

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

CHARLES E. WYMAN

National Renewable Energy Laboratory

JONATHAN WOODWARD

Oak Ridge National Laboratory

Commercial interest in biotechnology is expanding from primarily high-value, low-volume health care products to production of lower-value, high-volume fuels, chemicals, and materials. This transition is fostered by advances in conversion technology and the opportunity to derive value from biomass waste streams. Biotechnology is also receiving more attention for remediation of contaminated sites and waste processing, particularly as removal of dilute substances is mandated.

This symposium, the thirteenth in this annual series, provided a forum for scientists and engineers to share information and discuss recent advances in the application of biotechnology for production of fuels, chemicals, and materials, and for waste cleanup. Participants represented industries, universities, government agencies, and research institutions from around the world. This year's symposium included general and poster sessions on thermal and chemical processing, applied biological research, bioengineering research, bioprocessing research, and environmental biotechnology. Discussion groups were also organized to facilitate candid interactions of participants on topics of particular timeliness and relevance in government-industry interactions, waste utilization, and advanced bioreactors. A special address was given on the use of ethanol as an automotive fuel. The meeting was sponsored by the Biofuels System Division of the US Department of Energy (DOE), the DOE Advanced Industrial Concepts Division, the DOE Office of Technology Development, the National Renewable Energy Laboratory, Oak Ridge National Laboratory, the Gas Research Institute, Badger Engineers, Inc., the Colorado Institute for Research in Biotechnology, and the Division of Biochemical Technology of the American Chemical Society. Organization of the symposium was as follows:

Organizing Committee

Charles E. Wyman, *Chairman, National Renewable Energy Laboratory*

Jonathan Woodward, *Cochairman, Oak Ridge National Laboratory*

Stanley Bull, *National Renewable Energy Laboratory*

Elias Greenbaum, *Oak Ridge National Laboratory*

Donald L. Johnson, *Grain Processing Corporation*

Leonard Keay, *US Department of Energy*

Richard F. Moorer, *US Department of Energy*

Vincent Murphy, *Colorado State University*

Virginia Omdorff, *Colorado Institute for Research in Biotechnology*

Michael L. Shuler, *Cornell University*

E. James Whitehead, *Badger Engineers, Inc.*

Session Chairpersons and Cochairpersons

Session 1: Thermal, Chemical, and Biological Processing

Y. Y. Lee, *Auburn University*

Barbara J. Goodman, *National Renewable Energy Laboratory*

Session 2: Applied Biological Research

Arnold L. Demain, *Massachusetts Institute of Technology*

Gerald W. Strandberg, *Oak Ridge National Laboratory*

Session 3: Bioprocessing Research

James A. Doncheck, *Bio-Technical Resources*

Michael E. Himmel, *National Renewable Energy Laboratory*

Session 4: Bioengineering Research

Roy W. Grabner, *Monsanto Company*

Charles D. Scott, *Oak Ridge National Laboratory*

Session 5: Biotechnology, Bioengineering, and Environmental Problems

Vipul J. Srivastava, *Institute of Gas Technology*

Paul W. Bergeron, *National Renewable Energy Laboratory*

The submitted manuscript has been authored by a contractor of the US Government under Contract No. DE-AC02-83CH10093. The National Renewable Energy Laboratory is operated by Midwest Research Institute, Inc., for the US Department of Energy under Contract No. DE-AC02-83CH10093. Oak Ridge National Laboratory is managed by Martin Marietta Energy Systems, Inc. for the US Department of Energy under Contract No. DE-AC05-84OR21400.

References

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2. "Proceedings of the Second Symposium on Biotechnology in Energy Production and Conservation" (1980), *Biotechnol. Bioeng. Symp.* 10.
3. "Proceedings of the Third Symposium on Biotechnology in Energy Production and Conservation" (1981), *Biotechnol. Bioeng. Symp.* 11.
4. "Proceedings of the Fourth Symposium on Biotechnology in Energy Production and Conservation" (1982), *Biotechnol. Bioeng. Symp.* 12.
5. "Proceedings of the Fifth Symposium on Biotechnology for Fuels and Chemicals" (1983), *Biotechnol. Bioeng. Symp.* 13.
6. "Proceedings of the Sixth Symposium on Biotechnology for Fuels and Chemicals" (1984), *Biotechnol. Bioeng. Symp.* 14.
7. "Proceedings of the Seventh Symposium on Biotechnology for Fuels and Chemicals" (1985), *Biotechnol. Bioeng. Symp.* 15.
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" (1987), *Appl. Biochem. Biotech.* 17,18.
10. "Proceedings of the Tenth Symposium on Biotechnology for Fuels and Chemicals" (1988), *Appl. Biochem. Biotech.* 20,21.
11. "Proceedings of the Eleventh Symposium on Biotechnology for Fuels and Chemicals" (1990), *Appl. Biochem. Biotech.* 24,25.
12. "Proceedings of the Twelfth Symposium on Biotechnology for Fuels and Chemicals" (1991), *Appl. Biochem. Biotech.* 28,29.

This symposium has been held annually since 1978, We are pleased to have the proceedings of the Thirteenth Symposium currently published in this special issue to continue the tradition of providing a record of the contributions made.

The Fourteenth Symposium is planned for May 11–15, 1992 in Gatlinburg, TN. We encourage comments or discussions relevant to the format or content of that meeting.