MANUFACTURING LEADERSHIP SEMINARS

Smart Additive Manufacturing

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Moderator:

Albert Shih

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ABSTRACT

There is a lot of excitement about the potential of smart manufacturing (involving the use of information, automation, computation, software, sensing, and networking technologies) to revolutionize the manufacturing industry, e.g., by boosting manufacturing quality and productivity at low cost. An excellent application for such "smart" technologies is additive manufacturing, another area of manufacturing that is gaining a lot of traction but is plagued by quality, productivity and cost issues. In this talk, I will briefly review my past activities in smart manufacturing, share at a high level some of my very early work on smart additive manufacturing, and outline my plans for the future, all aimed at enhancing quality and productivity at low cost. I will also share an initiative I am co-leading on establishing a smart additive manufacturing education program at U-M. My goal is to excite you with my vision, get your feedback, and seek out ways to collaborate on impactful problems related to smart (additive) manufacturing.

Chinedum Okwudire received his Ph.D. degree in Mechanical Engineering from the University of British Columbia in 2009 and joined the Mechanical Engineering faculty at the University of Michigan in 2011. Prior to joining Michigan, he was the mechatronic systems optimization team leader at DMG Mori USA, based in Davis, CA. His research is focused on exploiting knowledge at the intersection of machine design, control and, more-recently, computer science, to boost the performance of manufacturing automation systems at low cost. Chinedum has received a number of awards including the CAREER Award from the National Science Foundation; the Young Investigator Award from the International Symposium on Flexible Automation; the Outstanding Young Manufacturing Engineer Award from the Society of Manufacturing Engineers; the Ralph Teetor Educational Award from SAE International; and the Russell Severance Springer Visiting Professorship from UC Berkeley. He has co-authored a number of best paper award winning papers in the areas of control and mechatronics.

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