

Novel reddish dye of hematite encapsulated with inorganic metal

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Iron oxides have been used in various fields such as catalysts, electrode materials in lithium secondary batteries and cosmetics. Besides, iron oxides were used as a pigment because iron oxides are harmless to people and environments. Also, tinting strength is strong and iron oxides are widespread in nature. However, iron oxides have drawback that is weakness of color fastness.

So, other researchers improve color hue through inclusion of inorganic metals such as Silicon oxide and Zirconium oxide. In order to improve the color fastness of iron oxides and embody novel a reddish yellow color, inorganic metal encapsulation of iron oxides was studied. We did experiments about coated inorganic metal to improve the reddish-yellow color. Through the researches, dyes of aluminum oxide coated iron oxide improve the yellowish red color tone. Aluminum oxide coated iron oxide increases *a and *b compared to pure iron oxide. Also Yttrium element also improves red color because this element decreases *b value compared to pure iron oxide.