Abstract: The process industries are in the grip of digitalization fever. New digitalization initiatives are announced continually, often led by new digitalization groups and supported by substantial resources and budgets. As with many such major industry trends, this one too is surrounded by somewhat exaggerated claims and inflated expectations. As a result, it is not always easy to discern the real advances and opportunities, or to predict the probability of successful outcome for individual initiatives. This talk focuses on three areas of information technology, namely data, computation and algorithms, which provide the technological foundation for digitalization in the process industries. Following continual advances over the past couple of decades, technologies in these areas have now reached the point where they can have a significant impact across the process life cycle. The talk argues that successful digitalization applications are likely to involve sophisticated combinations of these IT developments with fundamental engineering knowledge and understanding. Recent industrial case studies are used to illustrate this point.

Bio: Costas Pantelides is a founder and currently the Managing Director of Process Systems Enterprise, a position he has held for the past 14 years. He is also a part-time professor of Chemical Engineering at Imperial College London where he enjoys teaching an advanced process modelling course and working on his research on ab initio crystal structure prediction. He holds BSc and PhD degrees from Imperial, and an MS degree from the Massachusetts Institute of Technology. He has been working in the area of process modelling technology for more than 3 decades, and has played a leading role in the development of the gPROMS and SPEEDUP software. He is the recipient of several awards including the 2007 Royal Academy of Engineering MacRobert Award, the UK's most prestigious prize for engineering innovation, and the 2016 Sargent Medal of the Institution of Chemical Engineers. At Imperial, he has also received the 2015 President’s Medal for Excellence in Innovation and Entrepreneurship. He is a Fellow of the Institution of Chemical Engineers and a Fellow of the Royal Academy of Engineering.
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10 April 2019, 11am, RODH C617

**Prof. Costas Pantelides** (Imperial College London)
Digitalization in the process industries: substance beyond the hype?
1 May 2019, 10am, RODH C617

**Prof. Ana Barbosa-Povoa** (University of Lisbon)
How to Design and Planning Supply Chain Towards Sustainability Goals?
22 May 2019, 3pm, RODH C617

The seminars will take place at Imperial College London, Chemical Engineering Department
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