

**[SP-10]**

## Development of TiO<sub>2</sub> powder for cosmetics using atmospheric plasma treatment

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Titanium dioxide (TiO<sub>2</sub>) has color properties of extreme whiteness and brightness, is relatively inexpensive, and is extensively used as a white pigment in a variety of materials. TiO<sub>2</sub>, an effective blocker of ultraviolet light, is frequently added to sunscreens and cosmetic creams. Atmospheric plasma treatment represents an efficient, clean and economic alternative to activate TiO<sub>2</sub> powder surfaces. Oxygen (O<sub>2</sub>) plasma treatment at room temperature within 5 min. in the power range of 100 ~300 W were used to elevate hydrophilic property of the TiO<sub>2</sub> powder surfaces. Hydrophilicity and structural properties were elevated by the measurement of the contact angle, scanning electron microscopy (SEM), infrared spectroscopy (IR), and atomic force microscopy (AFM). We confirmed that the plasma treatment was very reliable method for the synthesis of TiO<sub>2</sub> powder with high wettability and structural performance.