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SURFACE & COATINGS TECHNOLOGY

**13th International Conference on Plasma-Based Ion
Implantation and Deposition**

**Editor-in-Chief
A. Matthews**

**Editors
G. Abadias
S. Aouadi
L. Lusvarghi
H.C. Man
P.J. Martin
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**I. Petrov
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Surface and Coatings Technology is an international archival journal publishing scientific papers on surface and interface engineering to modify and improve the surface properties of materials for protection in demanding contact conditions or aggressive environments, or for enhanced functional performance. Contributions range from original scientific articles concerned with applied research or direct applications of coatings, to invited reviews of current technology in specific areas. Papers submitted to this journal are expected to be in line with the following aspects in processes, and properties/performance:

- A. Processes: Physical and chemical vapour deposition techniques, thermal and plasma spraying, surface modification by directed energy techniques such as ion, electron and laser beams, thermo-chemical treatment, wet chemical and electrochemical processes such as plating, sol-gel coating, anodization, plasma electrolytic oxidation, etc., but excluding painting.
- B. Properties/performance: friction performance, wear resistance (e.g., abrasion, erosion, fretting, etc), corrosion and oxidation resistance, thermal protection, diffusion resistance, hydrophilicity/hydrophobicity, and properties relevant to enhanced functional performance for environmental, energy and medical applications, but excluding device aspects.

Articles must go beyond the technical recipe format and gain new understanding and insight based on detailed characterization of coatings and processes. Experimental papers should provide complete information on the process parameters and an appropriate microstructural characterization. Also, papers which include test data should provide full details of the test equipment and parameters. Such papers should report on the synthesis-characterization-properties-performance relationships. Manuscripts must be written in good English and contain a balanced and up-to-date reference list formatted according to the guide-for-authors.

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Editorial

Preface - 13th International Conference on Plasma-Based Ion Implantation and Deposition



Selected papers presented at the 13th International Conference on Plasma Based Ion Implantation and Deposition (PBII&D 2015) are published in this special issue of Surface & Coatings Technology. PBII&D 2015 was held from October 5 to 9 in Buenos Aires, Argentina. The PBII&D conference which began in the US in 1993 has been taking place every two years rotating among America, Asia, and Europe.

Specialists, scientists, and engineers involved in plasma surface processing attend this conference to present the latest scientific and technical developments as well as future trends concerning plasma-based and ion-assisted surface treatment and thin film deposition. As a result of the applicability and versatility of plasma-based processes to large and complex surfaces and affordable operation, these processes are widely applied to the improvement of a variety of materials such as metals, ceramics, semiconductors, and polymers in a wide range of applications including metallurgy, electronics, optics, photovoltaics, chemistry, biomedical engineering, and nanotechnology. PBII&D is multi- and inter-disciplinary forum involving researchers and engineers working in plasma physics, materials science, plasma instrumentation and diagnostics, as well as surface analysis.

PBII&D2015 was attended by 85 people from 16 countries worldwide. General and generous sponsorship was provided by the Plasma Physics Institute and Science Faculty of the University of Buenos Aires -Argentine National Research Council. Regarding the scientific program, the topics were mainly on plasma-based ion implantation and deposition including plasma surface processing methods, plasma diagnostics, modeling, and fundamental issues associated with

plasma processing, industrial applications, characterization of treated surfaces and coatings, as well as nanostructured and functional coatings. The plenary lecture was delivered by Prof. M. M. Bilek of The University of Sydney and the keynote lecture by Prof. Paul K. Chu of City University of Hong Kong. Eighty three papers were presented, including 8 invited talks, 21 contributed oral presentations, and 54 poster papers.

The papers published in this special issue were rigorously reviewed according to the high standard of the journal and represent the state-of-the-art of the fields. As guest editors, we would like to express gratitude to all the referees as well as Prof. Ivan Petrov for his support and guidance throughout the process. We also give our heartfelt thanks to all the attendees, especially members of the international committee, for their contribution to the continuous success of the conference.

The next PBII&D conference will be held in Shanghai, China in 2017.

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