

# **Modern Multidisciplinary Applied Microbiology**

Edited by  
Antonio Mendez-Vilas

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# **Modern Multidisciplinary Applied Microbiology**

Exploiting Microbes and Their Interactions

Edited by  
Antonio Mendez-Vilas



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## Preface

This book contains selected papers related to contributions that were presented in short during the 1<sup>st</sup> International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld-2005), held on March 15–18<sup>th</sup>, 2005 in Badajoz (Spain). <http://www.formatex.org/biomicroworld2005>, and it is intended to give an overview on the current state-of-the-art of the field.

**Focus of the Conference.** While Microbiology is about the study of microorganisms (bacteria, viruses, algae, fungi, and protozoa) and of related topics such as microbes interactions, the immune response and molecular genetics, Applied Microbiology is quite interdisciplinary, overlapping aspects of several other academic branches, some of them traditionally near, such as cell biology, molecular and cell biophysics, physiology, parasitology, biochemistry, genetics, medicine, pharmacology, and medical technology, and other not so near as physics, physical (bio)chemistry, materials science, nanotechnology, computer science, information technology, instrumentation, but collaboration with which is resulting in extraordinary advances in this post-genomic world. Thus, cross-disciplinary cooperation in Microbiology has made possible that microbiologists can not only study traditional microorganisms, but also aspects of molecular genetics, biosensors, cancer, aging, immunodeficiency diseases, animal and plant cell cultures, and microscopy, among others. Modern microbiology includes a broad variety of scholarly approaches which lead to a better understanding of all living things at the micrometer-scale/cellular and nanometer-scale/molecular level, and which produce beneficial applications in medicine, agriculture, industry, and ecology.

In this context, the Conference called for papers reporting interdisciplinary researchers, relating Microbiology with other Sciences as Physico/Chemistry, Environmental Science, Genetics, Pharmacology, Nanoscience, Microscopy/Imaging Science, etc. In other words, we are specially (but not exclusively) interested in reports applying the techniques, the training, and the culture of Microbiology to research areas usually associated with other scientific and engineering disciplines. Over 750 participants from over 60 countries attended the Conference, 15% of which participated with a grant from the conference organization. Over 1100 works were presented during the different oral and posters sessions. Good examples of modern interdisciplinary applied microbiology were the works represented by the three Plenary Speakers:

**David C. White**, Director of the Center for Biomarker Analysis, University of Tennessee, USA

Lecture: *Biomarkers to define Interactions in the Environment and Health*

**Alexander Steinbüchel**, Institut für Molekulare Mikrobiologie und Biotechnologie, Münster, GERMANY

Lecture: *Unspecific Microbial Enzymes for Template-independent Biosynthesis of Polyoxoesters, Polythioesters and Polyamides*

**Timo Lövgren**, Department of Biochemistry and Food Chemistry/Biotechnology, University of Turku, FINLAND

Lecture: *Novel time-resolved Fluorescence based Immunoassays and Real-time PCR assays in Microbiological Applications*

I am are very grateful to all members of the Organizing Committee for the hard work done in the Conference preparation (which began over a year before the conference) and for the good job that made the Conference so successful that there are already several candidates to host next edition of BioMicroWorld. We would also like to thank the members of the International Scientific Advisory Committee, as well as the reviewers, for their advice, which has certainly helped to improve the quality, accuracy and relevance of this conference Program and publications.

Finally, we would like to thank *BIOMEDAL S.L.-Advances for the Postgenomic Era* (<http://www.biomedal.es>) for sponsoring the Conference.

Hoping that this edition will stimulate further meetings focusing on the interdisciplinary nature of current relevant applied research, we hope that readers will find the content fruitful and interesting.

Antonio Mendez-Vilas  
Editor

FORMATEX, Badajoz, Spain  
June, 2006

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