

Advanced Manufacturing

Session Co-chairs:

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In order to reach next generation levels of performance, increasingly complex geometries and integral components will be required. At the same time these components will need to be manufactured against the backdrop of more aggressive requirements for cost. In order to transition these new manufacturing processes to an industrial scale, an integrative-interdisciplinary approach is needed.

The session “Advanced Manufacturing” covers industrial needs, conventional and non-conventional manufacturing processes and the simulation of these processes. The speakers from the session are from both academia and industry and will provide valuable perspectives on the topic of advanced manufacturing. The speakers are:

- Daniel Meyer is chief engineer at the laboratory for micromachining at the University of Bremen. As a biologist he brought new ways of thinking to the world of advanced manufacturing technology. He has deep expertise for coolant applications in metal cutting and will discuss aspects of resources and energy in advanced manufacturing.
- Petra Wiederkehr is a professor at the Institute of Machining Technology at the Technical University of Dortmund. She is an expert in modeling and simulation of manufacturing processes. She will discuss capabilities and challenges of process simulations showing different examples from simulation-based design of processes to “intelligent” manufacturing.
- Luana Iorio is the senior executive for Materials and Process Engineering at GE Aviation which includes Additive Manufacturing. This emerging manufacturing technology allows for much more concurrent innovation of product design, materials and manufacturing than has been possible before. Luana will share various industry examples to demonstrate both the possibilities and some of the technical challenges.
- Waleed Farahat directs the Mechatronics and Control Group at Rethink Robotics. He will discuss the core robotic foundations that bring a new class of safe, human-collaborative robots to the manufacturing market.