



Manufacturing Simulation and Computation

The advent of very powerful and inexpensive computing has made its way into multiple endeavors at deep and fundamental levels. Computational manufacturing is now widely seen as a bridge between design and production, improving the design of the manufacturing process and the quality of the produced product. In this section, the state-of-the-art in the active visualization of the virtual design, assembly, and even testing of complex mechanical parts, paving the way for the transformation of the DOE complex in this regard, is described in the first article. The second article is centered on a very successful integrated coupled physics tool for the simulation of manufacturing processes involving casting. Here we see a tangible example of how simulation and modeling can speed the delivery and quality of manufactured components while reducing production costs and waste.