

Professor Costas Pantelides PSE Ltd/Imperial College London

Process Modelling: A Progress Report

In the Chair: Professor Nilay Shah, Director, Centre for Process Systems Engineering, Imperial College London

Vote of Thanks: Prof Ignacio Grossmann, Rudolph R. and Florence Dean, Carnegie Mellon University

Abstract: It is about 50 years since the first process models were formulated and solved using digital computers. Process modelling is now a key technology underpinning the practical exploitation of many important advances in chemistry, energy and health provision. Enormous strides have been made in the range of processes that can be modelled, the predictive accuracy of the resulting models, and the types of calculations that can be performed using these models to support process design and operation. Models are themselves complex engineering artefacts with their own lifecycles of development, deployment and maintenance, all of which often require non-negligible amounts of skill, time and money. Thus, modelling productivity is a key issue, as is the reliability of model-based decisions in view of the uncertainty that is unavoidably present in any model. This lecture discusses the above factors and the developments in process modelling technology that address some of the demands posed by them. Examples from diverse industrial processes are used as illustrations. The needs and scope for further developments in process modelling are also discussed.

Biography: Costas Pantelides holds BSc (Eng.) and PhD degrees from Imperial College London, and an MS degree from the Massachusetts Institute of Technology. He is currently a professor of Chemical Engineering at Imperial, and also the Managing Director of Process Systems Enterprise Ltd., one of Imperial's spin-out companies. His main research interests include methodologies and tools for process modelling, numerical methods for large-scale simulation and optimisation, and molecular modelling for the prediction of crystal structure. His research has led to the development of the gPROMS modelling technology which is extensively used by industry and academia worldwide. He was awarded the 1998 Beilby Medal and Prize for his contributions to process systems engineering. In 2007, he led the team which won the Royal Academy of Engineering MacRobert Award, the UK's most prestigious prize for engineering innovation.

Lecture Theatre 1 (Room 250), Department of Chemical Engineering, ACE Extension Building,
South Kensington Campus, Imperial College London SW7 2AZ

Tea and coffee will be served before the lecture from 16.30 in the Common Room (Room 228), Department of Chemical Engineering, Level 2, ACE Extension Building

RSVP: Attendance is free, but with registration in advance

Thursday 3 December 2009 • 17.30

The Sixteenth Professor Roger W.H. Sargent Lecture

The Professor Roger Sargent Lecture is an annual event the Centre for Process Systems Engineering inaugurated as a tribute to Professor Sargent's vision, leadership, significant technical contributions and to his legacy in the field of Process Systems Engineering.