

Culmination of the 50th Year and Some Changes for the 51st Year

To culminate the 50th year celebration for the *AIChE Journal*, a three-session symposium was held at the 2004 Austin Annual Meeting on the “The Future of Chemical Engineering Research”. Interest in this symposium was so great that the audience quickly filled a very large room of the Austin Convention Center, and there have been many requests for the proceedings of this symposium. For this reason, as well as a beautiful closure it provides for the golden anniversary of the premier chemical engineering research journal, we are publishing many of the symposium papers. Julio Ottino is the editor for the papers in Complex Systems, Pablo G. Debenedetti for Fundamentals, and Arup K. Chakraborty for Biological Engineering. A commentary by Dr. Ottino on this symposium follows my remarks.

A number of important changes have occurred, and will continue to happen in the coming months. After nine years of service as associate editor, Ed Cussler has asked to step down. He is being replaced by Abraham M. Lenhoff, the Gore Professor of Chemical Engineering at the University of Delaware, who will have primary responsibility for the areas of biochemical and biomedical engineering and mass transfer. Mark Barteau has also decided to step down after seven years of service as associate editor, and is being replaced by Phillip Savage, Professor of Chemical Engineering at the University of Michigan. Phil will be responsible primarily for reaction engineering, catalysis and electronic materials. To balance the workloads of the editors, however, all of us frequently deal with manuscripts outside our primary expertise areas. This transition in associate editors will be completed in the next several months. We thank Ed and Mark for their many years of significant service to the *Journal*.


Also taking place in the next several months will be a change in the Web-based manuscript handling system we have been using. Now that John Wiley & Sons, Inc. has assumed publication responsibility for the *AIChE Journal*, it is important that that our system be compatible with theirs. Most Wiley journals use Manuscript Central of ScholarOne for Web-based manuscript processing, while we have been using Rapid Review. We will continue to use Rapid Review for manuscripts that are in the review or revision stage, but will transfer to Manuscript Central for all new submissions. We appreciate the inconvenience of dealing with two systems imposed on our authors and reviewers even for a brief period, before we move completely to the new system. You have our sympathy, but we also hope we have yours, as we will have to deal with this situation daily.

I am pleased to report that there have been many positive benefits of AIChE and Wiley joining to publish the *Journal*. As staff from AIChE have moved to Wiley, the transition has been virtually seamless, with the same high standard of publication quality being maintained. An important immediate advantage of this partnership is that Wiley has now made all issues of the *Journal*, starting with Volume 1, Number 1, available electronically.

My office, AIChE, and Wiley are committed to reducing the time between submission and publication of papers, especially between acceptance and publication. To some extent, this has already happened. Papers now appear on-line in EarlyView form (without page numbers) shortly after the proofs have been corrected, and as much as nine weeks before the printed version of the *Journal*. Also, the page budget of the *Journal* has been increased to reduce the backlog of accepted manuscripts. To further speed up the publication process, Wiley has front-loaded the additional pages to the early issues of each calendar year. Also, we are exploring the possibility of further increasing the page budget.

Authors and reviewers can help us reduce the lag time in a number of ways. First, we are asking authors to reduce the size of their manuscripts, so that more can be printed within our existing page allotment. We believe this can be without compromising the quality of the papers we publish. Since readers tend to read a shorter, tighter paper more thoroughly than a ponderous one covering the same material, shortening a manuscript may enhance its readership and impact. It is not always true that bigger (or longer) is better! Also, we will be encouraging greater use of AIChE-maintained, Web-accessible supplementary material for information that while relevant to a paper, is not necessary for understanding its method, substance and/or conclusions. Indeed, we will be asking reviewers, as they evaluate a manuscript, if without undermining the quality can the manuscript be shortened, and if portions of the manuscript could appear as supplementary material.

Without our reviewers, we could not maintain the high quality of the *AIChE Journal*. We are enormously indebted to our reviewers who anonymously and without compensation devote many hours to the *Journal* for the good of the profession. We would like to ask reviewers to contribute a bit more. Please do accept our invitations to review the manuscript that is in your area of expertise, and, when you do, complete the review in a timely manner so that the time between submission of a manuscript and its publication is reduced. As you review manuscripts, please help us reduce the length of manuscripts by indicating which portions of a submission can be eliminated or could appear as Web-accessible supplementary material. We appreciate and need your advice; indeed, we have chosen you as a reviewer because you are an expert in the field.



Stanley I. Sandler
Editor

Preface to Perspectives

In 2004 the *AIChE Journal* celebrated its 50th anniversary. In connection with this milestone, a symposium on “The Future of Chemical Engineering Research” was organized at the Annual AIChE Meeting in Austin. The symposium consisted of three sessions entitled:

- Fundamentals
- Biological Engineering
- Complex Systems

In each session seven talks by leading chemical engineers were followed by a three-member panel discussion. A one-person overview that integrated the talks and discussions within the context of our discipline’s research tradition closed the proceedings.

The symposium proved an excellent opportunity for taking a broad look at the current landscape of chemical engineering research, and for thinking about its future. It is clearly impossible to organize three sessions that can provide a comprehensive representation of every important aspect of chemical engineering research. Nevertheless, we believe that the scope and quality of the talks were such that it is of value to our profession to preserve a written record of the symposium. We are delighted that the *AIChE Journal* will be the medium for its publication.

This issue of the *AIChE Journal* features the first collection of Perspective articles dedicated to the 2004 Symposium “The Future of Chemical Engineering Research.” The five articles in this issue correspond to the session on Complex Systems. The other two sessions will be likewise represented in future issues. We are grateful to the many speakers who were able to contribute to this collection by putting their talks and thoughts on paper.

We feel honored and privileged to have organized the symposium, whose program is reproduced below, and to edit this collection of papers.

Julio M. Ottino, Pablo G. Debenedetti, Arup K. Chakraborty

The Future of Chemical Engineering Research

November 8, 2004

AIChE Annual Meeting, AUSTIN, TX

The Future of Chemical Engineering Research III. Complex Systems

Chair and co-Chair: Julio M. Ottino, Northwestern University and Arup Chakraborty, University of California-Berkeley

Enterprise-wide Optimization: A New Frontier in Process Systems Engineering

Ignacio E. Grossmann, Carnegie Mellon University

Nanoscale Process Systems Engineering: Towards Molecular Factories, Synthetic Cells, and Adaptive Devices

George Stephanopoulos, M.I.T (with N. Stephanopoulos and E.O.P. Solis).

Research Opportunities in the Small

Klavs F. Jensen, M.I.T.

Research Opportunities in Atmospheric Science

John H. Seinfeld, California Institute of Technology

Chemical Engineering of the Future: An Industrial Perspective

Louis Hegedus, Atofina Chemicals, Inc.

Research Challenges, Opportunities, and Synergism in Systems Engineering and Computational Biology

Christodoulos Floudas, Princeton University

New Tools, New Outlooks, New Opportunities

Julio Ottino, Northwestern University

Discussion and Overview

William R. Schowalter, Princeton University

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