

EPSTEIN INSTITUTE SEMINAR ▪ ISE 651

Statistical Quality Monitoring of Advanced Manufacturing Processes: Open Challenges and Possible Solutions

ABSTRACT – Advanced Manufacturing is facing a new renaissance, due to the widespread of emerging process technologies (e.g., Additive manufacturing) combined to a paradigm shift in sensing and computing. In this scenario, traditional approaches for statistical quality monitoring need to be revised in order to deal with 3D shape quality features, multi-stream signal data, noncontact image point clouds.

Starting from real industrial problems, some of the main challenges to be faced in this research field are discussed. Viable solutions to enhance zero-defect manufacturing via in-line statistical quality monitoring are finally presented.



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SPEAKER BIO – **Dr. Bianca Maria Colosimo** is a Professor in the Department of Mechanical Engineering of Politecnico di Milano, which is the first engineering school in Italy, 7th in Europe and ranked 24th worldwide (QS World University Ranking 20015 – Engineering and Technology). Since 2001, she is cooperating with the Engineering Statistics Laboratory, directed by E. del Castillo (Penn State University - PSU). Her research interest is mainly in the area of Quality Engineering (i.e. statistical process monitoring, control and optimization), with special attention to advanced manufacturing processes. On these topics, she is author of about 100 contributions, half of which have been published in peer-reviewed international journals and books. She is a member of the Editorial Board of *Journal of Quality Technology* (since 2006) and she is serving as referee for several other scientific international journals (*Technometrics*, *International Journal of Production Research*, *Journal of Applied Statistics*, *Quality & Reliability International*, *Computers & Industrial Engineering*, *Measurement Science and Technology*, *Computational Statistics* among the others).

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TUESDAY, NOVEMBER 3, 2015

3:30PM – 4:50PM

USC ANDRUS GERONTOLOGY CENTER (GER), Room 206