

# **Colorful TiO<sub>2</sub> Particle**

Wide colored pigment without transition metals



### Overview

Transition metal doping is one of the solution to colorize inorganic pigments. This method is adoptive to TiO<sub>2</sub> pigments, however, transition metal-doped pigments are not sufficient for cosmetic products as transition metals have ecotoxicity.

This invention realized wide variety of colored TiO<sub>2</sub> pigments without transition metal doping, such as RGB as shown right half of this paper.

This invention is expected to expand cosmetic product applications, or replace traditional organic and inorganic materials.

### Related Works

[1] Jingdi Cao, Yusuke Asakura, and Shu Yin, B/N Anions Codoped Multi-crystalline TiO2 and Its Photocatalytic Activity, PACRIM13 October 27 - November 1, 2019 [2] Jingdi Cao, Yusuke Asakura, Takuya Hasegawa, Shu Yin, Synthesis and Photochemical Performance Evaluation of Colorful Three Phases,公益社団法人日本セラミックス協会 2020年年会, 2020

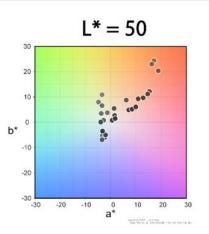
#### **IP Data**

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## Wide variety of color by process control





# Product Application

- Cosmetic products
- Inorganic pigments required atoxic

#### Contact



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