Plasma Processes and Polymers

Edited by
Riccardo d'Agostino, Pietro Favia, Christian Oehr, Michael R. Wertheimer

WILEY-VCH Verlag GmbH & Co. KGaA

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Preface

At the 16th International Symposium on Plasma Chemistry (ISPC-16) in Taormina, which took place in June 2003, we launched the idea to edit a new journal, named *Plasma Processes and Polymers*, and published by Wiley-VCH. The purpose was to collect under the same cover the great majority of articles dealing with plasma processing of polymers and related issues, which at that time were scattered throughout a vast number of journals. The new journal was intended to "correct this unfortunate situation" and to provide a home for the community working in low-temperature plasma surface modification of polymers and other materials, in applications ranging from packaging, biomedical products, displays, to components for aerospace and automotive industries, etc.

We met with such an enthusiastic response at that conference, considered the most representative forum for scientists working in the field of plasma technology, that we decided, right there and then, to solicit original papers from authors who presented suitable contributions. The present book can, therefore, be considered "Volume zero" of the journal bearing the same name, and it has the same editors and publisher. At the same time as this book will be published, the journal will be at its third issue; although still in its infancy, it is already clear that the original idea was very good, because the journal is now attracting the best articles in the world relating to this field.

Plasma Processes and Polymers, the book, is a comprehensive collection of 37 peer-reviewed articles which were presented as contributions at ISPC-16, in several different sessions dealing with low-temperature plasma processes. All of these articles have been carefully examined by the editors and by numerous referees, and the English has been revised according to the highest scientific standards.

The articles have been divided into four chapters, namely: *plasma deposition of thin films; plasma-induced grafting of functional groups; plasma in the life sciences; chemical synthesis, powders and non-equilibrium effects*. Altogether, these articles offer a good overview of recent advances in non-equilibrium low-and high-pressure glow discharges for materials processing, from fundamentals to industrial applications, from diagnostics to materials performance, and from biomedical to environmental applications. We are confident that *Plasma Processes and Polymers*, the book and the journal, will soon become the reference for materials scientists, chemists, physicists, engineers, biologists and physicians, and others who are either experts in the field

or just starting to work in it. In addition, it will constitute a very useful tool for foresightful managers who do not wish to "navigate by the stars", but want to orient themselves in a rigorous manner while "sailing on the ocean of plasma applications".

At the end of this enterprise, we like to warmly thank Ms Grazia Retto and Ms Roberta Giordano, from the staff at the University of Bari, who have dedicated for almost one year their professional care and great dedication to this project.

We hope that you will enjoy reading this book as much as we enjoyed editing it!

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