SYNTHESIS AND CHARACTERISATION OF MICRON-SIZED, POLYPYRROLE-COATED POLYSTYRENE LATEXES.

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Workers at DSM Research have reported[1] that sterically-stabilised latex particles can be coated with a layer of polypyrrole in aqueous media to form conducting polymer latexes which exhibit good colloid stability. The conducting polymer is formed as a thin layer at the surface of the latex particles without adversely affecting the steric-stabilisation mechanism which prevents latex aggregation. The Dutch group have focused on coating various low T_g latexes of sub-micron dimensions.

We have recently demonstrated[2] that sterically-stabilised polystyrene latex particles in the micron size range can be coated with a thin uniform layer (< 20 nm) of polypyrrole in aqueous media to form conducting polymer latex composites. The synthesis conditions can be varied in order to control the conducting polymer loading in the final composite particle. We have extensively characterised these particles using a variety of techniques, including: scanning electron microscopy, disc centrifuge sedimentometry, API aerosizer, infrared spectroscopy and elemental microanalyses.

References

1. A. E. Wiersma, L. M. A. vd Steeg, *Europ. Pat. No.* 589,529.
2. S. F. Lascelles, S. P. Armes, submitted to *Adv. Materials.*