Book review

Atmospheric Pressure Plasma for Surface Modification

Rory A. Wolf. John Wiley and Scrivener Publishing, 2013, ISBN 978-1-118-01623-7, 244 pp.

In the last few years, there has been an explosive growth of interest in the atmospheric pressure plasma (APP) technology. This intense interest stems from the fact that APP offers many advantages vis-a-vis the conventional low-pressure (vacuum) plasma, namely no vacuum equipment required, easy operation, continuous process and choice of gas atmosphere. APP technique is currently used for surface modification of various materials, particularly polymers (plastics) for a host of purposes, for example, to render surfaces bondable, printable, antifouling, anti-icing, antimicrobial and biocompatible. Concomitantly, there has been brisk R&D activity in ameliorating the current APP reactors or devising new and improved ways to harness APP technology.

The book by Rory A. Wolf is a welcome and timely publication. The book is divided into 13 sections as follows:

- Plasma – The Fourth State of Matter
- Plasmas for Surface Modification
- Atmospheric Plasma Surface Modification Effects
- Characterization Methods of Atmospheric Plasma Surface Modifications
- Atmospheric Plasma Modification of Roll-to-Roll Polymeric Surfaces
- Atmospheric Plasma Modification of Three-Dimensional Polymeric Surfaces

- Atmospheric Plasma Modification of Textile Surfaces
- Atmospheric Plasma Modification of Paper Surfaces
- Atmospheric Plasma Modification of Metal Surfaces
- Atmospheric Plasma Surface Antimicrobial Effects
- Economic and Ecological Considerations
- Emerging and Future Atmospheric Plasma Application
- Economic and Environmental Assessment

The author provides necessary information to carry out APP treatment and gives examples from many and diverse industries, for example, printing, bonding, coating, biomedical where APP has been found to be very effective. As we delve deeper into the working of APP, new application vistas will emerge. As a side comment, I even heard that some company is planning to come up with an APP device for *in-situ* treatment of lips to enhance lipstick adhesion and of nails to enhance nail polish adhesion. What an interesting and exciting application!

This book is recommended to anyone who wishes to acquire the practical and applied aspects of APP technology. Having said all this, I must mention that the author should have done a much better job at proofreading the text, as it contains too many silly mistakes. In addition, many references have incomplete information or are not cited properly.

Kash Mittal

Editorial Board Member - Surface Innovations

E-mail: usharmittal@optimum.net