

## Microstructural Investigations of Metal Oxides Encapsulated Thermochromic Materials

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**Abstract :** This study is aimed to develop microencapsulated thermochromic materials and the analysis of core-shell formation using high resolution electron microscopy. The candidate metal oxides (e.g., titanium oxide and silicon oxide) used for the microencapsulation of thermochromic materials are based on the microemulsion route that involves the micelle formation using different surfactants. The effectiveness of the core-shell microstructure formation revealed the influence of surfactants and the metal oxide precursor concentrations. Additionally, a detailed thermal and color chromic behavior of these core-shell microcapsules are evaluated with the pristine thermochromic dye particles.

**Keywords :** core-shell thermochromic materials, core-shell microstructure formation, thermal and color chromic behavior of core-shell microcapsules, development micro-capsulated thermochromic materials

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