World Academy of Science, Engineering and Technology
International Journal of Materials and Metallurgical Engineering
Vol:17, No:08, 2023

# Surface Modification of Polycarbonate Substrates via Direct Fluorination to Promote the Staining with Methylene Blue

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**Abstract :** The surface of polycarbonate (PC) was modified with fluorine gas at 25℃ and 10-380 Torr for one h. The surface roughness of the fluorinated PC samples was approximately five times larger than that (1.2 nm) of the untreated thing. The results of Fourier transform infrared spectroscopy, and X-ray photoelectron spectroscopy showed that the bonds (e.g., -C=O and C-Hx) derived from raw PC decreased and were converted into fluorinated bonds (e.g., -CFx) after surface fluorination. These fluorinated bonds showed higher electronegativity according to the zeta potential results. Fluorinated PC could be strained with the methylene blue basic dye because of the increased surface roughness and the negatively charged surface.

**Keywords :** dyeable layer, polycarbonate, surface fluorination, zeta potential
**Conference Title :** ICASS 2023 : International Conference on Applied Surface Science
**Conference Location :** Barcelona, Spain
**Conference Dates :** August 10-11, 2023