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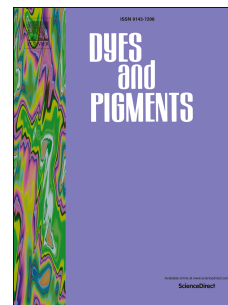
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Mesoporous silica films with accessible pore structures on iron oxide

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Continuous mesoporous silica films on iron(III) oxide have been prepared by a sol-gel technique using cationic surfactant as the structure-directing agent in aqueous media. The samples were analysed by X-ray diffraction (XRD), transmission and scanning electron microscopy (TEM & SEM), infrared (IR) and UV-Vis spectroscopy. The effect of silica modification on the iron oxide properties was also studied by sensory analysis.

Keywords: mesoporous silica; pigment; cosmetics

INTRODUCTION

Pigments can be categorised on the basis of their chemical structure or optical and technological properties. They are defined as materials insoluble in water, oil or organic solvents, with a pigmentation stemming from reflection, absorption or interference of light of a specific wavelength [1]. This type of materials may be classified in relation to their colour, origin (organic/inorganic), production method (synthetic/natural) and the character of the pigment material (e.g., light and weather resistance, colour strength, ease of dispersion, etc.). Inorganic pigments are usually more resistant to light and atmospheric conditions and show higher dispersive abilities. Pigments improve the aesthetic value of many products (e.g., fabrics, rubber, paper, food and cosmetics, etc.) but they may also act as corrosion protective agents for metal objects [2, 3].

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