

Plasma Processes and Polymers

Edited by

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



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Editors

Prof. Riccardo d'Agostino

Dipartimento di Chimica
Universita di Bari, Italy

Prof. Pietro Favia

Dipartimento di Chimica
Universita di Bari, Italy

Dr. Christian Oehr

Fraunhofer Institute for Interfacial
Engineering and Biotechnology IGB
Stuttgart, Germany

Prof. Michael R. Wertheimer

Department of Engineering Physics
Ecole Polytechnique, Montreal,
Canada

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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!

Riccardo d’Agostino

Pietro Favia

Christian Oehr

Michael R. Wertheimer

List of Contributors

d'Agostino, R.

Department of Chemistry, University of Bari, Bari, Italy

Aoucher, M.

Laboratoire de physique des matériaux, Equipe couches minces et semiconducteurs, Faculté de Physique, El Alia, Bab-ezzouar, Alger, Algérie

Argitis, P.

Institute of Microelectronics, NCSR "Demokritos", Athens, Greece

Aréfi-Khonsari, F.

LGPPTS, E.N.S.C.P., Paris, France

Balazs, D. J.

Laboratory for Functional Fibers and Textiles, Swiss Federal Laboratories for Materials Testing and Research (EMPA), St. Gallen, Switzerland

Balazs, D. J.

Materials Science Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Bayiati, P.

Institute of Microelectronics-NCSR "Demokritos", Athens, Greece

Bellas, V.

Institute of Microelectronics, NCSR "Demokritos", Athens, Greece

van Berkel, J. J. B. N.

Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

Bertrand, P.

PCPM, Université Catholique de Louvain, Louvain-la-Neuve, Belgique

Bobin, S.

Biomatech, Chasse sur Rhone, France

Brani, O.

Institute of Microelectronics, NCSR "Demokritos", Athens, Greece

Bratescu, M. A.

Division of Electronics and Information Engineering, Hokkaido University, Sapporo, Japan

Cardinaud, C.

Laboratoire des Plasmas et des Couches Minces, Institut des Matériaux, Nantes, France

Cartry, G.

Laboratoire des Plasmas et des Couches Minces, Institut des Matériaux, Nantes, France

Chen, Z.

College of Sciences, Donghua University, Shanghai, China

Constantoudis, V.

Institute of Microelectronics, NCSR "Demokritos", Athens, Greece

De Mitri, R.

European Commission, Joint Research Centre, Institute for Health and Consumer Protection, Ispra, Italy

Debarnot, D.

Laboratoire Polymères, Colloïdes, Interfaces, Université du Maine, Le Mans, France

Detomaso, L.

Department of Chemistry, Institute of Inorganic Methodologies and Plasmas (IMIP), University of Bari, Bari, Italy

Deyneka, A.

Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Dorđević, A. R.

Faculty of Electrical Engineering, University of Belgrade, Belgrade, Serbia and Montenegro

Durand, A. E.

Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB-CNRS), Université Bordeaux, Pessac, France.

Durand, S.

Laboratoire Polymères, Colloïdes, Interfaces, Université du Maine, Le Mans, France

Eichhorn, K.-J.

Institute of Polymer Research Dresden, Dresden, Germany

Eloy, R.

Biomatech, Chasse sur Rhone, France

Eon, D.

Laboratoire des Plasmas et des Couches Minces, Institut des Matériaux, Nantes, France

Farrera, E.

Escuela de Química, Facultad de Ciencias, Universidad Central de Venezuela, Caracas, Venezuela

Favia, P.

Department of Chemistry, University of Bari, Bari, Italy

Finke, B.

Materials Science Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Fortov, V.

Institute of Problems of Chemical Physics, Chernogolovka, Russia

Fortov, V. E.

Institute for High Energy Densities, Russian Academy of Sciences, Moscow, Russia

Friedrich, J.

Federal Institute for Materials Research and Testing (BAM), Berlin, Germany

Gerlach, G.

Institute for Solid State Electronics,
Dresden University of Technology,
Dresden, Germany

Giba, Z.

Institute of Botany, Faculty of Biology,
University of Belgrade, Belgrade, Serbia
and Montenegro

Gisbert-Soler, S.

AIJU Toy Research Institute, Ibi
(Alicante), Spain

Glidle, A.

Nanoelectronics Research Centre,
Department of Electronics and
Electrical Engineering, Glasgow
University, Glasgow, United Kingdom

Gogolides, E.

Institute of Microelectronics, NCSR
“Demokritos”, Athens, Greece

Gristina, R.

Institute of Inorganic Methodologies
and Plasmas, Bari, Italy

Grubišić, D.

Institute for Biological Research “Siniša
Stanković”, Belgrade, Serbia and
Montenegro

Guenther, M.

Institute for Solid State Electronics,
Dresden University of Technology,
Dresden, Germany

Guo, Y.

College of Sciences, Donghua
University, Shanghai, China

Hanic, F.

Institute of Measurement Science,
Slovak Academy of Sciences, Bratislava,
Slovakia

Harms, H.

Institute of Environmental Science and
Technology, Swiss Federal Institute of
Technology (EPFL), Lausanne,
Switzerland

Hegemann, D.

Swiss Federal Laboratories for Material
Testing and Research EMPA, St. Gallen,
Switzerland

Henda, K.

Centre de Développement des
Technologies Avancées, Division des
milieux ionisés & Lasers, Baba Hassan,
Alger, Algérie

Hirose, A.

Plasma Physics Laboratory, University
of Saskatchewan, Saskatoon, Canada

Hodson, C.

Oxford Instruments Plasma
Technology, Bristol, United Kingdom

Iacobelli, L.

Department of Chemistry, University of
Bari, Bari, Italy

Iacoviello, G.

Department of Chemistry, University of
Bari, Bari, Italy

Ivanov, A.

RCC “Kurchatov Institute”, Moscow,
Russia

Janca, J.

Department of Physical Electronics,
Masaryk University, Brno, Czech
Republic

Jastrabik, L.

Institute of Physics, Academy of
Sciences of the Czech Republic,
Prague, Czech Republic

Kado, S.

Department of Mechanical and Control
Engineering, Tokyo Institute of
Technology, Tokyo, Japan

Karpiński, L.

Institute of Plasma Physics and Laser
Microfusion, Warszawa, Poland

Kawajirim, K.

Institute of Fluid Science, Tohoku
University, Sendai, Japan

Khrapak, A. G.

Institute for High Energy Densities,
Russian Academy of Sciences, Moscow,
Russia

Kieft, E. R.

Department of Applied Physics,
Eindhoven University of Technology,
Eindhoven, The Netherlands

Kieft, I. E.

Department of Biomedical
Engineering, Eindhoven University of
Technology, Eindhoven, The
Netherlands

Kijeński, J.

Industrial Chemistry Research
Institute, Warsaw, Poland

Kimura, Y.

Department of Mechanical and Control
Engineering, Tokyo Institute of
Technology, Tokyo, Japan

Kinsey, C. R.

Oxford Instruments Plasma
Technology, Bristol, United Kingdom

Kodama, S.

Department of Chemical Engineering,
Tokyo Institute of Technology, Tokyo,
Japan

Krawczyk, I.

Faculty of Process and Environmental
Engineering, Technical University of
Lodz, Lodz, Poland

Kudrle, V.

Department of Physical Electronics,
Masaryk University, Brno, Czech
Republic

Kuznetsov, A. V.

The Research Center for Biomaterials,
Research Institute of Transplantology
and Artificial Organs, Moscow, Russia

Kühn, G.

Federal Institute for Materials Research
and Testing (BAM), Berlin, Germany

Labrugère, C.

Institut de Chimie de la Matière
Condensée de Bordeaux (ICMCB-
CNRS), Université Bordeaux, Pessac,
France.

Lahmar, H.

Centre de Développement des
Technologies Avancées Division des
milieux ionisés & Lasers, Baba Hassan,
Alger, Algérie

Laurens, P.

LALP-CNRS, Arcueil, France

Liang, J.

Department Of Materials Science and Technology, University of Cincinnati, Cincinnati, Ohio, USA

Lopez, L. C.

Department of Chemistry, Institute of Inorganic Methodologies and Plasmas (IMIP), University of Bari, Bari, Italy

Martín-Martínez, J. M.

Adhesion and Adhesives Laboratory, Department of Inorganic Chemistry, University of Alicante, Alicante, Spain

Martínez-García, A.

AIJU Toy Research Institute, Ibi (Alicante), Spain

Mathieu, H. J.

Materials Science Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Mejía, A.

Escuela de Química, Facultad de Ciencias, Universidad Central de Venezuela, Caracas, Venezuela

Milella, A.

Department of Chemistry, University of Bari, Bari, Italy

Misiakos, K.

Institute of Microelectronics-NCSR "Demokritos", Athens, Greece

Mitin, V.

Institute for Inorganic Materials, Moscow, Russia

Mix, R.

Federal Institute for Materials Research and Testing (BAM), Berlin, Germany

Molotkov, V. I.

Institute for High Energy Densities, Russian Academy of Sciences, Moscow, Russia

Morva, I.

Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia

Morvová, M.

Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia

Müller, M.

Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart, Germany

Nishiyama, H.

Institute of Fluid Science, Tohoku University, Sendai, Japan

Nozaki, T.

Department of Mechanical and Control Engineering, Tokyo Institute of Technology, Tokyo, Japan

Oehr, C.

Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart, Germany

Ohl, A.

Materials Science Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Okazaki, K.

Department of Mechanical and Control Engineering, Tokyo Institute of Technology, Tokyo, Japan

Van Ooij, W. J.

Department Of Materials Science and Technology, University of Cincinnati, Cincinnati, Ohio, USA

Opalińska, T.

Industrial Chemistry Research Institute, Warsaw, Poland

Opalska, A.

Industrial Chemistry Research Institute, Warsaw, Poland

Ortiz-Magán, A. B.

Adhesion and Adhesives Laboratory, Department of Inorganic Chemistry, University of Alicante, Alicante, Spain

Ouchabane, M.

Centre de Développement des Technologies Avancées, Division des milieux ionisés & Lasers, Alger, Algérie

Pal, A.

Institute of Nuclear Physics, Moscow State University, Gory, Moscow, Russia

Pascu, M.

Laboratoire Polymères, Colloïdes, Interfaces, Université du Maine, Le Mans, France

Pastor-Blas, M. M.

Adhesion and Adhesives Laboratory, Department of Inorganic Chemistry, University of Alicante, Alicante, Spain

Patiño, P.

Escuela de Química, Facultad de Ciencias, Universidad Central de Venezuela, Caracas, Venezuela

Petit, S.

LALP-CNRS, Arcueil, France

Petrov, O. F.

Institute for High Energy Densities, Russian Academy of Sciences, Moscow, Russia

Petrović, Z. L.

Institute of Physics, Zemun, Serbia and Montenegro

Poncin-Epaillard, F.

Laboratoire Polymères, Colloïdes, Interfaces, Université du Maine, Le Mans, France

Poustylnik, M. Y.

Institute for High Energy Densities, Russian Academy of Sciences, Moscow, Russia

Puač, N.

Institute of Physics, Zemun, Serbia and Montenegro

Ramachandran, K.

Institute of Fluid Science, Tohoku University, Sendai, Japan

Rossi, F.

European Commission, Joint Research Centre, Institute for Health and Consumer Protection, Ispra, Italy

Ryabinkin, A.

Institute of Nuclear Physics, Moscow State University, Gory, Moscow, Russia

Sahre, K.

Institute of Polymer Research Dresden,
Dresden, Germany

Sakai, Y.

Division of Electronics and Information
Engineering, Hokkaido University,
Sapporo, Japan

Sakura, N.

Division of Electronics and Information
Engineering, Hokkaido University,
Sapporo, Japan

Sammynaiken, R.

Department of Chemistry, University of
Saskatchewan, Saskatoon, Canada

Sardella, E.

Department of Chemistry, University of
Bari, Bari, Italy

Schmidt-Szałowski, K.

Faculty of Chemistry, Warsaw
University of Technology, Warsaw,
Poland

Schröder, K.

Materials Science Institute, Swiss
Federal Institute of Technology (EPFL),
Lausanne, Switzerland

Schütz, U.

Swiss Federal Laboratories for Materials
Testing and Research EMPA, St. Gallen,
Switzerland

Sciarratta, V.

Fraunhofer Institute for Interfacial
Engineering and Biotechnology,
Stuttgart, Germany

Segura-Domingo, A.

AIJU Toy Research Institute, Ibi
(Alicante), Spain

Sekiguchi, H.

Department of Chemical Engineering,
Tokyo Institute of Technology, Tokyo,
Japan

Sekkal, A.

Centre de Développement des
Technologies Avancées, Division des
milieux ionisés & Lasers, Alger, Algérie

Senesi, G. S.

Institute of Inorganic Methodologies
and Plasmas, Bari, Italy

Serov, A.

Institute of Nuclear Physics, Moskow
State University, Gory, Moskow, Russia

Sevastianov, V. I.

The Research Center for Biomaterials,
Research Institute of Transplantology
and Artificial Organs, Moscow, Russia

Shi, Ch.

College of Sciences, Donghua
University, Shanghai, China

Shi, D.

Department Of Materials Science and
Technology, University of Cincinnati,
Cincinnati, Ohio, USA

Shulga, Y. M.

Institute of Problems of Chemical
Physics, Moscow, Russia

Sim, C.

Nanoelectronics Research Centre,
Department of Electronics and
Electrical Engineering, Glasgow
University, Glasgow, United Kingdom

Singh A.

Plasma Physics Laboratory, University
of Saskatchewan, Saskatoon, Canada

Skryleva, E.

Institute of Problems of Chemical
Physics, Chernogolovka, Russia

Starostin, A.

RCC “Kurchatov Institute”, Moscow,
Russia

Stoffels, E.

Department of Biomedical
Engineering, Eindhoven University of
Technology, Eindhoven, The
Netherlands

Storr, M.

Gambro dialysators GmbH & Co. KG,
Hechingen, Germany

Suchaneck, G.

Institute for Solid State Electronics,
Dresden University of Technology,
Dresden, Germany

Suda, Y.

Division of Electronics and
Information Engineering, Hokkaido
University, Sapporo, Japan

Sugawara, H.

Division of Electronics and
Information Engineering, Hokkaido
University, Sapporo, Japan

Sun, L.

College of Sciences, Donghua
University, Shanghai, China

Sánchez-Reche, A.

AIJU Toy Research Institute, Ibi
(Alicante), Spain

Talsky, A.

Department of Physical Electronics,
Masaryk University, Brno, Czech
Republic

Tegou, E.

Institute of Microelectronics, NCSR
“Demokritos”, Athens, Greece

Torchinsky, V. M.

Institute for High Energy Densities,
Russian Academy of Sciences, Moscow,
Russia

Tressaud, A.

Institut de Chimie de la Matière
Condensée de Bordeaux (ICMCB-
CNRS), Université Bordeaux, Pessac,
France

Triandafillu, K.

Institute of Environmental Science and
Technology, Swiss Federal Institute of
Technology (EPFL), Lausanne,
Switzerland

Tserepi, A.

Institute of Microelectronics, NCSR
“Demokritos”, Athens, Greece

Tyczkowski, J. I.

Faculty of Process and Environmental
Engineering, Technical University of
Lodz, Lodz, Poland

Ulejczyk, B.

Faculty of Chemistry, Warsaw
University of Technology, Warsaw,
Poland

Vasilets, V. N.

The Research Center for Biomaterials,
Research Institute of Transplantology
and Artificial Organs, Moscow, Russia

Vohrer, U.

Fraunhofer Institute for Interfacial
Engineering and Biotechnology IGB,
Stuttgart, Germany

Vourdas, N.

Institute of Microelectronics, NCSR
“Demokritos”, Athens, Greece

Wang, Y.

College of Sciences, Donghua
University, Shanghai, China

Wilkinson, C. D. W.

Nanoelectronics Research Centre,
Department of Electronics and
Electrical Engineering, Glasgow
University, Glasgow, United Kingdom

Wolf, B.

Dept. of Computer Science, Electr. and
Mech. Engineering, University of
Applied Sciences, Senftenberg,
Germany

Woźniak, B.

Leather Research Institute, Lodz,
Poland

Xie, H.

College of Sciences, Donghua
University, Shanghai, China

Yamaoka, D.

Division of Electronics and Information
Engineering, Hokkaido University,
Sapporo, Japan

Yang, P. J. Q.

College of Sciences, Donghua
University, Shanghai, China

Yang, Q.

Plasma Physics Laboratory, University
of Saskatchewan, Saskatoon, Canada

Zhang, J.

College of Sciences, Donghua
University, Shanghai, China

Zhou, H.

Nanoelectronics Research Centre
Department of Electronics and
Electrical Engineering, Glasgow
University, Glasgow, United Kingdom

Zhou, R.

College of Sciences, Donghua
University, Shanghai, China

Zhu, F.

College of Sciences, Donghua
University, Shanghai, China

Zieliński, T.

Industrial Chemistry Research
Institute, Warsaw, Poland

Živković, S.

Institute for Biological Research “Siniša
Stanković”, Belgrade, Serbia and
Montenegro

