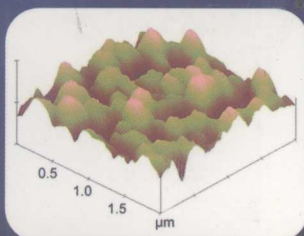
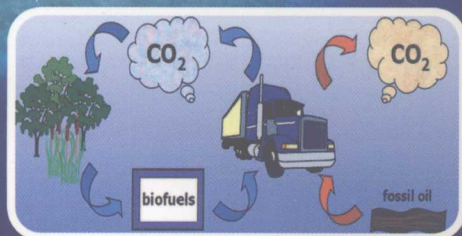


CHEMICAL ENGINEERING IN SUSTAINABLE DEVELOPMENT

Vol 4 Biotechnology

Edited by

Xuhong QIAN and Jingping QU



Dalian University of Technology Press

Book of Abstracts of the 12th Asian Pacific Confederation of
Chemical Engineering Congress
Aug 4~6, 2008, Dalian, China

CHEMICAL ENGINEERING IN SUSTAINABLE DEVELOPMENT

Vol 4 Biotechnology

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In cooperation with

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Contractors

East China University of Science and Technology
Dalian University of Technology

江苏工业学院图书馆
藏书章



Dalian University of Technology Press

图书在版编目(CIP)数据

化学工程的可持续发展/钱旭红,曲景平主编. —大连:大连理工大学出版社,2008.7
ISBN 978-7-5611-4285-1

I. 化… II. ①钱…②曲… III. 化学工程—研究 IV. TQ02

中国版本图书馆 CIP 数据核字(2008)第 111353 号

大连理工大学出版社出版

地址:大连市软件园路 80 号 邮政编码:116023

发行:0411-84708842 邮购:0411-84703636 传真:0411-84701466

E-mail:dutp@dutp.cn URL:http://www.dutp.cn

大连图腾彩色印刷有限公司印刷 大连理工大学出版社发行

幅面尺寸:210mm×290mm
2008 年 7 月第 1 版

印张:16 字数:364 千字
2008 年 7 月第 1 次印刷

责任编辑:刘新彦 王颖鑫

责任校对:知 轩

封面设计:宋 蕾

ISBN 978-7-5611-4285-1

定 价:1580.00 元(共 5 册)

Preface

This five-volume book contains the final abstracts of most of the papers presented at the **12th Asian Pacific Confederation of Chemical Engineering Congress (APCChE2008)** held in Dalian, China in August 4 ~ 6, 2008. Each volume contains approximately 400 abstracts from one or two themes. In addition, a proceeding of the APCChE2008 in a CD-ROM (containing all accepted full-length manuscripts by a large percentage of authors, the technical program, the author-program index and many more) has been prepared for distribution to all participants of APCChE2008.

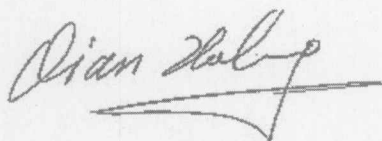
APCChE2008 is the 12th in the series of Congresses on Chemical Engineering launched by the Asian Pacific Confederation of Chemical Engineering (APCChE) in 1979 in Jakarta, Indonesia. Since then, APCChE Congresses have been organized in Philippines (1981), Thailand (Bangkok, 1984), Singapore (1987), Malaysia (Kuala Lumpur, 1990), Australia (1993), China (Taibei, 1996), Korea (Seoul, 1999), New Zealand (Christchurch, 2002), Japan (Kitakyushu, 2004) and Malaysia (Kuala Lumpur, 2006).

The objective of this biennial congress is to provide engineers, scientists, researchers, technologists, teachers and students from the member societies in 13 countries or areas in Asian Pacific region as well as the other parts of the whole world a platform to present their latest results, to interchange ideas, to make new friends and to establish new collaborations. The conference addresses the full spectrum of chemical engineering, including current trends and future needs. The focus of APCChE2008 is **Chemical Engineering in Sustainable Development** including six themes: (1) Clean Energy Technology; (2) Environment and Green Processing; (3) Materials Science and Engineering; (4) Biotechnology; (5) New Frontiers in Chemical Engineering; (6) Education for Chemical Engineers.

I would like to thank all the authors for submitting their abstracts and full papers. I thank the members of the Organizing Committee for their reviews, their advice during the selection process

and the preparation of the technical program. Special thanks go to Prof Jingping Qu, Prof Zhong Xin, Prof Xuehu Ma, Prof Feng Qian, Prof Jie Bao, Prof Li Li, Prof Xuhong Guo, Prof Haoquan Hu, Prof Shuguang LV, Prof Xinwen Guo, Prof Changsheng Liu, Prof Dongfeng Xue, Prof Jianhe Xu, Prof Qing Yang, Prof Zhenmin Cheng, Prof Mingzhai Qi, Prof Gaohong He and the editors of Dalian University of Technology Press in getting abstracts ready for these books. Also, I would like to acknowledge all the contributors to APCChE2008.

I hope that these books of abstracts will serve as a valuable record of reference of the contributions made at APCChE2008.



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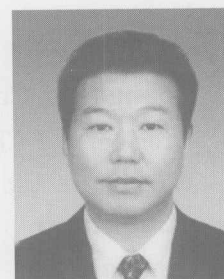
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