mc nac Technical Note

Polymer Film Surface Analysis by XPS

Summary

The physical properties of polymer film can be changed significantly by surface treatment. X-ray photoelectron spectroscopy (XPS) makes it possible to analyze functional groups in the nm micro area, and XPS is effective for studying a correlation between changes in physical properties and structure caused by surface treatment.

Plasma treatment of polyethylene terephthalate (PET) film surface

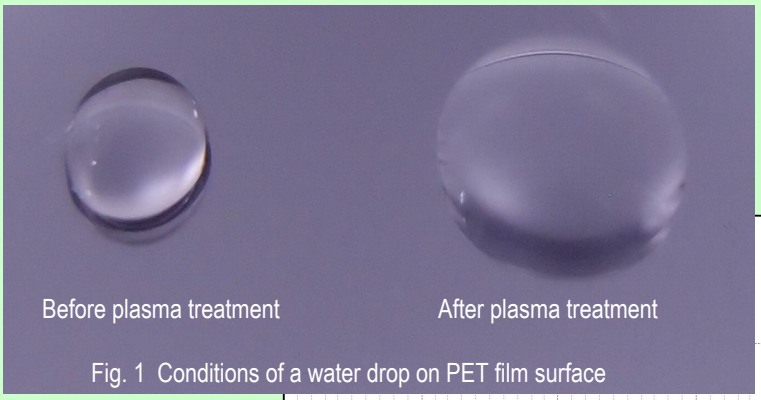

Fig. 1 Conditions of a water drop on PET film surface

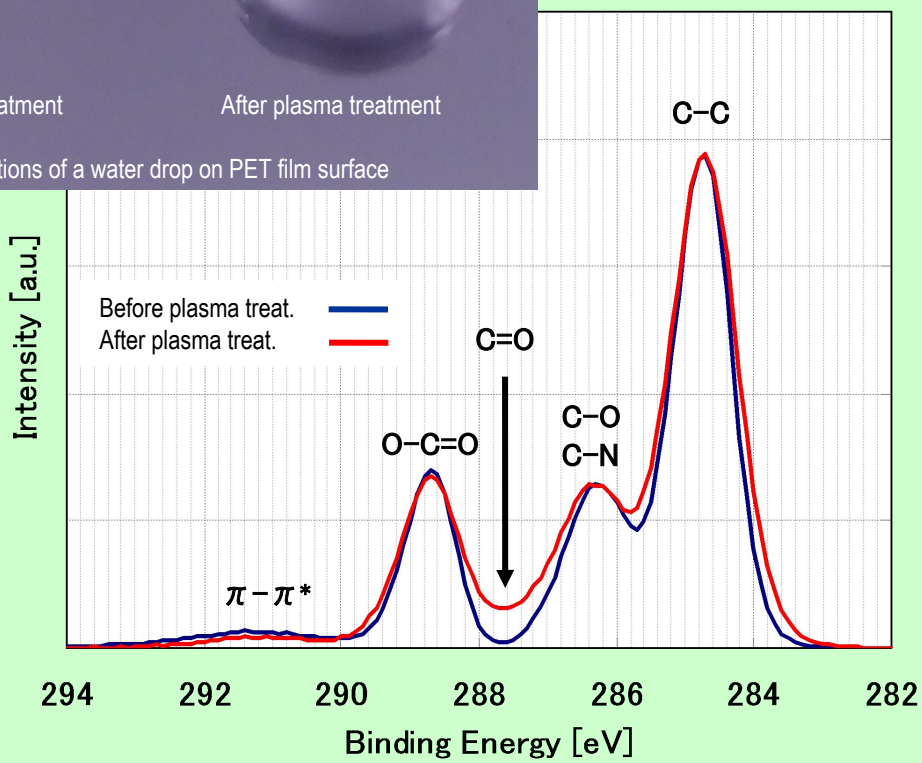

Fig. 2 XPS-C1s spectrum before and after plasma treatment

From Fig. 1, it can be seen that the plasma treatment of PET film hydrophilizes the film surface.
From Fig. 2, it can be known that a comparison of XPS-C1s before and after plasma treatment indicates that the bonded conditions of carbon changes and the ratio of C=O bonds increases.
It can be presumed that plasma treatment causes the formation of C=O bonds, contributing to hydrophilization.

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