Predictive Science and Technology in Mechanics and Materials

The papers represented in this edition of JEMT were birthed from a workshop entitled “Predictive Science and Technology in Mechanics and Materials” hosted by the Center of Advanced Vehicular Systems (CAVS) on the campus of Mississippi State University on June 18–20, 2008. The purpose of the workshop was focused on technologies that could drive engineering research such that predictive tools could be realized. Several software companies and corporations that employed state-of-the-art finite element analysis to solve structural problems were present. Although some of the presenters did not submit a review article, the ones who did added more references than usual for a more thorough review on the topic at hand in this particular edition of JEMT. The topics discussed in this context are the following:


K. S. Choi, W. N. Liu, X. Sun, and M. A. Khaleel, “Influence of Manufacturing Processes and Microstructures on the Performance and Manufacturability of Advanced High Strength Steels (AHSS).”


T. M. Hatem and M. A. Zikry, “Modeling of Lath Martensitic Microstructures and Failure Evolution in Steel Alloys.”


S. Groh and H. M. Zbib, “Advances in Discrete Dislocations Dynamics and Multiscale Modeling.”


D. S. Li, H. Garimestani, S. Ahzi, M. Khaleel, and D. Ruch, “Microstructure Design to Improve Wear Resistance in Bioimplant UHMWPE Materials.”

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