

**oligomers for enhanced textile printing****H.A. Diab<sup>a</sup>, S. A. Rashed <sup>a</sup> and O.A. Hakeim<sup>b</sup>**

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**Abstract:**

Aminopropylsilsesquioxane oligomers (APS) encapsulated PB15:3 are formulated for *in situ* printing of cellulosic fabric and its blend. The encapsulation was developed by using various APS terminated groups; vinyl- sesquioxane (APSV) and methylsilsesquioxane (APSM) using the liquid- phase separation method. The characters of APSV-encapsulated pigments were examined by using thermal gravimetric analysis (TGA), Atomic force microscopy and electron microscope (SEM/TEM), Fourier transform infrared spectroscopy (FTIR) , dynamic light scattering (DLS), X-ray photoelectron (XPS). The characterization confirmed the successful encapsulation of PB15:3 into APSV. The vinyl terminated group in APSV provide a silicone formulations can be rapidly cured and cross-linked by UV or low thermal initiation to accelerate the driving force of the pigment printing process on cotton and polyester\cotton blend fabrics. The results showed that the encapsulated pigments improved the pigment print fixation on cellulosic fabric and its blend and decreased the requested amount of the binder and fixation of temperature that is relative to the control sample. The colour strength and light fastness were greatly influenced by the mode of fixation and APS type.