S19 - Positive displacement rotating machines

Organizers: Ahmed Kovacevic & Davide Ziviani

Positive displacement rotating machines share a significant place in industrial and commercial applications. These include screw, scroll, vane, rotary and other types of machines. This session of ISROMAC 18 is dedicated to a wide range of topics related to transport phenomena and the dynamics of positive displacement rotating machinery, including, but not limited to, compressors, expanders, pumps and other fluid machinery. Lower order modelling as well as experimental techniques applied to positive displacement rotating machines will be explored: multi-phase flows, cavitation, rotor dynamics, heat transfer, conjugate heat transfer, Computational Fluid Dynamics among others. We welcome academics, students, industrialists and any other interested participants to submit a technical paper, to share their knowledge and participate in discussions with experts from all over the world. Selected papers will be published in the special issue of the Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering dedicated to ISROMAC

Non-exhaustive list of suggested topics

- Positive displacement compressors, expanders, pumps and motors
- Screw machines
- Scroll machines
- Rotary vane machines
- Rolling piston machines
- Novel positive displacement machines
- Dynamics of compressors
- Computational Fluid dynamics in rotary positive displacement machines
- Modelling of positive displacement machines using lower order models
- Energy efficiency and carbon footprint
- Experimental investigation
- Optimisation techniques
- Systems including positive displacement machines

Organizers

Professor Ahmed Kovacevic holds prestigious Howden Chair in Engineering Design and Compressor Technology at City, University of London. His work is dedicated to the development of design excellence in academia and industry which he does through researching, teaching and collaborating with industry in numerical modelling, analysis and design of Positive Displacement Machines. He is director of the renowned Centre for Compressor Technology and chair of the International conference on Compressors and their Systems at City, University of London.

Prof. Davide Ziviani is a Research Assistant Professor at the Ray W. Herrick Laboratories, Purdue University, and serves as the Associate Director of the Center for High Performance Buildings (CHPB). He has extensive expertise in the modeling and testing of thermal systems and their components, including positive displacement compressors and expanders, organic Rankine cycles for waste heat recovery, as well as advanced conventional and disruptive HVAC&R technologies for residential and commercial applications. Prof. Ziviani received his Doctoral degree in Electromechanical Engineering from the University of Ghent in Belgium**.**

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