

**Chun-il Kim, Ph.D. P.Eng.**

**Professor**

**Department of Mechanical Engineering  
University of Alberta, Edmonton, T6G1H9, Alberta, Canada**

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## **Professional Interest**

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Polymeric Composites, Planar & Supported Lipid Bilayer Systems, Micro/Nano-fibrillated Cellulose Composite Materials, Composite Fabrics, Continuum Mechanics, Non-linear Mechanics, Soft Robotics, Plate and Shell Theory, Engineering Rheology (Viscoelasticity), Finite Element Analysis, Statistical Mechanics and Optimization

## **Education**

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**NSERC Post-doctoral Fellow in Mechanical Engineering** 2012 – 2014

**Department of Mechanical Engineering, University of California – Berkeley, U.S.A**

Supervisor: Prof. David J. Steigmann

Area of Research: Fiber-reinforced Hyperelastic Composite, Lipid Bilayer Membrane, Continuum Mechanics, Finite Element Analysis, Plate and Shell Structures

**Ph.D. in Mechanical Engineering** 2007 – 2012

**Department of Mechanical Engineering, University of Alberta, Canada**

Supervisor: Prof. Peter Schiavone, Prof. Chong-Qing Ru

Thesis: “Contribution of Surface Elasticity in Linear Elastic Fracture Mechanics”

Area of Research: Micro and Nano Structure Design and Analysis, Non-linear mechanics, Nano Mechanics, Fracture Mechanics

**M.Sc. in Mechanical Engineering** 2005 – 2007

**Department of Mechanical Engineering, University of Alberta, Canada**

Supervisor: Prof. Peter Schiavone

Thesis: “An Elastic Inhomogeneity with Perfectly Bonded Interface Subjected to a General Class of Nonuniform Remote Loading”

Area of Research: Particulate Reinforced Composite, Solids Mechanics, Plate and Shell Structure Analysis

**B.Sc. in Mechanical Engineering** 1997 – 2004

**Department of Mechanical Engineering, Donga University, South Korea – cum laud**

## **Appointment**

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**Professor** July 2024 – Present

Department of Mechanical Engineering, University of Alberta, Canada

**Associate Professor** July 2020 – June 2023

Department of Mechanical Engineering, University of Alberta, Canada

**Assistant Professor** **July 2014 – June 2020**  
 Department of Mechanical Engineering, University of Alberta, Canada

**Adjunct Professor (Status – Only)** **Feb 2020 – 2024**  
 Department of Mechanical & Industrial Engineering, University of Toronto, Canada

**Sessional Lecturer** **2013 Summer – Fall**  
 Department of Mechanical Engineering, University of California – Berkeley, U.S.A

## Academic Honors and awards

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**Scientist of the Year (2023)-Presidential Commendation from the Federation of Science and Technology of South Korea**

	<b>2023</b>
<b>NSERC postdoctoral Fellowships</b>	<b>2012 – 2014</b>
<b>Andrew Stewart Memorial Graduate Prize</b>	<b>2011</b>
<b>Dissertation Fellowship</b>	<b>2011</b>
<b>Korean Canadian Science Scholarship Foundation (KCSSF) scholarship</b>	<b>2010</b>
<b>First Place Award in Association of Korean Canadian Scientists and Engineers (AKCSE) Research competition</b>	<b>2010</b>
<b>Profiling Alberta's Graduate Students Award</b>	<b>2010</b>
<b>Alberta Ingenuity Graduate Student Scholarship in Nanotechnology</b>	<b>2009 – 2011</b>
<b>Provost Doctoral Entrance Award</b>	<b>2007 – 2009</b>
<b>Mary Louise Imrie Graduate Student Award</b>	<b>2007</b>
<b>Brain Korea 21 (BK 21) Scholarship</b>	<b>2002 – 2003</b>
<b>Third Place Award in Undergraduate Team Project Competition</b>	<b>2003</b>

## Affiliation

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Secretary of Canadian National Committee for **International Union of Theoretical and Applied Mechanics (IUTAM)**

Technical committee (Solids Mechanics) of **Canadian Society of Mechanical Engineers (CSME)**

Science and technology ambassador of **Association of Korean Canadian Scientists and Engineers (AKCSE)**

Board Member & Director (operation) & committee chair (outreach program) of the **Association of Korean Canadian Scientists and Engineers (AKCSE)**

Chair of the **National Math and Science Competition (NMSC)-AKCSE**

Member of the **Association of Professional Engineers and Geoscientist of Alberta (APEGA)**

Member of the **Canadian Society for Mechanical Engineering (CSME)**

Member of **Golden Key International Honor Society**

Former Squadron leader (a sergeant/corporal: an honorable discharge): **South Korea Army, The 5th Army Corps Artillery (H.Q.)**

## Professional Service

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**Associate Editor:** Journal of Mechanical Science and Technology-Springer

**Editorial Board Member:** Coupled Systems Mechanics

**Editorial Board Member:** Multiscale Science Engineering-Springer

**Editorial Board Member:** Composite Materials and Engineering-Techno Press

**Reviewer Editor:** Frontiers in Materials-Smart Materials

**Reviewer:** Journal of Elasticity, Mathematical Reviews, Mathematics and Mechanics of Solids

**Program committee:** International Conference on Materials Science and Engineering (MSE 2024)

**Program committee:** International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2024)

**Program Committee Chair:** International Conference on Advanced Materials and Engineering Materials (ICAMEM2023)

**Program Committee:** International Conference on Ubiquitous Computing (UBIC 2023)

**Program Committee:** International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2023)

**International Technical committee:** International Conference on Advanced Materials and Applications (AMA 2019, 2020)

**International Technical committee:** 2019 International Conference on Advances in Materials, Mechanical and Manufacturing (AMMM 2019, 2020, 2022, 2023)

**Program committee:** Confluence (International Conference on Cloud Computing, Data Science & Engineering) (2016, 2017, 2018, 2019)

**International technical committee:** International Symposium on Material Science and Technology (2016, 2017, 2018)

**International Advisory committee:** International Conference on Soft Computing Applications to Power Systems and Power Electronics" (ICPSPE-2017)

## Supervision of Graduate students

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**Olumide adaolowo** (2023~Current): Ph.D. in progress

**Suparbha Islam** (2019 ~ 2023): Ph.D. (Graduated)

**Eyup Demir** (2017~2023): Ph.D. (Graduated)

**Mahdi Zeidi** (2019 ~ Current): Ph.D. in progress (Candidacy exam passed)

**Abiy Wubneh** (2017 ~ 2023): Ph.D. (Graduated)

**Tsegay Belay** (2012~2016): Ph.D. (Graduated)

**Wenhao Yao** (2018 ~ 2024): Ph.D. (Graduated, CSC scholarship student)

**Hafijur Rahman** (2020~ 2022): M.Sc. (Graduated)

**Marjan Darabi** (2020~ 2023): M.Sc. (Graduated)

**Tahmid Rakin** (2020~ 2023): M.Sc. (Graduated)

**Behzda amirzade** : M.Sc. Joining 2023 summer

**Mahdi Zeidi** (2017~2019): M.Sc. (Graduated)

**Zhe Liu** (2018~2020): M.Sc (Graduated) (CSC scholarship student)

**Ehsan boloury** (2017~2020): M.Sc. (Graduated)

## Research Funding History

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- NSERC Discovery Grant** **2022 – 2027**  
 Microstructure integrated continuum model and numerical scheme for the design and characterization of 2-D microstructured materials: **Total Funding-160,000** (32,000 per annum)
- Canada Foundation for Innovation (CFI) John R. Evans Leaders Fund (JELF)** **2023**  
 A Mechanical Tester for Elastomers and Gels with Bioinspired Patterns of Stiffness Gradient (Co. P.I.)  
 Total award: 76,096
- Alberta Innovates Advance Program Grant** **2023 – 2025**  
 Microstructure integrated continuum model and numerical scheme for the design and characterization of 2-D microstructured materials: **Total Funding-40,000** (20,000 per annum)
- NRC-CNRC Collaborative R&D Initiative** **2022 – 2024**  
 Printed electronics (PE)-based sensors for fall detection and prediction: **Total funding-105,000** (35,000 per annum).
- NSERC Discovery Grant** **2015 – 2022**  
 Mechanics of surfaces: Continuum-based modeling and analysis for biomembranes and 2D fiber materials: **Total Funding-189,000** (27,000 per annum)
- NSERC Collaborative Research and Development Grant** **2017 – 2020**  
 Reinforcing effect of Cellulose Nanocrystals on Polyamide-6 polymeric nano-composite films and electrospun composite nano-fiber yarns (Co. P.I.): **Total Cash: 200,000, Total In-Kind: 64,000**
- Startup Grant** **2017 – 2020**  
 Formulation, development and analysis of an original theory describing the general behavior of biomembranes: **Total funding – 100,000** (25,000 per annum)

## Refereed Journal Papers

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1. Wenhao Yao, Yaoning Sun, **Chun il Kim**, The mechanics of bidirectionally reinforced elastomeric sheet subjected to the combination of lateral pressure and bilateral stretch, *Acta Mechanica* 236 (3), 2089-2118
2. Yao Wenhao, Heung Soo Kim, **Chun Il Kim**, On the Mechanics of a Fiber Network-Reinforced Elastic Sheet Subjected to Uniaxial Extension and Bilateral Flexure *Mathematics* 13 (13), 2201
3. Abhishake Goyal, Dongze Wang, Yanguang Zhang, John Weber, Gaozhi Xiao, Jianping Lu, **Chun-il Kim**, Jun Gao, Salima Alem, Processing Solvents, Poling Conditions, and Fully Solution-Processed Polymeric Multilayer Piezoelectric Devices, *Journal of Polymer Science*, 2025; 63:2903–2912
4. Dong Yoon Kim, MJ Kim, **Chun il Kim**, Gil Ho Yoon, Looseness detection system of bolted joints using a VMD-based nonlinear transformation approach with deep residual network, *Measurement Science and Technology* 36 (2), 026141
5. W Yao, TR Siddiqui,, **Chun il Kim**, A continuum model for the mechanics of elastomeric sheets reinforced with extensible bidirectional fibers resistant to lateral pressure, *International Journal of Solids and Structures* 303, 113002
6. Shiyu Hu, Yanguang Zhang,\* Dongze Wang, John Weber, Shoude Chang, Gaozhi Xiao,Jianping Lu,\* Neil Graddage, Jun Gao, Tahmid Rakin Siddiqui, Suprabha Islam, **Chun-il Kim**, Ye Tao, Fully Solution-Processed Multilayer Piezoelectric Devices", *Advanced Material Technologies*, 202401009
7. M Zeidi, S Islam, CB Park, **Chun il Kim**, A pseudoelastic response of hyperelastic composites reinforced with nonlinear elastic fibrous materials: Continuum modeling and analysis, *International Journal of Engineering Science* 201, 104092

8. W Yao, TR Siddiqui, **Chun il Kim**, The Mechanics of Elastomeric Sheet Reinforced With Bidirectional Fiber Mesh Subjected to Flexure on Boundaries, *Journal of Applied Mechanics*, 91 (7)
9. W Yao, TR Siddiqui, **Chun il Kim**, The mechanics of thin elastic sheet reinforced with fiber mesh subjected to combined flexure and extension, *European Journal of Mechanics-A/Solids* 105, 105234
10. A Wubneh, **Chun il Kim**, C Ayranci, A study on theoretical predictive model and experimental findings of melt-electrospinning process, *Polymers for Advanced Technologies* 35 (2), e6310
11. **Kim, Chun il**, S. Islam and S. Yang, A three-dimensional continuum model for the mechanics of an elastic medium reinforced with fibrous materials in finite elastostatics, *Continuum Mechanics and Thermodynamics*, 36 (1), 119-153
12. MH Rahman, S. Islam, S. Yang, **Kim, Chun il** A shear lag theory integrated with second strain gradient continuum model for the composite reinforced with extensible nano-fibers, *Acta Mechanica*, 234 (9), 4269-4296
13. Zeidi, Mahdi; Park, Chul; **Kim, Chun il**, Synergism effect between nanofibrillation and interface tuning on the stiffness-toughness balance of rubber-toughened polymer nanocomposites: a multiscale analysis, *ACS Applied Materials & Interfaces*, doi: 10.1021/acsami.3c04017
14. S. Islam, S. Yang, **C.I. Kim**, A multiscale continuum model for the mechanics of hyperelastic composite reinforced with nanofibers, *International Journal of Solids and Structures* 267, 112168
15. W. Yao, **C. I. Kim**, A lipid membrane morphology subjected to intra-membrane viscosity and membrane thickness dilation, *Continuum Mechanics and Thermodynamics*, 1-23.
16. MH Rahman, S Yang, **C. I. Kim**, A third gradient-based continuum model for the mechanics of continua reinforced with extensible bidirectional fibers resistant to flexure, *Continuum Mechanics and Thermodynamics*, 1-31.
17. Demir, Eyup Can; McDermott, Mark; **Kim, C.I.** ; Ayranci, Cagri, Towards better understanding the stiffness of nanocomposites via parametric study of an analytical model modeling parameters and experiments, *Journal of Composite Materials*, 57(6), 2023
18. R Abraham, Y Yoon, F Khan, SA Bukhari, **C Kim**, T Thundat, HJ Chung, Measurement of thermal properties of liquid analytes using microfluidic resonators via photothermal modulation, *Sensors and Actuators A: Physical* 347, 113994.
19. Demir, Eyup Can; Benkaddour, Abdelhaq; Aldrich, Daniel; McDermott, Mark; **Kim, C.I.** ; Ayranci, Cagri, A predictive model towards understanding the effect of reinforcement agglomeration on the stiffness of nanocomposites, *Journal of Composite Materials* (2021, Accepted for publication)
20. Abdelhaq Benkaddour, Eyup Can Demir, Nicole C. Jankovic, **C. I. Kim**, Mark T. McDermott, Cagri Ayranci. "A Hydrophobic Coating on Cellulose Nanocrystals Improves the Mechanical Properties of Polyamide-6 Nanocomposites, *Journal of Composite Materials* (2021, Accepted for publication)
21. Abiy Wubneh, Cagri Ayranci, **C.I. Kim**. "A Novel Theoretical Model Development and Simulation of Melt-electrospinning using Kane's and Udwadia-Kalaba Methods. *Advanced Theory and Simulations* (2021, Accepted for publication)
22. M Zeidi, **C.I. Kim**, CB Park. "The role of interface on the toughening and failure mechanisms of thermoplastic nanocomposites reinforced with nanofibrillated rubber, *Nanoscale* (2021),13(47), 20248-20280
23. W. Yao, **C.I. Kim**, "Deformation analysis of nonuniform lipid membrane subjected to local inflammations", *Mathematics and Mechanics of Complex Systems*, 9 (2), 203-229
24. S. Islam, S. Bolouri, **C.I. Kim**. "Mechanics of hyperelastic composites reinforced with nonlinear elastic fibrous materials in finite plane elastostatics", *International Journal of Engineering Science* (2021), 165, 103491.
25. S. Bolouri, **C.I. Kim**. "A model for the second strain gradient continua reinforced with extensible fibers in plane elastostatics", *Continuum Mechanics and Thermodynamics* (2021), 1-25.

26. W. Yao, **C.I. Kim**. “An analysis of lipid membrane morphology in the presence of coordinate dependent non-uniformity”, *Math. Mech. Solids* (2020), [doi.org/10.1177/1081286520939162](https://doi.org/10.1177/1081286520939162).
27. R. Abraham, F.Khan, Syed A. Bukhari, Q. Liu, T. Thundat, H. J. Chung \*, **C.I. Kim** \* “Effect of Surface and Interfacial Tension on the Resonance Frequency of Microfluidic Channel Cantilever”, *Sensors*, 20, 6459; doi:10.3390/s20226459 (2020)
28. Ilaria Rubino, Euna Oh, Sumin Han, Sana Kaleem, Alex Hornig, Su-Hwa Lee, Hae-Ji Kang, Dong-Hun Lee, Ki-Back Chu, Surjith Kumaran, Sarah Armstrong, Romani Lalani, Shivanjali Choudhry, **C.I. Kim**, Fu-Shi Quan, Byeonghwa Jeon & Hyo-Jick Choi. “Salt coatings functionalize inert membranes into high-performing filters against infectious respiratory diseases”, *Scientific Reports – Nature* 10(1), (2020)
29. S. Islam, D. Zhalmuratova, H.J. Chung, **C.I. Kim**\*, “A model for hyperelastic materials reinforced with fibers resistance to extension and flexure”, *Int. J. Solids and Structure*, 193-194, 418-433 (2020)
30. **C.I. Kim**, S. Islam “Mechanics of third-gradient continua reinforced with fibers resistance to flexure in finite plane elastostatics”, *Cont. Mech. Thermodyn.* (DOI: 10.1007/s00161-020-00867-3) (2020)
31. Z. Liu, **C.I. Kim** “Deformation analysis of lipid membranes subjected to general forms of intra-membrane viscous flow and interactions with an elliptical-cross-section substrate”, *Scientific Reports – Nature*, 10 (1), 1-19 (2020)
32. M. Zeidi, **C.I. Kim**, “The effects of intra-membrane viscosity on lipid membrane morphology: complete analytical solution”, *Scientific Reports – Nature*, 8 (1), 12845 (2020)
33. **C.I. Kim**, M. Zeidi, “Gradient elasticity theory for fiber composites with fibers resistant to extension and flexure”, *International Journal of Engineering Science*, 131, 80-99 (2019)
34. S. E. Seyed Bolouri, **C.I. Kim**\*, S. Yang “Linear theory for the mechanics of third-gradient continua reinforced with fibers resistance to flexure”, *Mathematics and Mechanics of Solids*, (2019) 1081286519893408
35. **C.I. Kim**, “Strain-Gradient Elasticity Theory for the Mechanics of Fiber Composites Subjected to Finite Plane Deformations: Comprehensive Analysis”, *Multiscale Science and Engineering*, 1 (2), 150-160 (New Journal in Springer Nature) (2019)
36. **C.I. Kim**, Zhe Liu, “Mechanics of Lipid Membranes under the Influence of Intramembrane Viscosity”, *Mathematical Problems in Engineering*, doi.org/10.1155/2019/3412129 (2019)
37. D. Zhalmuratova, T-G. La, Thanh-Giang, K. Yu, A. Szojka, S. Andrews, A. B. Adesida, **C.I. Kim**, D. Nobes, D. Freed, H. J. Chung, “Mimicking ‘J-shaped’ and anisotropic stress-strain behavior of human and porcine aorta by fabric-reinforced elastomer composites” *ACS Appl. Mater. Interfaces* 2019113633323-33335 (2019)
38. W.K. Jo, **C.I. Kim**, “System Analysis of a Gas Generator Cycle Rocket Engine”, *Int J. Aerospace system Engineering*. 6(2), 11-16, (2019)
39. M. Zeidi, **C.I. Kim** “Finite plane deformations of elastic solids reinforced with fibers resistant to flexure: Complete solution” *Arch. Appl. Mech.* 88 (5), 819-835 (2018)
40. M. Zeidi, **C.I. Kim** “Mechanics of an elastic solids reinforced with bidirectional fiber in finite plane elastostatics: Complete analysis” *Cont. Mech. Thermodynamics* 30 (3), 573-592 (2018)
41. W.K. Jo, **C.I. Kim**, “Comparison of Effectiveness for Performance Tuning of Liquid Rocket Engine”, *Int J. Aerospace system Engineering*. 15 (2), 16-22, (2018).
42. M. Zeidi, **C.I. Kim** “Notes on the Superposed Incremental Deformations in the Mechanics of Lipid Membranes” *Math. Mech. Solids*. doi: 1081286517734608 (2017)
43. M. Zeidi, **C.I. Kim** “Mechanics of fiber composites with fibers resistant to extension and flexure” *Math. Mech. Solids*, doi: 10.1177/1081286517728543 (2017)
44. **C.I. Kim**, “Superposed Incremental Deformations of an Elastic Solid Reinforced with Fibers Resistant to Extension and Flexure”, *Advances in Materials Science and Engineering*, doi.org/10.1155/2018/6501985 (2018)

45. **C.I. Kim**, "A Discussion on the Mechanics of Lipid Membranes: Lagrange multipliers and a singular substrate" *Zeitschrift für angewandte Mathematik und Physik (ZAMP)*. 68 (4), 84, (2017)
46. **T. Belay, C.I. Kim\***, P. Schiavone "Mechanics of lipid bilayer subjected to thickness distension and membrane budding" *Math. Mech. Solids*, 23 (1) 67-84 (2016)
47. **T. Belay, C.I. Kim\***, P. Schiavone "Budding formation of lipid membranes in response to the surface diffusion of transmembrane proteins and line tension." *Math. Mech. Solids*, 22(11), 2091-2107. (2016)
48. **C.I. Kim** "Mechanics of lipid membranes subjected to boundary excitations and an elliptic substrate interactions" *Coupled Systems Mechanics*, doi: 10.12989/mmm.2016.1.3.245 (2016)
49. **T. Bely, C.I. Kim\***, P. Schiavone "Analytical Solution of lipid membrane morphology subjected to Boundary forces on the edges of rectangular membranes", *Continuum Mechanics and Thermodynamics*. 28, 305–315 (2016)
50. **T. Belay, C.I. Kim\***, P. Schiavone "Interaction induced morphological transitions of lipid membranes in contact with an elliptical cross section of a rigid substrate". *Journal of applied mechanics (ASME)*. 83(1): 12 pages (2015)
51. **C.I. Kim**, "On the mechanics of lipid membranes: Constitutive modeling and analysis". *Computational Structural Engineering*. 28(2): 36-44 (2015)
52. **C.I. Kim**, D.J. Steigmann, "Distension-induced Gradient Capillarity in Lipid Membranes", *Continuum Mechanics and Thermodynamics*, 27, 609-621(2014)
53. **C.I. Kim**, P. Schiavone, C-Q. Ru, "Effects of Boundary Reinforcement on Local Singular Fields in Linear Elastic Materials." *Archives of Mechanics*. 65(4): 289-300 (2013)
54. **C.I. Kim**, P. Schiavone, C-Q. Ru, "A Clarification of the Role of Crack-tip Conditions in Linear Elasticity with Surface Effects." *Math. Mech. Solids*. 18(1): 1-8 (2013)
55. **C.I. Kim**, C-Q. Ru, L. J. Sudak, P. Schiavone, "Analysis of Local Singular Fields Near the Corner of a Quarter-Plane with Mixed Boundary Conditions in Finite Plane Elastostatics." *Invited Paper – Special Issue on Int. J. Nonlinear Mech*. 47(2) 151-155 (2012)
56. **C.I. Kim**, P. Schiavone, C-Q. Ru, "Effect of Surface Elasticity on an Interface Crack in Plane Deformations." *Proc. Roy. Soc. London A*. 467: 3530–3549 (2011)
57. **C.I. Kim**, "An Analysis of an Elastic Solid Incorporating a Crack Under the Influences of Surface Effects in Plane & Anti-plane Deformations." *Invited Paper – Special Issue on Interaction and Multiscale Mechanics*. 4(2): 123-137. (2011)
58. **C.I. Kim**, P. Schiavone, C-Q. Ru, "The Effect of Surface Elasticity on a Mode-III Interface Crack." *Arch. Mech*. 63(3): 267–286 (2011)
59. **C.I. Kim**, P. Schiavone, C-Q. Ru, "Analysis of Plane-Strain Crack Problems (Mode I and Mode II) in the Presence of Surface Elasticity." *J. Elasticity*. 104(1): 397–420 (2011)
60. **C.I. Kim**, P. Schiavone, C-Q. Ru, "The Effects of Surface Elasticity on an Elastic Solid with Mode-III Crack: Complete Solution." *ASME J. Appl. Mech*. 77: 021011-1-021011-7 (2010)
61. **C.I. Kim**, P. Schiavone, C-Q. Ru, "Analysis of a Mode-III Crack in the Presence of Surface Elasticity and a Prescribed Non-Uniform Surface Traction." *Z. angew. Math. Phys*. 61(3): 555–564 (2010)
62. **C.I. Kim**, P. Schiavone, "Finite Plane Deformations of a Three-phase Circular Inhomogeneity-Matrix System." *J. Math. Anal. Appl*. 353: 161–171 (2009)
63. **C.I. Kim**, P. Schiavone, "An Elliptic Inhomogeneity Subjected to a General Class of Nonuniform Remote Loadings in Finite Elasticity." *Math. Mech. Solids*. 14(4): 421-442 (2009)
64. **C.I. Kim**, P. Schiavone, "Eshelby's Conjecture in Finite Plane Elastostatics." *Q. Jl. Mech. Appl. Math*. 61(1): 63-73 (2008)
65. **C.I. Kim**, P. Schiavone, "Designing an Inhomogeneity with Uniform Interior Stress in Finite Plane Elastostatics." *Acta. Mech*. 197(3): 285-299 (2008)
66. **C.I. Kim**, P. Schiavone, "A Circular Inhomogeneity Subjected to Nonuniform Remote Loading in Finite Plane Elastostatics." *Int. J. Nonlinear Mech*. 42(8): 989-999 (2007)

## Peer-reviewed conference proceedings

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1. **C.I. Kim**, S. Islam, S. E. S. Bolouri, Z. Liu, "Mechanics of higher gradient continua in the application of microstructured materials", Korea Multi-scale Mechanics 2019 Symposium (KMSM 2019), Seoul, Korea, (2019)
2. D. Eyup, **C.I. Kim**, A. Cagri, "Production and Characterization of CNC reinforced polyamide-6 nano composites films", 11th Canadian International Conference on Composites CANCOM 2019, Kelowna, BC Canada, (2019)
3. **C.I. Kim**, M. Zeidi, "Morphological transitions of lipid membranes subject to intra-membrane viscous flow and substrate interactions", Canada-Korea Conference and Technology (CKC 2018), Vancouver, BC, Canada, (2018)
4. **C.I. Kim**, M. Zeidi, "Mechanics of bidirectional fiber composites with fibers resistant to extension and flexure. The 2018 World Congress of Advances in Civil, Environmental & materials Research, (ACEM18), Songdo, Incheon, Korea, 28-31, (2018)
5. **C.I. Kim**, M. Zeidi, "Strain-gradient theory of an Elastic solids reinforced with bidirectional fiber in finite plane elastostatics", Canada-Korea Conference and Technology (CKC 2018), Vancouver, BC, Canada, (2018)
6. **C.I. Kim**, E. S. Bolouri, Z. Liu, "Theory of higher order continua in the application of micro-structured materials", Korea Multi-scale Mechanics 2018 Symposium (KMSM 2018), Jeonju, Korea, (2018).
7. **C.I. Kim**, T. Belay and Peter Schiavone, "Mechanics of lipid membranes: Superposed incremental deformations, vesicle formations, thickness distension", The 2017 World Congress on Advances in Civil, Environmental & Materials Research (ACEM 17), Ilsan, Korea (2017)
8. **C.I. Kim**, "On the Role of Surface Effects in the Linear Elastic Fracture Mechanics". SIAM 2017, Pittsburgh, USA (2017)
9. **C.I. Kim**, T. Belay and P. Schiavone, "On the mechanics of lipid membranes: budding formation, diffusion of transmembrane proteins and line tension". The 2016 World Congress on Advances in Civil, Environmental & Materials Research (ACEM 16), Jeju, Korea (2016)
10. T. Belay, **C.I. Kim**, and P. Schiavone. "The role of line tension on budding formation induced by diffusion of proteins on lipid bilayer, The 24th International Congress of Theoretical and Applied Mechanics (ICTAM 2016), Montreal, Canada (2016)
11. **C.I. Kim** and D.J. Steigmann "Continuum based modeling and analysis of biomembranes: thickness distension and boundary interactions". International Symposium on Material Science and Technology, Seoul, Korea (2016)
12. **C.I. Kim** and D.J. Steigmann, "Mechanics of lipid membranes subjected to thickness distension and boundary interactions". Society of Natural Philosophy, Calgary, Canada (2015)
13. **C.I. Kim**, "Biological Membranes: Modeling and analysis", Canada-Korea Conference on Science and Technology (CKC 2015), Kananaskis, Canada, 2015-07-26 (2015)
14. **C.I. Kim**, "Gradient Elasticity on the Mechanics of Composites Reinforced with Finley Dispersed Fibers with Bending Resistance". Symposium on Multiscale & Multiphysics Mechanics (MMM'14). Symposium on Multiscale & Multiphysics Mechanics, Gyeongju, , 2014-12-04 (2014)
15. **C.I. Kim**, P. Schiavone and C-Q Ru, C-Q, "Effects of Boundary Reinforcement on Local Singular Fields in Linear Elastic Materials." Society of Engineering Science (SES),Brown University, Rhode Island, United States (2013)
16. **C.I. Kim**, P. Schiavone and C-Q Ru, C-Q, "Plane-strain Interface Crack in the Presence of Surface in Linear Elastic Materials." International Conference of Material Modeling, Paris, France (2011)

17. **C.I. Kim**, P. Schiavone and C-Q Ru, C-Q, "An Analysis of the Effects of Surface Elasticity on an Elastic Solid Incorporating a Crack (Mode-I & II): Complete Solution." Society of Engineering Science (SES), Iowa State University, Ames, Iowa, USA (2010)
18. **C.I. Kim**, P. Schiavone and C-Q Ru, C-Q, "The Effects of Surface Elasticity on an Elastic Solid with a Crack (Mode-I, II & III): Complete Solution," International Union of Theoretical and Applied Mechanics (IUTAM), Peking University, Beijing, China (2010)
19. **C.I. Kim**, P. Schiavone and C-Q Ru, C-Q, "The Effects of Surface Elasticity on an Elastic Solid with a Crack." Advances in Interaction & Multiscale Mechanics (AIMM), Jeju, Korea (2010)
20. **C.I. Kim**, P. Schiavone and C-Q Ru, C-Q, "The Effects of Surface Elasticity on an Elastic Solid with Mode-III Crack." Canadian Congress of Applied Mechanics (CANCAM), Halifax, Dalhousie University (2009)
21. **C.I. Kim**, P. Schiavone, "A Circular Inhomogeneity Subjected to Nonuniform Remote Loading in Finite Plane Elastostatics." Canadian Congress of Applied Mechanics (CANCAM), Toronto, Ryerson University (2007)
22. **C.I. Kim**, G.J. Han, J.J. Sim, D.S. Han, S.U. Lee and T.H. Kim, "A Study on Stability of the Container Crane with Respect to the Direction of Wind Load." Korean Society for Precision Engineering (KSPE), Deagu, Yungnam University, Korea (2004)