

## Recent Publications

### KLOD KOKINI

#### Journal Publications

- [1] B. Zhou and K. Kokini, "Effect of Pre-existing Surface Cracks on the Interfacial Thermal Fracture of Thermal Barrier Coatings: A Numerical Study," *Materials Science and Engineering A*, 348, pp. 271-279, 2003.
- [2] S.L.Voytik-Harbin, B.A. Roeder, J.E. Sturgis, K. Kokini and J.P. Robinson, "Simultaneous Mechanical Loading and Confocal Reflection Microscopy for 3D Micro-Biomechanical Analysis of Biomaterials and Tissue Constructs," *Journal of Microscopy and Microanalysis*, 9(1), pp. 74-85, 2003.
- [3] S. Rangaraj and K. Kokini, "Interface Thermal Fracture in Functionally Graded Zirconia-Mullite-Bond Coat Alloy Thermal Barrier Coatings," *Acta Materiala*, 51, pp. 251-267, 2003.
- [4] S. Rangaraj and K. Kokini, "Multiple Surface Cracking and its Effect on Interface Cracks in Functionally Graded Thermal Barrier Coatings," *ASME Journal of Applied Mechanics*, 70, pp.234-245, 2003.
- [5] S. Rangaraj and K. Kokini, "Estimating the Fracture Resistance of Functionally Graded Thermal Barrier Coatings from Thermal Shock Experiments," *Surface and Coatings Technology*, 173, pp. 201-212, 2003.
- [6] S. Rangaraj and K. Kokini, "A Study of Thermal Fracture in Functionally Graded Thermal Barrier Coatings using a Cohesive Zone Model," *ASME Journal of Engineering Materials and Technology*, 126, pp. 1-13, January 2004.
- [7] S. Rangaraj and K. Kokini, "Influence of Particle Shape and Aspect Ratio on Thermally Activated Viscoplastic (Time-dependent) Response of Ceramic (Zirconia)-Metal (NiCoCrAlY) Particulate Composites," *Materials Science and Engineering A*, A366, pp. 356-366, 2004.
- [8] B. Zhou and K. Kokini, "Effect of Preexisting Surface Cracks on the Interfacial Thermal Fracture of Thermal Barrier Coatings: An Experimental Study," *Surface and Coatings Technology*, in press, 2004.
- [9] S. Rangaraj and K. Kokini, "Fracture in Single-Layer Zirconia (YSZ)-Bond coat Alloy (NiCoCrAlY) Composite Coatings under Thermal Shock," *Acta Materiala*, 52, pp.455-465, 2004.
- [10] B.A. Roeder, K. Kokini, J.P. Robinson, and S.L. Voytik-Harbin, "Local, Three-dimensional Strain Measurements within Largely-Deformed Extracellular Matrix Constructs," *Journal of Biomechanical Engineering*, 2004, in press.
- [11] B. Zhou and K. Kokini, "Effect of Surface Pre-crack Morphology on the Fracture of Thermal Barrier Coatings Under Thermal Shock," *Acta Materiala*, 52, pp. 4189-4197, 2004.
- [12] B. Zhou and K. Kokini, "Numerical Study on Thermal Fracture of Ceramic Coatings in High Heat Flux Environment," *Journal of Thermal Stresses*, 2004, in press.
- [13] A.M. Pizzo, K. Kokini, L.C. Vaughn, B.Z. Waisner, and S. Voytik-Harbin, "Extracellular Matrix (ECM) Microstructural Composition Regulates Local Cell-ECM Biomechanics and Fundamental Fibroblast Behavior: A Multidimensional Perspective," *Journal of Applied Physiology*, 2005, in press.

#### Conference Papers and Presentations

- [1] K. Kokini, S.V. Rangaraj and B. Zhou, "Thick Thermal Barrier Coatings under Thermal Shock: Strategies to Reduce Interface Fracture," 27th Annual Cocoa Beach Conference on Advanced Ceramics and Composites, Cocoa Beach, FL, January 2003 (Invited).
- [2] S. Chang, S. Bolton and K. Kokini, "Acoustic Emission Detection and Analysis of Thermal Fracture in Thermal Barrier Coatings," ACerS Annual Meeting, Nashville, TN, April 2003.

- [3] B. Zhou and K. Kokini, "Thermal Fracture of Interfaces in Thermal Barrier Coatings as a Function of Surface Precrack Length," ACerS Annual Meeting, Nashville, TN, April 2003.
- [4] S.V. Rangaraj and K. Kokini, "Fracture Resistance and Toughness of Functionally Graded Thermal Barrier Coatings," ACerS Annual Meeting, Nashville, TN, April 2003.
- [5] D.M. Driscoll, K. Kokini, L.P.B. Katehi, J.R. Wright and C.P. Percifield, "A New Paradigm for Diversity in Engineering," ASEE Annual Meeting, Nashville, TN, June 2003.
- [6] D. Grubbe, K. Kokini and J. Eddy, "A Panel on Industry-University Cooperation to Improve the Academic Climate: A Case Study at Purdue Engineering." WEPAN National Conference, Chicago, IL, June 2003.
- [7] Alaina M. Pizzo, Beverly Z. Waisner, Jennifer E. Sturgis, Klod Kokini, J. Paul Robinson, and Sherry L. Voytik-Harbin, "Cell-Matrix Adhesions as Sensors of Three-Dimensional Extracellular Matrix Microstructure and Composition," ASME Summer Bioengineering Conference, Key Biscayne, FL, June 25-29, 2003.
- [8] B.A. Roeder, B. Waisner, J.E. Sturgis, K. Kokini, J.P. Robinson, and S.L. Voytik-Harbin, "Extracellular Matrix (ECM) Microstructure Determines Cell-Extracellular Matrix Strain Transfer in 3D Model Tissues," ASME Summer Bioengineering Conference, Key Biscayne, FL, June 25-29, 2003
- [9] D.M. Driscoll and K. Kokini, "The ABC's of Assessing a Multicultural Diversity Forum," Conference on Educating all of One Nation, American Council on Education, Atlanta, GA, October 22-25, 2003.
- [10] S.V. Rangaraj and K. Kokini, "Fracture Resistance and Effective Fracture Toughness of Functionally Graded Thermal Barrier Coatings," 2003 ASME International Mechanical Engineering Congress, Washington, D.C., November 2003 (Invited).
- [11] B. Zhou and K. Kokini, "Fracture of Thermal Barrier Coatings under Concentrated Thermal Shock: Effect of Surface Crack Morphology," 2003 ASME International Mechanical Engineering Congress, Washington, D.C., November 2003 (Invited).
- [12] K. Kokini and B. Zhou, "Fracture of Thermal Barrier Coatings Under Concentrated Thermal Shock: Effect of Surface Crack Morphology," ASME International Mechanical Engineering Congress and Exposition, Washington, D.C., November 2003.
- [13] K. Kokini and S.V. Rangaraj, "Fracture Resistance and Effective Toughness of Functionally Graded Thermal Barrier Coatings," ASME International Mechanical Engineering Congress and Exposition, Washington, D.C., November 2003.
- [14] S. Chang, K. Kokini, and S. Bolton, "Modeling of Acoustic Emission Due to Thermal Fracture in Thermal Barrier Coatings," ACerS Annual Meeting, Indianapolis, IN, April 2004.
- [15] A.R. Gilbert and K. Kokini, "Time-Dependent Behavior Effects on Interface Fracture of Thermal Barrier Coating Composites," ACerS Annual Meeting, Indianapolis, IN, April 2004.