Introduction to the Proceedings of the Eleventh Symposium on Biotechnology for Fuels and Chemicals

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INTRODUCTION

Biotechnology is growing in importance for applications in production of fuels, chemicals, and materials. For example, ethanol production from cellulosic biomass is one of the few fuels that can address growing concerns about urban air pollution, global climate change owing to carbon dioxide buildup, national energy security, and international trade deficits. This topic, as well as research and development in other important applications of biotechnology to production of fuels, chemicals, and materials, is addressed in the Eleventh Symposium on Biotechnology for Fuels and Chemicals.

This annual meeting provides an opportunity for researchers in industry, universities, and government laboratories to exchange information on recent developments in innovative biological processing concepts, with particular emphasis on applied and process research early in the life of the technology. The symposium included general and poster sessions on thermal and chemical processing, applied biological research, bioengineering research, and bioprocessing research, as well as a special session on biological processing of fossil fuels. Discussion groups were also organized to facilitate candid interactions of participants on topics of particular timeliness and relevance.

The meeting was sponsored by the Department of Energy, the Oak Ridge National Laboratory, the Solar Energy Research Institute, the Division of Microbial and Biochemical Technology of the American Chemical Society, Badger Engineers, Inc., the Colorado Institute for Research in Biotechnology, the Electric Power Research Institute, and the Gas Research Institute. Organization of the symposium was as follows.

Organizing Committee

Elias Greenbaum, Chairman, Oak Ridge National Laboratory
Charles E. Wyman, Cochairman, Solar Energy Research Institute
James J. Eberhardt, US Department of Energy
Donald L. Johnson, Grain Processing Corporation
Frank R. Landsberger, Alan Patricof Associates
Richard F. Moorer, US Department of Energy
Charles D. Scott, Oak Ridge National Laboratory
Daniel I. C. Wang, Massachusetts Institute of Technology
E. James Whitehead, Badger Engineers, Inc.

Session Chairpersons and Cochairpersons

Session 1: Thermal and Chemical Processing
Ed J. Soltes, Texas A&M University
Helena L. Chum, Solar Energy Research Institute

Session 2: Applied Biological Research
Robert W. Detroy, Allied Signal Engineered Materials Research Center
Karel Grohmann, Solar Energy Research Institute

Session 3: Bioengineering Research
Ruxton H. Villet, US Department of Agriculture
Brian H. Davison, Oak Ridge National Laboratory

Session 4: Bioprocessing Research
John D. Wright, TDA Research, Inc.
Charles D. Scott, Oak Ridge National Laboratory

Session 5: Biological Processing of Fossil Fuels
Bernard D. Blaustein, Pittsburgh Energy Technology Center
Brendlyn D. Faison, Oak Ridge National Laboratory

Poster Session
Jonathan Woodward, Oak Ridge National Laboratory
Antonios Antonopoulos, Argonne National Laboratory

Discussion Leaders
"Photobiological Processes,"
Steven Lien, US Department of Energy, Idaho Operations Office
"MAD (Make-A-Difference) Biotechnology,"
Terry Donaldson, Oak Ridge National Laboratory
"Presenting the Case for Ethanol from Lignocellulose,"
Lee R. Lynd, Dartmouth College
"New Concepts in Separations,"
Michael Ladisch, Purdue University

This symposium has been held annually since 1978, and the proceedings have been published to provide a record of the contributions made. We are pleased to have the proceedings of the Eleventh Symposium published in this journal to continue that tradition.

The Twelfth Symposium in this series is planned for May 7–11,1990 at Gatlinburg, TN. We encourage comments or discussions relevant to the format or content of that meeting.

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5. "Proceedings of the Fifth Symposium on Biotechnology for Fuels and Chemicals" (1983), *Biotechnol. Bioeng. Symp.* **13.**
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8. "Proceedings of the Eighth Symposium on Biotechnology for Fuels and Chemicals" (1986), *Biotechnol. Bioeng. Symp.* **17.**
9. "Proceedings of the Ninth Symposium on Biotechnology for Fuels and Chemicals" (1988), *Appl. Biochem. Biotech.* **17,18.**
10. "Proceedings of the Tenth Symposium on Biotechnology for Fuels and Chemicals" (1989), *Appl. Biochem. Biotech* . **20,21.**