

*ADVANCES IN*  
**APPLIED MICROBIOLOGY**

VOLUME 109





VOLUME ONE HUNDRED AND NINE

# ADVANCES IN APPLIED MICROBIOLOGY

Edited by

**GEOFFREY MICHAEL GADD**

*Dundee, Scotland, United Kingdom*

**SIMA SARIASLANI**

*Wilmington, Delaware, United States*



**ACADEMIC PRESS**

An imprint of Elsevier

# Contents

<i>Contributors</i>	<i>vii</i>
<b>1. Microalgae for biofuel production</b>	<b>1</b>
D. James Gilmour	
1. Introduction	2
2. Microalgal biofuels prior to 2007	3
3. Microalgal biofuels post 2007	12
4. Future prospects	24
Acknowledgements	25
References	25
<b>2. Research progress on the basic helix-loop-helix transcription factors of <i>Aspergillus</i> species</b>	<b>31</b>
Bao-Teng Wang, Xing-Ye Yu, Yun-Jia Zhu, Miao Zhuang, Zhi-Min Zhang, Long Jin, and Feng-Jie Jin	
1. Introduction	32
2. bHLH transcription factors found in <i>Aspergillus</i> species	34
3. Conclusions	51
Acknowledgments	52
References	52
<b>3. Advances in yeast alcoholic fermentations for the production of bioethanol, beer and wine</b>	<b>61</b>
Kevy Pontes Eliodório, Gabriel Caetano de Gois e Cunha, Caroline Müller, Ana Carolina Lucaroni, Reinaldo Giudici, Graeme Maxwell Walker, Sérgio Luiz Alves Jr, and Thiago Olitta Basso	
1. General introduction	62
2. Industrial yeast-based fermentation processes	63
3. Biodiversity: The workhorse <i>Saccharomyces</i> and the opportunities of upcoming new strains	82
4. How to mimic industrial yeast fermentations at lab-scale?	94
5. Yeast alcoholic fermentation modeling	100
6. Concluding remarks	105
Acknowledgments	106
References	106
Further reading	119