

**Fall 2004 AIChE Conference
Austin, TX
November 7-12, 2004**

Topical Conference on Information Technology in Chemical Engineering

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1. Plenary with roundtable – Monday afternoon

“New Developments in Information Technology & Cyber
Infrastructure: Session & Roundtable Discussion.”

Session Chair: Jimmy L. Humphrey, Ph.D., P.E.
Session Co-Chair: To Be Determined

CALL FOR PAPERS

In this session, new developments in information technology and cyber infrastructure, which enable increases in productivity in industry, university, and government, are presented. The focus will be on topics of most interest to chemical engineers. Presentations will be followed by informal roundtable discussions on collaboration and virtual project teams, point solutions versus integrated solutions, and handling information overload.

2. Session with roundtable – Tuesday morning

“IT Cyber Infrastructure to Enable Frontier Technologies”

Session Chair: Jim Davis, UCLA
Session Co-Chair: Maria Burka, NSF

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The session concentrates on chemical engineering and the emerging ‘scientific enterprise’ where science, computation and information technology are integrated. It is about the build out of IT infrastructure, i.e. the cyber infrastructure, and the innovative application of that infrastructure as a necessary means of doing research and development in frontier technologies. The scientific environment is recognized as large, complex, heterogeneous and distributed. Aggregation, compilation, exchange, and study of data are significant. Cyber infrastructure provides the vehicle for external and internal exchange and contribution and plays a vital role in the business of conducting research. Papers about local, regional, national and international activities or case studies in companies, universities, institutes, foundations, and government are all welcome. A series of in-depth presentations will be followed by a roundtable discussion to further explore this topic with everyone in attendance.

3. Session with roundtable – Tuesday afternoon

“IT Applications in Frontier Technologies”

Session Chair: Vince Grassi
Session Co-Chair: To Be Determined

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This session will examine how new ideas from Information Technology are enabling frontier technologies to become growth businesses driven by chemical engineers. Papers that describe practical applications of information technology to enable frontier technologies are welcome. Frontier technologies include new growth areas such as nanomaterials, performance materials, electronics, pharmaceuticals, healthcare, the Hydrogen Economy, Green processes for sustainability, and other new emerging growth businesses where chemical engineers can create success. All ideas that show examples of where information technology can accelerate the development of these new growth areas into real commercial businesses are welcome in this session. The presentations will be followed by a roundtable discussion to further explore this topic with everyone in attendance.

4. Session with roundtable – Wednesday morning

“IT in Chemical Engineering Education”

Session Chair: Kuyen Li
Session Co-Chair: To Be Determined

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This session will look at how the Information Technology (IT) education could be prepared in the chemical engineering. Papers that describe what to cover and how to teach IT in chemical engineering so that our future chemical engineers can take the advantages of IT for problem solving in chemical industry. Examples, curriculum, and syllabus are welcome to present in this session. Although the commercial promotion is not encouraged, the application of existing IT packages in teaching and problem solving is acceptable. Interested people from industry, solution providers, funding agency, and academic institutes are welcome to participate the roundtable discussion.

5. Session with roundtable - Wednesday afternoon

“The Smart Plant Fundamentals & Opportunities: Session & Roundtable Discussion.”

Session Chair: Jimmy L. Humphrey, Ph.D., P.E.
Session Co-Chair: To Be Determined

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High-speed wired and wireless networks interconnect the smart plant with the supply chain and the enterprise as a whole. Operation of the smart plant is fully integrated to optimize the value of its assets and to maximize productivity. Standardized data bases enable smart plant operators to increase energy efficiency while minimizing product losses. The smart plant attracts the best and brightest work force.

In this session, major components of the smart plant are discussed. Opportunities are identified which would transform traditional plants into smart plants. The session will conclude with round table discussions to identify additional smart plant opportunities.