Shaofan Li, Ph.D.

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Education

Ph.D. in Mechanical Engineering (06/1997)
Northwestern University, Evanston, IL

M.S. in Aerospace Engineering (05/1993)
University of Florida, Gainesville, FL

M.S. in Computational Mechanics (06/1989)
Huazhong University of Science and Technology, Wuhan, China

B.S. in Mechanical Engineering (06/1982)
East China University of Science and Technology, Shanghai, China

Current Research Interests

2D material-based composites and high performance cementitious materials, 3D printing of amorphous and polymeric materials; Atomistic and multiscale simulations; Computational nonlocal fluid and solid mechanics; Dislocation pattern dynamics and multiscale defect mechanics; Engineering applications of artificial intelligence and machine learning methods; Micromechanics and nanomechanics of matertials; Data-driven computational modeling, simulation and design, and Soft matter mechanics and physics.

Professional Experience

07/2010-present **University of California** Berkeley, CA
Full Professor

07/2005 - 06/2010 **University of California** Berkeley, CA
Associate Professor

07/2000 - 07/2005 **University of California** Berkeley, CA
Assistant Professor

06/1997 - 06/2000 **Northwestern University** Evanston, IL
Post Doctoral Fellow

09/1982-09/1986 **Wuhan Material Protection Research Institute** Wuhan, China
Assistant Engineer

Honors and Awards

- Distinguished Fellow of IETI (International Engineering and Technology Institute) [2022];
- IACM (International Association of Computational Mechanics) Fellows Award [2017];
- The Best Paper Award in the 22th Conference of Japanese Society for Computational Engineering and Science [2017];
- Distinguished Fellow of ICCES (International Conference of Computing for Engineering and Sciences) [2014];
- The ICACM Computational Mechanics Award
(International Chinese Association of Computational Mechanics) [2013];

- The USACM Fellows Award
  (The United States Association of Computational Mechanics) [2013];
- A. Richard Newton Research Breakthrough Award [2008];
- National Science Foundation CAREER Award [2003];
- Atanasoff Best Paper Award [1999] in *The Fifth NASA National Symposium on Large-Scale Analysis, Design, and Intelligent Synthesis Environments*
- Graham-Cabell Fellowship [1996];
- Walter P. Murphy Graduate Fellowship [1995];
- Sigma Gamma Tau Aerospace Engineering Honor Society [1993]

Professional Society

A member of the following professional organizations:

- Member of Sigma Xi: The Scientific Research Honor Society [2021-];
- Ordinary Member of General Council of International Association for Computational Mechanics (IACM) [Since 2017-];
- Member of the USACM Executive Council [Since 2016];
- American Nano Society [Since 2011];
- Member of ASCE EMI Biomechanics Committee [Since 2007];
- MRS Material Research Society [Since 2010];
- ASCE Engineering Mechanics Institute [Since 2008];
- American Society of Civil Engineers [Since 2008];
- American Society of Mechanical Engineers [Since 2004];
- United States Association of Computational Mechanics (USACM) [Since 1995]

Editorial Board

- Editor-in-Chief,, *CMES: Computer Modeling in Engineering & Sciences* (2018-)
- Editor-in-Chief, *Journal of Micromechanics and Molecular Physics* (2016-),
- Subject Editor, *Engineering Failure Analysis* (2024-),
- Editor, *Acta Mechanica* (2021-);
- Associate Editor, *Scientific Reports* (2023-).

Synergistic Activities

- Expert Reviewer for European Research Council (ERC) [2007-2012];
- National Science Foundation Review Panel [2006][2008][2010][2011][2012][2013][2014][2016][2023];
- Member of the Research Impact Fund Committee of the Research Grants Council (RGC) of Hong Kong (2016-Present);
- Swiss National Science Foundation Review Panel [2024]

Graduate Advising

- Dr. Daniel C. Simkins, Jr., graduated in May 2004, and is now an Associate Professor at the University of South Florida, Tampa, FL, USA;
- Dr. Albert C. To, graduated in November 2005, and is now a Chair Professor at the University of Pittsburgh, Pittsburgh, PA, USA, (co-advisor with Professor S. D. Glaser);
- Dr. Xiaohu Liu, graduated in August 2006, and is now an finite element analyst at National Transportation Safety Board, Washington, D.C.;
- Dr. Roger A. Sauer, graduated in December, 2006, and is now a professor and group leader in RWTH Aachen University, Aachen, Germany;
- Mr. Jinshu Zhang, graduate in May 2012 with a degree of MS in Applied Science and Technology;
- Dr. Hiroyuki Minaki, graduated in May 2013, and is now a senior engineer at the Bridgestone Tires Company, Japan (co-advisor with Professor T. Zohdi);.
- Dr. Houfu Fan, graduated in May 2014, and is now a senior engineer at Software Development Engineer-Distributed Systems, Pleasanton, California.
- Dr. Qi Tong, graduated in May 2016, and is now an associate professor at Fudan University.
- Dr. Qingsong Tu, graduated in May 2017, and is now an assistant professor at Rochester Institute of Technology (RIT).
- Dr. Dandan Lyu, graduated in May 2018, and is now now a research engineer at LS-DYNA ANSYS, Livermore, California.
- Dr. Tiange (Tina) Li, graduated in May 2019, and now is an assistant engineer in Silicon Valley, California.
- Mr. Wice Ibrahimi, graduated in May 2020, with an MS degree in Civil Engineering.
- Dr. Yuxi Xie, graduated in May 2021, and now a research engineer at LS-DYNA ANSYS, Livermore, California.
- Dr. Chao Wang, graduated in May 2022, and now a research engineer at ANSYS, San Jose, California.
- Dr. Caglar Tamur, graduated in May 2024, is now a postdoctoral fellow in the University of California at San Diego.
- Dr. Chengyao Liang, graduated in May 2024, is now a postdoctoral fellow in Stanford University.

Post Doctoral Researcher Mentoring

- Dr. Ni Sheng (2006-2007), now an Associate Professor at the Macau University of Science and Technology;
- Dr. Jing Qian (2009-2010), now a Senior engineer at CFD Research Corporation at Huntsville, Alabama;
- Dr. Xiaowei Zeng (2008-2011), now an Associate professor at the University of Texas at San Antonio, TX ;
- Dr. Bo Ren (2009-2014), now a senior engineer at LS-DYNA, Livermore, California;
- Dr. Houfu Fan (2014- 2016), now a senior engineer at LS-DYNA, Livermore, California;
- Dr. Maryam Bitaraf (2014-2016), now an assistant professor at the University of Tehran;
- Dr. Shaofei Ren (2017-2019), now an associate professor at Harbin Engineering University, China;
- Dr. Lai Xin (2018-2021), now an associate professor at Wuhan University of Technology, China;
- Dr. Dana Bishara (2021-)
- Dr. Yongzhen Jia (2022-)
- Dr. Fang Xie (2024-)

Publications in Peer Reviewed Archive Journals

Up to the 30th June 2024, based on *Google Scholar*, the total citation numbers on referred publications (monographes and peer-reviewed journal papers) are more than 18000 times with an h-index 59.

`http://scholar.google.com/citations?user=LIVqPuwAAAAJ&hl=en&oi=ao`

1. Vu-Quoc, L. and S. Li [1993] "Invariant-conserving finite difference algorithms for the nonlinear Klein-Gordon equation," *Computer Methods in Applied Mechanics and Engineering*, **107**, 341-391;
2. **Vu-Quoc, L. and S. Li [1995] "Dynamics of sliding geometrically-exact beams: Large angle maneuvers and nonlinear parametric resonance,"** *Computer Methods in Applied Mechanics and Engineering***, 120, 65-118;**
3. **Li, S. and L. Vu-Quoc [1995] "Finite difference calculus invariant structure of a class of algorithms for the nonlinear Klein-Gordon equation,"** *SIAM Journal on Numerical Analysis***, 32, 1839-1875;**
4. **Liu, W.-K., S. Jun, S. Li, J. Adee, and T. Belytschko,[1995] "Reproducing kernel particle methods for structural dynamics,"** *International Journal of Numerical Methods for Engineering***, 38, 1655-1679;**
5. **Li, S. and P. A. Mataga [1996] "Dynamic crack propagation in piezoelectric materials Part I: Electrode solution,"** *Journal of the Mechanics and Physics of Solids***, 44, 1799-1830;**

6. **Li, S. and P. A. Mataga [1996] "Dynamic crack propagation in piezoelectric materials Part II: Vacuum solution,"** *Journal of the Mechanics and Physics of Solids*, **44, 1831-1866;**

7. Li, S. [1996] "The electromagneto-acoustic surface wave in a piezoelectric medium : The Bleustein-Gulyaev mode," *Journal of Applied Physics*, **80**, 5264-5269;

8. **Li, S. and W.-K. Liu [1996] "Moving least square reproducing kernel method (II) Fourier analysis,"** *Computer Methods in Applied Mechanics and Engineering*, **139, 159-193;**

9. **Liu, W.-K., S. Li, and T. Belytschko [1997] "Moving least square reproducing kernel method. (I) Methodology and convergence,"** *Computer Methods in Applied Mechanics and Engineering*, **143, 113-154;**

10. Li, S. and W. Shyy [1997] "On invariant integrals in the Marguerre-von Kármán shallow shell," *International Journal of Solids and Structures*, **34**, 2927-2944;

11. Li, S. and W. K. Liu [1998] "Synchronized reproducing kernel interpolant via multiple wavelet expansion," *Computational Mechanics*, **21**, 28-47;

12. **Li, S. and W. K. Liu [1999] "Reproducing kernel hierarchical partition of unity Part I: Formulations,"** *International Journal for Numerical Methods in Engineering*, **45, 251-288;**

13. **Li, S. and W. K. Liu [1999] "Reproducing kernel hierarchical partition of unity Part II: Applications,"** *International Journal for Numerical Methods in Engineering*, **45, 289-300;**

14. Liu, W.K. and S. Hao and T. Belytschko and S. Li and C. T. Chang [1999] "Multiple scale meshfree methods for damage fracture and localization," *Computational Materials Science*, **16**, 197-205;

15. **Li, S. [2000] "The micromechanics of classical plates: A congruous estimate of overall elastic stiffness,"** *International Journal of Solids and Structures*, **37, 5599-5628;**

16. **Li, S. [2000] "On micromechanics of Reissner-Mindlin plates,"** *Acta Mechanica*, **142, 47-99;**

17. **Li, S. and W.-K. Liu [2000], "Numerical simulations of strain localization in inelastic solids using mesh-free methods,"** *International Journal for Numerical Methods in Engineering*, **48, 1285-1309;**

18. Danielson, K.T., S. Hao, W.-K. Liu, A. Uras, and S. Li [2000] "Parallel computation of meshless methods for explicit dynamic analysis," *International Journal for Numerical Methods in Engineering*, **47**, 1323-1341;

19. Liu, W.-K., S. Hao, T. Belytschko, S. Li, and C.-T. Chang [2000] "Multiscale methods," *International Journal for Numerical Methods in Engineering*, **47**, 1343-1361;

20. **Li, S., W. Hao, and W.-K. Liu [2000] "Mesh-free simulations of shear banding in large deformation",** *International Journal of Solids and Structures* **37, 7185-7206;**

21. **Li, S. [2000] "Transient wave propagation in a transversely isotropic piezoelectric half space," ZAMP (***Zeitschrift für angewandte Mathematik und Physik***), 51, 236-266;**

22. **Li, S. W. Hao and W.-K. Liu [2000] "Numerical simulations of large deformation of thin shell structures using meshfree methods,"** *Computational Mechanics***,25, 2/3 102-116.**

23. Danielson, K.T., R. A. Uras, M. D. Adley, and S. Li [2000] "Large-scale application of some modern CSM methodologies by parallel computation," *Advances in Engineering Software*, **31**, 501-509;

24. **Li, S., D. Qian, W.-K. Liu and T. Belytschko [2001] "A meshfree contact-detection algorithm",** *Computer Methods in Applied Mechanics and Engineering***, 190, 3271-3292;**

25. **Li, S. [2001] "On diffraction in a piezoelectric medium by half-plane: The Sommerfeld problem", ZAMP (***Zeitschrift für angewandte Mathematik und Physik***), 52, 101-134;**

26. **Li, S., W.-K. Liu, D. Qian, P. Guduru, and A. J. Rosakis [2001] "Dynamic shear band propagation and micro-structure of adiabatic shear band,"** *Computer Methods in Applied Mechanics and Engineering***, 191, 73-92;**

27. Song, N., D. Qian, J. Cao, W.-K. Liu, and S. Li [2001] "Effective model for prediction of springback in flanging," ASME *Journal of Engineering Materials and Technology*, **23**, 456-461;

28. **Li, S. and W.-K. Liu [2002] "Meshfree particle methods and their applications,"** *Applied Mechanics Review***, 53, 1-34;**

29. Li, S. and D. C. Simkins Jr. [2002] "Conserving Galerkin weak formulations for computational fracture mechanics," *Communications in Numerical Methods in Engineering*, **18**, 835-850;

30. **Li, S., Liu, W.-K., Rosakis, A., Belytschko, T. and W. Hao [2002] "Meshfree Galerkin simulations of dynamic shear band propagation and failure mode transition,"** *International Journal of Solids and Structures***, 39, 1213-1240;**

31. Li, S. [2003] "On global energy release rate of a permeable crack in a piezoelectric crack," ASME *Journal of Applied Mechanics*, **70**, 246-252;

32. Li, S. [2003] "On saturation-strip model of a permeable crack in a piezoelectric ceramic," *Acta Mechanica*, **165**, 47-71;

33. O'Sullivan, S., J. D. Bray, and S. Li [2003] "A new approach for calculating strain for particulate media," *International Journal for Numerical and Analytical Methods in Geomechanics*, **27**, 859-877;

34. Li, S. and E. F. Morgan [2003] "Micromechanics modeling of plastic yielding in a solid containing mode III cohesive cracks," *International Journal of Fracture*, **119**, L105-L112;

35. Simkins, Jr., D.C. and S. Li [2003] "Effective bending stiffness for plates with micro-cracks," *Archive of Applied Mechanics*, **73**, 282-309;

36. Wang, G. and S. Li [2003] "A penny-shaped cohesive crack model for material damage," *Theoretical and Applied Fracture Mechanics*, **42**, 303-316;

37. **Li, S. [2004] "On dual conservation laws in planar elasticity,"** *International Journal of Engineering Science***, 42, 1215-1239;**

38. Li, S. and G. Wang [2004] "On damage theory of a cohesive medium," *International Journal of Engineering Science*, **42**, 861-885;

39. Liu, W.K., W. Han, H. Lu, S. Li, and J. Cao [2004] "Reproducing kernel element method Part I. Theoretical formulation," *Computer Methods in Applied Mechanics and Engineering*, **193**, 933-951;

40. **Li, S., H. Lu, W. Han, W. -K. Liu, and D. C. Simkins, Jr. [2004] "Reproducing kernel element method Part II. Globally conforming I^m/C^n hierarchies,"** *Computer Methods in Applied Mechanics and Engineering***, 193, 953-987;**

41. Lu, H., Li, S.,Simkins Jr., D.C., Liu, W.K. and J. Cao [2004] "Reproducing kernel element method Part III. Generalized enrichment and applications," *Computer Methods in Applied Mechanics and Engineering*, **193**, 989-1011;

42. Simkins, Jr., D.C., S. Li, H. Lu, and W.-K. Liu [2004] "Reproducing kernel element method Part IV. Globally compatible $C^n(n \geq 1)$ triangle hierarchy," *Computer Methods in Applied Mechanics and Engineering*, **193**, 1013-1034;

43. Li, S., A. Gupta, X. Liu, and M. Mahyari [2004] "Variational eigenstrain multiscale finite element method," *Computer Methods in Applied Mechanics and Engineering*, **193**, 1803-1824;

44. Li, S. [2004] "On dual conservation laws in linear elasticity: stress function formalism," *Nonlinear Dynamics*, **36**, 77-96;

45. Simonsen, B. C. and S. Li [2004] "Meshfree simulation of ductile fracture," *International Journal of Numerical Methods in Engineering*, **60**, 1425-1450;

46. Li, S. and A. Gupta [2004] "The Peierls stress of a screw dislocation in a piezoelectric medium," *Applied Physics Letters*, **85**, 2211-2213;

47. Li, S., G. Wang, and E. Morgan, [2004] "Effective elastic moduli of solids with cohesive microcracks," *European Journal of Mechanics* A, **23**, 925-933;

48. Li, S., X. Liu, and A. Gupta, [2005] "Smart element method I. Zienkiewicz-Zhu feedback," *International Journal for Numerical Methods in Engineering*, **62**, 1264-1294;

49. **Li, S., A. Gupta, and X. Markenscoff [2005] "Conservation laws of linear elasticity in stress formulations,"** *Proceedings of Royal Society of London* **A, 461, 99-116;**

50. Li, S. and B. C. Simonsen [2005] "Meshfree simulations of ductile crack propagation," *International Journal of Computational Engineering Science*, **6**, 1-25;

51. **To, A. C. and S. Li [2005] "Perfectly matched multiscale simulations,"** *Physical Review* **B. 72, Article No. 035414;**

52. **To, A. C., S. Li, and S. D. Glaser [2005] "On scattering in dissimilar piezoelectric materials by an interfacial crack,"** *Quarterly Journal of Mechanics and Applied Mathematics*, **58, 309-331;**

53. **Li, S., R. Sauer, and G. Wang [2005] "Circular inclusion in a finite elastic domain. I. The Dirichelt-Eshelby problem,"** *Acta Mechanica*, **179, 67-90;**

54. **Wang, G., S. Li, and R. Sauer [2005] "Circular inclusion in a finite elastic domain. II. The Neumann-Eshelby problem,"** *Acta Mechanica*, **179, 91-110;**

55. Li, S. A. C. To, and S. D. Glasser [2005] "On the scattering in a piezoelectric medium by a crack," ASME *Journal of Applied Mechanics*, **72**, 943-954;

56. Wang, G., X. Liu, S. Li, and N. Sitar [2005] "Smart element method II. Finite Eshelby formulation," *International Journal for Numerical Methods in Engineering*, **64**, 1303-1333;

57. Simkins Jr., D.C. and S. Li [2005] "Meshfree simulations of thermo-mechanical ductile fracture," *Computational Mechanics*, **38**, 235-249;

58. **Li, S. and A. Gupta [2006] "On dual configurational forces,"** *Journal of Elasticity*, **84, 12-31;**

59. Liu, X. and S. Li [2006] "A variational multiscale stabilized method for the Stokes flow problem," *Finite Elements in Analysis and Design*, **42**, 580-591;

60. To, A. C., S, Li, and S. Glasser [2006] "Propagation of a mode-III interfacial conductive crack along a conductive interface between two piezoelectric half spaces," *Wave Motion*, **43**, 369-386;

61. **Li, S., X. Liu, A. Agrawal, and A. C. To [2006] "Perfectly matched multiscale simulations for discrete systems: Extension to multiple dimensions,"** *Physical Review B*, **74, 045418.** *Virtual Journal of Nanoscale Science & Technology*, **14, Issue 5;**

62. **Medyanik, S., W.-K. Liu, and S. Li [2007] "On criteria for dynamic adiabatic shear band propagation,"** *Journal of Mechanics and Physics of Solids*, **55, 1439-1461;**

63. **Li, S., C. Linder, and J. W. Foulk III, [2007] "On configurational compatibility and multiscale energy momentum tensors,"** *Journal of Mechanics and Physics of Solids*, **55, 980-1000;**

64. **Lee, C.-L. and S. Li [2007], "A half-space Peierls-Nabarro model and the mobility of screw dislocation in a thin film,"** *Acta Materialia*, **55, 2149-2157;**

65. **Sauer, R.A. and S. Li [2007] "A contact mechanics model for quasi-continua,"** *International Journal for Numerical Methods in Engineering*, **71, 931-962;**

66. Sauer, R.A. and S. Li [2007] "An atomic interaction based continuum mechanics model for adhesive contact mechanics" *Finite Elements in Analysis and Design*, **43**, 384-396;

67. **Liu, X. and S. Li [2007] "Nonequilibrium multiscale computational model,"** *Journal of Chemical Physics***, 126, article No. 124105;**

68. Wang, G., S. Li, H.-N, Nguyen, and N. Sitar [2007] "Effective elastic stiffness for periodic masonry structures via eigenstrain homogenization," *ASCE Journal of Materials in Civil Engineering*, **19**, 269-277;

69. **Li, S., Sauer, R.A., and G. Wang [2007] "The Eshelby tensors in a finite spherical domain : I. Theoretical formulations,"** *ASME Journal of Applied Mechanics***, 74, 770-783;**

70. **Li, S., G. Wang, and R. Sauer [2007] "The Eshelby tensors in a finite spherical domain : II. Applications in homogenization,"** *ASME Journal of Applied Mechanics***, 74, 784-797;**

71. Li, S. [2007] "A Multiscale Griffith criterion," *Philosophical Magazine Letters*, **87**, 945-954;

72. **Sauer, R.A. and S. Li [2007] "An atomic interaction-based continuum model for computational multiscale contact mechanics,"** *Proceedings in Applied Mathematics and Mechanics***(PAMM), 7, 4080029-4080030;**

73. Liu, X., S. Li, and N. Sheng [2008] "A cohesive finite element for quasi-continua," *Computational Mechanics*, **42**, 543-553;

74. Sauer, R.A. and S. Li [2008] "An atomistically enriched continuum model for nanoscale contact mechanics and its application to contact scaling," *Journal of Nanoscience and Nanotechnology*, **8**, 3757-3773;

75. Sheng, N. and S. Li [2008] "A nonequilibrium multiscale simulation of shock wave propagation," *Mechanics Research Communications*, **35**, 10-16;

76. Qian, D., T. Eason, S. Li, and W.K. Liu [2008] "Meshfree simulation of failure modes in thin cylinder subjected to combined loads of internal pressure and localized heat," *International Journal for Numerical Methods in Engineering*, **76**, 1159-1180;

77. Li, S., N. Sheng, and X. Liu [2008] "A non-equilibrium multiscale simulation paradigm," *Chemical Physics Letters*, **451**, 293-300;

78. Sauer, R.A., G. Wang, and S. Li [2008] "The composite Eshelby tensors and their applications to homogenization," *Acta Mechanica*, **197**, 63-96;

79. **Li, S. [2008] "On variational symmetry of defect potentials and multiscale configurational force,"** *Philosophical Magazine***, 88, 1059-1084;**

80. Lee, C.-L. and S. Li [2008] "The size effect of thin films on the Peierls stress of edge dislocations," *Mathematics and Mechanics of Solids*, **13**, 316-335;

81. Sheng, N. and S. Li [2009] "A multiscale non-equilibrium molecular dynamics algorithm and its applications," *International Journal of Applied Mechanics*, **1**, 405-420;

82. Li, S. and N. Sheng [2010] "On multiscale non-equilibrium molecular dynamics simulations", *International Journal for Numerical Methods in Engineering*, **83**, 998-1038, DOI: 10.1002/nme.2849;

83. **Zeng, X. and S. Li [2010] "A multiscale cohesive zone model and simulations of fracture,"** *Computer Methods in Applied Mechanics and Engineering***, 199, 547-556;**

84. Ren, B. and S. Li [2010] "Meshfree simulations of plugging failures in high-speed impacts," *Computers & Structures*, **88**, 909-923;

85. Liu, W.K., D. Qian, S. Gonella, S. Li, W. Chen, and S. Chirputkar [2010] "Multiscale methods for mechanical science of complex materials: Bridging from quantum to stochastic multiresolution continuum", *International Journal for Numerical Methods in Engineering*, **83**, 1039C1080, DOI: 10.1002/nme.2915;

86. **Qian, J. and S. Li [2011] "Application of multiscale cohesive zone model to simulate fracture in polycrystalline solids,"** *ASME Journal of Engineering Materials and Technology***, 133, No. 011010;**

87. Ren, B., S. Li, J. Qian, and X. Zeng [2011] "Meshfree simulations of spall fracture," *Computer Methods in Applied Mechanics and Engineering*, **200**, 797-811;

88. Ren, B., J. Qian, X. Zeng, A. K. Jha, S. Xiao, and S. Li [2011] "Recent Developments on thermomechanical simulations of ductile failure by meshfree method," *CMES: Computer Modeling in Engineering & Sciences*, **71**, 253-277;

89. **Zeng, X. and S. Li [2011] "Multiscale modeling and simulation of soft adhesion and contact of stem cells,"** *Journal of the Mechanical Behavior of Biomedical Materials***, 4, 180-189;**

90. Zeng, X. and S. Li [2011] "Modeling and simulation of substrate elasticity sensing in stem cells," *Computer Methods in Biomechanics and Biomedical Engineering*, **14**, 447-458.

91. **Zeng, X. and S. Li [2012] "A three dimensional soft matter cell model for mechanotransduction,"** *Soft Matter***, 8, 5765-5778, DOI: 10.1039/c2sm07138j.**

92. He, M. and S. Li [2012] "An embedded atom hyperelastic constitutive model and cohesive finite element method," *Computational Mechanics*, **49**, 337-355;

93. **Li, S., X. Zeng, B. Ren, J. Qian, J. Zhang, and A.J. Jha [2012] "An atomistic-based interphase zone model for crystalline solids,"** *Computer Methods in Applied Mechanics and Engineering***, 229-232, 87-109. DOI: 10.1016/j.cma.2012.03.023**

94. **Ren, B. and S. Li [2012] "Modeling and simulation of large-scale ductile fracture in plates and shells,"** *International Journal of Solids and Structures*, **49, 2373-2393.**

95. **Liu, L. and S. Li [2012] "A finite temperature multiscale interphase finite element method and simulations of fracture," ASME** *Journal of Engineering Materials and Technology*, **134, No. 031014.**

96. Zeng, X. and S. Li [2012] "Application of a multiscale cohesive zone method to model composite materials," *International Journal of Multiscale Computational Engineering*, **10**, 391-405; DOI: 10.1615/IntJMultCompEng.v10.i5

97. **Ren, B. and S. Li [2013] "A three-dimensional atomistic-based process zone finite element simulation of fragmentation in polycrystalline solids,"** *International Journal for Numerical Methods in Engineering*, **93, 989-1014; DOI: 10.1002/nme.4430.**

98. Fan, H., C. Shi, and S. Li [2013] "Application of multiscale process zone model to simulate fracture in polycrystalline solids," *Journal of Multiscale Modeling*, **5**, 1350015.

99. Tu, Q.-S., M. Lee, S. Zhang, and S. Li [2014] "Molecular dynamics simulations of ions diffusion in carbon nanotubes embedded in cell," *Computer Modeling in Engineering and Science*, **98**, 247-259.

100. Zeng, X. and S. Li [2014] "A biomechanical cell model by liquid crystal elastomers," ASCE *Journal of Engineering Mechanics*, **140** (4), Article No. 04013003.

101. Li, S. and Q. Tong [2014] "On higher-order quantum stress," *Acta Mechanica*, **225**, 1235-1243.

102. **Li, S., B. Ren and H. Minaki [2014] "Multiscale Crystal Defect Dynamics: A Dual-Lattice Process Zone Model,"** *Philosophical Magazine*, **94(13), 1414-1450.**

103. **Minaki, H. and S. Li [2014] "Multiscale modeling and simulation of dynamic wetting,"** *Computer Methods in Applied Mechanics and Engineering*, **273, 274-302.**

104. Chen, Z., H. Cao, H. Zhu, J. Hu and S. Li [2014] "A simplified structural mechanics model for cable-truss footbridges and its implications for preliminary design," *Engineering Structures*, **68**, 121-133.

105. Ren, B. and S. Li [2014] "Multiscale modeling and prediction of bonded joint failures by using an adhesive process zone model," *Theoretical and Applied Fracture Mechanics*, **72**, 76-88.

106. **Fan, H. and S. Li [2014] "Modeling microtubule cytoskeleton via an active liquid crystal elastomer model,"** *Computational Materials Science*, **96, Part B, 559-566.**

107. Ren, B., H. Fan, G. L. Bergel, R. A. Regueiro, X. Lai, and S. Li [2014], "A peridynamics-SPH coupling approach to simulate soil fragmentation induced by shock waves," *Computational Mechanics*, **55**, 287-302, DOI 10.1007/s00466-014-1101-6.

108. Lai, X., B. Ren, H. Fan, S. Li, C. T. Wu, R. A. Regueiro, and L. Liu [2014], "Peridynamics simulations of geomaterial fragmentation by impulse loads," *International Journal for Numerical and Analytical Methods in Geomechanics*, **39**, 1304-1330, DOI: 10.1002/nag.2356.

109. **Li, S. and Q. Tong [2015] "A concurrent multiscale micromorphic molecular dynamics,"** *Journal of Applied Physics***, 117, No. 154303, DOI:10.1063/1.4916702.**

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- Advanced Mechanics of Materials (Undergraduate Course, CE131);
- Mechanics of Materials (Undergraduate Course, CE130);
- Introduction to Solid Mechanics (Engineering Mechanics) (Undergraduate Course, ME85/C30);
- Statics (Undergraduate Course, E36);

- Mechanics, Structure and Computer (Undergraduate Course, CE130N);
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