Next Generation Digital Manufacturing Operations – Democratizing Advanced Manufacturing

The technological foundations of advanced manufacturing continue to rapidly evolve as ubiquitous sensing, cloud computing and storage, and next generation controllers are introduced into the manufacturing ecosystem. This talk presents some of the technical concepts and business models that will enable new technologies and capabilities in the manufacturing sector to be rapidly deployed throughout the U.S. industrial base. Insight will be presented into next generation resilient production operations and business models that favor local and point of assembly manufacturing. The talk will conclude with a discussion of how rapidly advancing technical innovations will be propagated throughout the manufacturing enterprise, ensuring a state-of-the-art manufacturing economy. This will provide opportunities for businesses of all sizes and democratize advanced manufacturing technologies throughout the United States.

Thomas R. Kurfess currently serves as the Chief Manufacturing Officer, and the Interim Director for the Manufacturing Science Division at Oak Ridge National Laboratory. He received his S.B., S.M. and Ph.D. degrees in mechanical engineering from M.I.T. in 1986, 1987 and 1989, respectively. He also received an S.M. degree from M.I.T. in electrical engineering and computer science in 1988. During 2012-2013 he served as the Assistant Director for Advanced Manufacturing at the Office of Science and Technology Policy in the Executive Office of the President of the United States of America, where he was responsible for coordinating Federal advanced manufacturing R&D. He was President of SME in 2018, and currently serves on the Board of Governors of the ASME. His research focuses on the design and development of advanced manufacturing systems targeting secure digital manufacturing, additive and subtractive processes, and large-scale production enterprises. He is a member of the National Academy of Engineering and is a Fellow of ASME, AAAS, and SME.

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