



AALBORG UNIVERSITET

**Invitation: Lecture by Honorary Doctor Hoda ElMaraghy**

University Distinguished Professor in Manufacturing Systems, Director and Founder IMS Center  
University of Windsor, Canada



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**Thursday, March 12, 2020 – 10:00 to 11:30**

**Venue:** Auditorium 1.208, Fibigerstræde 16, Aalborg University

**Appointment:**

In March 2020, Professor Hoda ElMaraghy will receive an Honorary Doctorate at the Faculty of Engineering and Science, Aalborg University. Professor Hoda ElMaraghy was nominated by the Department of Materials and Production. Our nomination of Hoda ElMaraghy as honorary doctor at Aalborg University is a recognition of her remarkable accomplishments and her role as an outstanding inspiration and role model for researchers in engineering. Moreover, the honorary doctorate nomination is an invitation to further the exceptional research collaboration that is already established between her and researchers at Aalborg University.

**Title:**

**MANUFACTURING SYSTEMS PARADIGMS – PERSPECTIVES AND OUTLOOK**

**Abstract:**

Manufacturing systems have evolved over many decades in response to technological advances, increased products variety and complexity and changes in markets and business strategies, in pursuit of productivity, efficiency, responsiveness, and competitiveness. The four axes influencing their development - products,

processes, business strategies and manufacturing paradigms - will be presented. The inevitable shift to smarter and digital manufacturing systems, their characteristics, drivers and enablers, as well as the challenges facing industry in managing these changes will be discussed. Insights into the effect of the new paradigms on the role of workers in future manufacturing systems and efforts to ensure more sustainable and more socially responsible manufacturing are offered.

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### **Short Bio:**

Hoda ElMaraghy is Distinguished University Professor and founding Director of the Intelligent Manufacturing Systems Center at the University of Windsor where she became the first woman Dean of Engineering in Canada. She held a senior *Canada Research Chair* (CRC) in Manufacturing Systems for 14 years. She is a recipient of the *Order of Ontario* for being “a trail-blazer, inspiration and mentor to aspiring young men and women engineers in Canada and beyond whose research helped influence public policy, positioning Canada at the forefront of emerging transformative technologies and global trends in manufacturing”. She received an Honorary Doctorate from Chalmers University in Sweden. Dr. ElMaraghy is a Fellow of the Royal Society of Canada (RSC), Royal Swedish Academy of Engineering Sciences (IVA), International Academy of Production Engineering (CIRP), Canadian Academy of Engineering (CAE), Canadian Society of Mechanical Engineers (CSME) and Society of Manufacturing Engineers (SME). Professor Hoda ElMaraghy obtained Master and PhD degrees and was the first woman faculty member in Mechanical engineering at McMaster University where she founded the first in Canada Research Center in Flexible Manufacturing. She received many awards including professional Engineers Ontario (PEO) Medal for Research, Graduate Supervision and Teaching Awards and Best Paper awards. She supervised more than 100 researchers and has over 500 publications.

Her outstanding research covers a wide range of topics: manufacturing systems design, evolution, changeability, flexibility, reconfiguration, control, quality, inspection, assembly, process planning and robotics. All of which have high importance and increasing relevance in the research conducted at Department of Materials and Production, Aalborg University. Moreover, Hoda ElMaraghy was one of the first researchers to explore the use of Learning Factories in university teaching and research, where the “iFactory” in her IMS lab in Windsor was among the first learning factories in the world used for demonstrating intelligent manufacturing. Her use of learning factories for research and teaching has served as an inspiration for universities world-wide, including Aalborg University, where the “AAU Smart Production Lab” is now an integrated part of educational programs and research at the Department of Materials and Production.

Professor Hoda ElMaraghy has collaborated with researcher at the Department of Materials and Production since 2014 and has hosted and mentored several PhD students and researchers from Aalborg University in the IMS (Intelligent Manufacturing Systems) Center at the University of Windsor, resulting in excellent research contributions and several joint publications. Moreover, Aalborg University has benefitted significantly from her well-established relations to internationally recognized researchers and organizations in both USA and Europe. By nominating and mentoring one of the young female researchers at Department of Materials and Production in CIRP (International Academy for Production Engineering), she has made it possible for Aalborg University to formally participate in this prestigious and world-leading research organization for the first time.