Papers in peer-reviewed archival journals

1. "On standard and vector finite element analysis of a strict anti-plane shear model with elastic curvature", R. A. Regueiro, P. Dixit and K. Garikipati, accepted in Computer Methods in Applied Mechanics and Engineering, 2007.

2. "Advances in the numerical treatment of grain-boundary migration: Coupling with mass transport and mechanics", H. Mourad and **K. Garikipati**, Computer Methods in Applied Mechanics and Engineering, vol. 196, pp 595-607, 2006.

3. "Biological remodelling: Stationary energy, configurational change, internal variables and dissipation", **K. Garikipati**, J. E. Olberding, H. Narayanan, E. M. Arruda, K. Grosh and S. Calve, Journal of the Mechanics and Physics of Solids, vol. 54, pp 1493-1515, 2006.

4. "The continuum elastic and atomistic viewpoints on the formation volume and strain energy of a vacancy", **K. Garikipati**, M. L. Falk, M. Bouville, B. Puchala, and H. Narayanan, Journal of the Mechanics and Physics of Solid vol. 54, pp 1929-1951, 2006.

5. "A Discontinuous Galerkin method for the Cahn-Hilliard equation", G. N. Wells, E. Kuhl and **K. Garikipati**, Journal of Computational Physics vol. 218, pp 860-877, 2006.

6. "A discontinuous Galerkin method for strain gradient-dependent damage: Study of interpolations and convergence", L. Molari, G. N. Wells, **K. Garikipati** and F. Ubertini, Computer Methods in Applied Mechanics and Engineering, vol. 195, pp 1480–1498, 2006.

7. "An assumed gradient finite element method for the level set equation", H. Mourad, J. Dolbow and **K. Garikipati**, International Journal for Numerical Methods in Engineering, vol. 64, 1009–1032, 2005.

8. "On the convexity of transversely-isotropic chain networks", E. Kuhl, A. Menzel and **K. Garikipati**, Philosophical Magazine, vol. 86, pp 3241–3258, 2006.

9. "Analysis and numerical simulation of discontinuous displacements modelling fine scale damage in a continuum under mixed-mode loading", **K. Garikipati**, International Journal for Multiscale Computational Engineering, 2006.

10. "Remodelling of biological tissue: Mechanically-induced reorientation of a transversely isotropic chain network", E. Kuhl, **K. Garikipati**, E.M. Arruda and K. Grosh, Journal of the Mechanics and Physics of Solids, vol. 53, pp 1552-1573, 2005.

11. "A continuum treatment of growth in biological tissue: Mass transport coupled with mechanics", **K. Garikipati**, E. M. Arruda, K. Grosh, H. Narayanan and S. Calve, Journal of the Mechanics and Physics of Solids, , vol. 52, no. 7, pp 1595-1625, 2004.

12. "A discontinuous Galerkin formulation for a strain gradient-dependent damage model", G. N. Wells, **K. Garikipati** and L. Molari, Computer Methods in Applied Mechanics and Engineering, vol. 193, pp 3633-3645, 2004.

13. "A variational multiscale method to incorporate strain gradients in a phenomenological plasticity model", S. L. Creighton, R. A. Regueiro, **K. Garikipati**, P. A. Klein, E. B. Marin and D. J. Bammann, Computer Methods in Applied Mechanics and Engineering, vol. 193, pp 5453-5475, 2004.

14. "Couple stresses in crystalline solids: Origins from plastic slip gradients, dislocation core distortions, and three-body interatomic potentials", **K. Garikipati**, Journal of the Mechanics and Physics of Solids, vol. 51, no. 7, pp 1189-1214, 2003.

15. "Variational multiscale methods to embed the macromechanical continuum formulation with fine scale strain gradient theories", **K. Garikipati**, International Journal for Numerical Methods in Engineering, vol. 57, no. 9, pp 1283-1298, 2003.

16. "Continuous/discontinuous finite element approximations of fourth-order elliptic problems in structural and continuum mechanics with applications to thin beams and plates, and strain gradient elasticity", G. Engel, **K. Garikipati**, T. J. R. Hughes, M. G. Larson, L. Mazzei and R. L. Taylor, Computer Methods in Applied Mechanics and Engineering, vol. 191, no. 34, pp 3669-3750, 2002.

17. "A nonlocal phenomenological anisotropic finite deformation plasticity model accounting for dislocation defects", R. A. Regueiro, D. J. Bammann, E. B. Marin and **K. Garikipati**, ASME: Journal of Engineering Materials and Technology, vol. 124, pp 380-387, 2002.

18. "A variational multiscale method to embed micromechanical surface laws in the macromechanical continuum formulation", **K. Garikipati**, Computer Modelling in Engineering and Sciences, vol. 3, no. 2, pp 175–184, 2002.

19. "Recent advances in models for thermal oxidation of silicon", **K. Garikipati** and V. S. Rao, Journal of Computational Physics, vol 174, pp 138–170, 2001.

20. "A lattice-based micromechanical continuum formulation for stress-driven mass transport in polycrystalline solids", **K. Garikipati**, L. Bassman and M. Deal, Journal of the Mechanics and Physics of Solids, vol 49, pp 1209–1237, 2001.

21. "Modelling and validation of contributions to stress in the shallow trench isolation process sequence", **K. Garikipati**, V. S. Rao, M. Y. Hao, E. Ibok, I. de Wolf and R. W. Dutton, Computer Modelling in Engineering and Sciences, vol 1, no 1, pp 65–83, 2000.

22. "On modelling thermal oxidation of silicon II: Numerical spects", V. S. Rao, T. J. R. Hughes and **K. Garikipati**, International Journal for Numerical Methods in Engineering, vol 47, no 1/3, pp 359–378, 2000.

23. "Embedding micromechanical laws in the continuum formulation — A multiscale approach applied to discontinuous solutions", **K. Garikipati** and T. J. R. Hughes, International Journal for Computational Civil and Structural Engineering, vol 1, no 1, 2000.

24. "A variational multiscale approach to strain localization—Formulation for multidimensional problems", **K. Garikipati** and T. J. R. Hughes, Computer Methods in Applied Mechanics and Engineering, vol 188, pp 39–60, 2000.

25. "Characterization of contact electromechanics through capacitance-voltage measurements and simulations", E. K. Chan, **K. Garikipati** and R. W. Dutton, Journal of Microelectromechanical Systems, vol 8 no 2, 1999.

26. "A study of strain localization in a multiple scale framework — The one dimensional problem", **K. Garikipati** and T. J. R. Hughes, Computer Methods in Applied Mechanics and Engineering, vol 159, pp 193–222, 1998.

27. "An analysis of strong discontinuities in multiplicative finite strain plasticity and their relation with the numerical simulation of strain localization in solids", F. Armero and **K. Garikipati**, International Journal of Solids and Structures, vol 33, no. 20-22, pp 2863–2885, 1996.

Invited lectures

1. "A Discontinuous Galerkin Method for the Cahn-Hilliard Equation", Université Catholique de Louvain, Louvain la Neueve, Belgium, July 11, 2006.

2. "The Mathematics of Biological Growth", Università di Torino, Torino, Italy, June 25, 2006.

3. "The Mechanics and Mathematics of Growth in Soft Biological Tissue", Technische Universiteit, Delft, The Netherlands, November 1, 2005.

4. "Thermodynamic Driving Forces for Biological Remodelling", Max Planck Institut für Metallforschung, Stuttgart, Germany, October 17, 2005.

5. "Discontinuous Galerkin Finite Element Methods for Fourth-order PDEs of Elliptic Type", Applied Mathematics Seminar, University of Michigan, September 16, 2005.

6. "Discontinuous Galerkin Methods for Fine Scale Strain Gradient Theories", Multiscale Modelling Seminar, Universität Stuttgart, Germany, July 19, 2005.

7. "Discontinuous Galerkin Methods for Strain Gradient Theories", Lehrstuhl für Mechanik, Technische Universität, Kaiserslautern, Germany, July 14, 2005.

8. "Growth of Soft Biological Tissue: Mathematical Models and Numerical Methods", Mathematical Biology Seminar, University of Michigan, April 11, 2005.

9. "The Continuum Mechanics and Mathematics of Growth in Soft Biological Tissue", Stanford University, Division of Mechanics and Computation, March 9, 2005.

10. "Continuous/discontinuous Galerkin methods for fourth-order partial differential equations", at Mathematisches Forschungsinstitut, Oberwolfach, Germany, February 1, 2005.

11. "The Mechanics and Mathematics of Growth and Remodelling in Biological Tissue", Applied Physics seminar, University of Michigan, November 17, 2004.

12. "Variational Multiscale Methods in Solid Mechanics", at Università di Bologna, May 27, 2004.

13. "Continuum Treatment of Growth and Remodelling of Biological Tissue", at Università di Bologna, May 25, 2004.

14. "Variational Multiscale Methods in Solid Mechanics", at Universität Stuttgart, May 26, 2003.

15. "Material Forces in Remodelling of Soft Biological Tissue", at the Euromech Colloquium on Material Forces in Mechanics held at Universität Kaiserslautern, Germany, May 21-24, 2003.

16. "Couple stresses in crystalline solids: Origins from plastic slip gradients, dislocation core distortions and three-body interatomic potentials", Universtät Kaiserslautern, July 17, 2002.

17. "Stabilized continuous/discontinuous Galerkin methods for fourth-order elliptic problems: Formulations for thin bending elements and strain gradient theory without derivative degrees of freedom", École Polytechnique Federale de Lausanne, Switzerland, July 16, 2002.

18. "Recent Advances in Models for Thermal Oxidation of Silicon", Department of Mechanical and Industrial Engineering, University of Illinois, Urbana-Champaign, Feb. 26, 2002.

19. "Atomically-based Field Formulations for Coupled Diffusion and Mechanics in Crystalline Materials", Department of Materials Science and Engineering Colloquium, University of Michigan, Ann Arbor, March 9, 2001.

20. "A Variational Multiscale Method for Solid Mechanics", Division of Mechanics and Computation, Stanford University, Dec. 2, 1999.

21. "On Strong Discontinuities in a Mixed Mode Damage Model", University of Cambridge, Department of Engineering, UK, May 1, 1997.

22. "On Strong Discontinuities in a Mixed Mode Damage Model", Stanford University, Division of Scientific Computation and Computational Mathematics, April 21, 1997.

23. "On Strong Discontinuities in Inelastic Solids and their Numerical Simulation", U. C. Berkeley, Dept. of Civil Engineering, SEMM Division, April 25, 1996.

24. "On Strain Localization in Inelastic Solids", Lawrence Livermore National Laboratory, September 20, 1995.