A PORTRAIT OF STATE-OF-THE-ART RESEARCH
AT THE TECHNICAL UNIVERSITY OF LISBON

A Portrait of State-of-the-Art Research at the Technical University of Lisbon

Edited by

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PREFACE

The Technical University of Lisbon (UTL) is celebrating this year its 75th anniversary. Being a jubilee occasion, a full program of events took place, including a two-day Symposium on the research at UTL. This Symposium addressed the state-of-art in major areas of excellence at UTL.

Science, technology and innovation and the way universities and society in general, create, use and disseminate knowledge have gained a growing significance over the last decades. UTL no doubt embeds a relevant potential of excellence in different areas of research in basic and applied sciences, which bears its development on the basis of a “research university” model.

This book contains the edited version of the invited lectures that were delivered by prominent researchers at UTL. This book brings together in a review manner a comprehensive summary of high quality research contributions across basic and applied sciences.

The contributing papers are organized around the following major areas:

- Emergent areas (Nanosciences, Quantic Computations and Information, Risk and Volatility in Financial Markets);
- Basic Sciences (Mathematics, Physics, Chemistry and Materials);
- Social Sciences, Economics and Management Sciences;
- Life Sciences and Biotechnology;
- Engineering and Technologies
- Nature, Environment and Sustainability;
- Public Health, Food Quality and Safety;
- Health and Sport Sciences;
- Urbanism, Transports, Architecture, Arts and Design.

The transdisciplinary nature of most areas aims to stress a compelling sense of purpose in the work developed.

The editor is indebted to the members of the Organizing Committee, Professors Luís Tavares, Manuela Chaves, João Santos Silva, Francisco Rebelo, Carlos Mota Soares, João Pedro Conde, João Bilhim and Clara Mendes for their valuable suggestions and advice in the organization of the Symposium. We extend our recognition to all lecturers for their contributing presentations. Our appreciation is also due to the collaboration and efforts of Dr. Maria do Céu Crespo and Ms. Lourdes Costa who contributed to the smooth running of the Symposium. We acknowledge the dedicated support of Dr. Nelson Camacho in the editing of the book.

Finally the support of Bank Santander Totta is gratefully acknowledged.

Manuel Seabra Pereira
Vice-Rector for Scientific Affairs
Technical University of Lisbon, Portugal
June 2006