Preparation of PEDOT:PSS composite silicone emulsion and its applications in anti-static release film

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Conducting polymer, Poly (3, 4-ethylenedioxythiophene): poly (styrenesulfonate) (PEDOT:PSS) is an important commercial role in anti-static coating.
And silicone emulsion is often used in release film coating. With silicone emulsion coating, uniform, low coat weights can be obtained on simple solution coating process.
Generally, anti-static release film is coated release coating after anti-static coating.
In this study, to improve the anti-static and release function of PET film surface, the composition of PEDOT:PSS and emulsion silicon as a solution process at once.
The influence of pH value of the PEDOT:PSS solution, the coating thickness, and silicone emulsion ratio was studied. These results are that the surface resistance of the PET film is reduced from 10^{12} to 10^{6} ohm/sq. The release force of the PET film is reduced from 2,404gf/25 mm to 15gf/25 mm after coated with anti-static release coating.