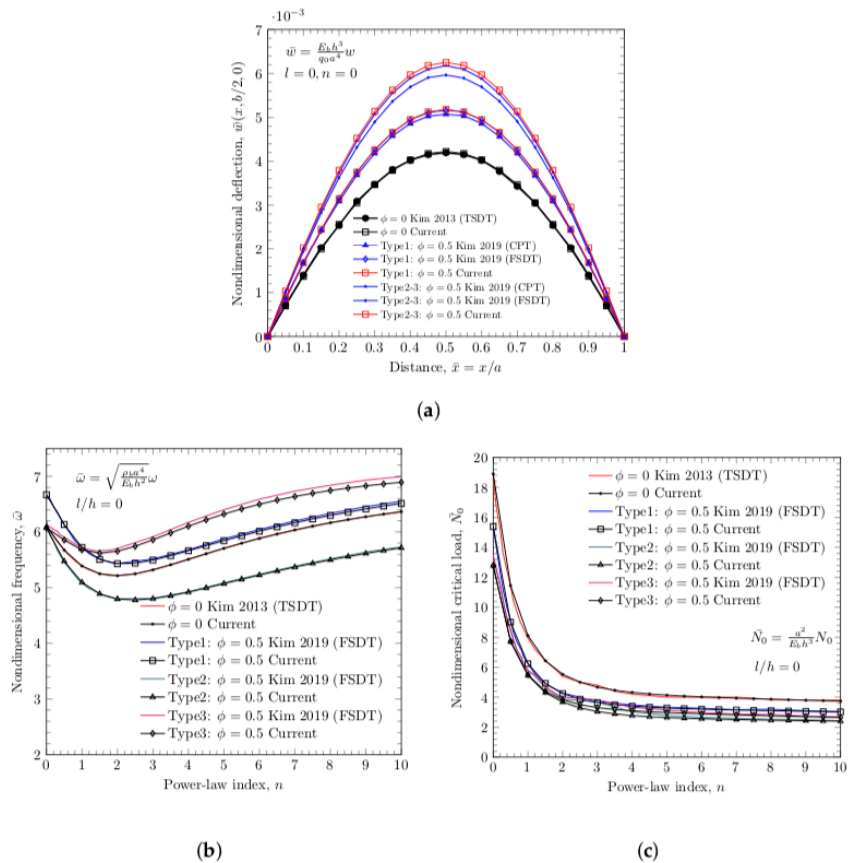


Figure 3. Comparisons of the non-dimensional deflection, $\bar{w}(x, \frac{b}{2}, 0)$ (a), the non-dimensional fundamental frequency, $\bar{\omega}$ (b), and the non-dimensional critical buckling load, \bar{N}_0 (c).

From: Semsi Coskun, Jinseok Kim and Houssam Toutanji, “Bending, free vibration, and buckling analysis of functionally graded porous micro-plates using a general third-order plate theory”, Journal of Composites Science, Vol. 3, 15, 2019, doi:10.3390/jcs3010015

Kim, J.S., Wang, K.W., 2010. Vibration analysis of composite beams with end effects via the formal asymptotic method. *Journal of Vibration and Acoustics*, 132(4):041003. [doi:10.1115/1.4000972]

Jinseok Kim, Shrikant Pattnaik and Jay Kim, "Prediction of Formation of Wavy Surfaces in Rolled Plates by Post-Buckling Analysis", *J. Appl. Mech.*, Vol. 77, No. 4, July 2010, 041005

Kim, J.S., Kweon, J.H. and Choi, J.H., 'Optimization of a stiffened composite cylinder under external hydrostatic pressure for underwater vehicles', in: *Proceedings of the 18th International Conference on Composite Materials (ICCM-18)*, The Korean Society of Composite Materials, Jeju Island, South Korea, 21-26 August, 2011

Reddy, J.N.; Kim, J. A nonlinear modified couple stress-based third-order theory of functionally graded plates. *Compos. Struct.* 2012, 94, 1128–1143

Jinseok Kim and J.N. Reddy, "Analytical solutions for bending, vibration, and buckling of FGM plates using a couple stress-based third-order theory", *Composite Structures*, Vol. 103, pp 86-98, 2013

Jinseok Kim and J.N. Reddy, "A general third-order theory of functionally graded plates with modified couple stress effect and the von Karman nonlinearity: theory and finite element analysis", *Acta Mechanica*, Vol. 226, No. 9, pp 2973-2998, September 2015

Kim, J.-S., et al., High pressure Raman study of layered Mo_{0.5}W_{0.5}S₂ ternary compound. *2D Materials*, 2016. 3: p. 025003.

Akinwande, D., Brennan, C.J., Bunch, J.S., Egberts, P., Felts, J.R., Gao, H., Huang, R., Kim, J.-S., Li, T., Li, Y., et al., 2017. A review on mechanics and mechanical properties of 2d materials – graphene and beyond. *Extreme Mech. Lett*

Jinseok Kim, Krzysztof Kamil Żur and J.N. Reddy, "Bending, free vibration, and buckling of modified couples stress-based functionally graded porous micro-plates", *Composite Structures*, Vol. 209, pp 879-888, 1 February 2019

Semsi Coskun, Jinseok Kim and Houssam Toutanji, "Bending, free vibration, and buckling analysis of functionally graded porous micro-plates using a general third-order plate theory", *Journal of Composites Science*, Vol. 3, 15, 2019, doi:10.3390/jcs3010015

Krzysztof Kamil Żur, Mohammad Arefi, Jinseok Kim and J.N. Reddy, "Free vibration and buckling analyses of magneto-electro-elastic FGM nanoplates based on nonlocal modified higher-order sinusoidal shear deformation theory", *Composites Part B: Engineering*, Vol. 182, Article 107601, 1 February 2020