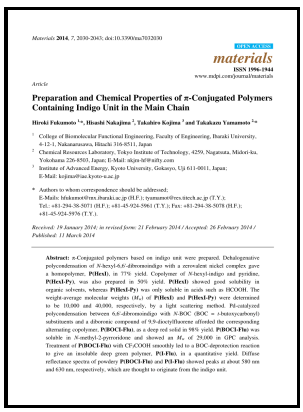
Investigation into the synthesis of conjugated bipyridinium-containing polymers

typescript - Rationalising the influence of solvent choice on the porosity of conjugated microporous polymers



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Article

Preparation and Chemical Properties of π-Conjugated Polymers Containing Indigo Unit in the Main Chain

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Abstract: π-Conjugated polymers based on indigo unit were prepared. Dehalogenative polycondensation of *N*-hexyl-6,6′-dibromoindigo with a zerovalent nickel complex gave a homopolymer, **PiHex(I)**, in 77% yield. Copolymer of *N*-hexyl-indigo and pyridine, **PiHex(I-Py)**, was also prepared in 50% yield. **PiHex(I)** showed good solubility in organic solvents, whereas **PiHex(I-Py)** was only soluble in acids such as HCOOH. The weight-average molecular weights (M_w) of **PiHex(I)** and **PiHex(I-Py)** were determined to be 10,000 and 40,000, respectively, by a light scattering method. Pd-catalyzed polycondensation between 6,6′-dibromoindigo with *N*-BOC (BOC = *t*-butoxycarbonyl) substituents and a diboronic compound of 9,9-dioctylfluorene afforded the corresponding alternating copolymer, **PiBOCI-Flu**, as a deep red solid in 98% yield. **PiBOCI-Flu** was soluble in *N*-methyl-2-pyrrolidone and showed an M_n of 29,000 in GPC analysis. Treatment of **PiBOCI-Flu** with CF$_3$COOH smoothly led to a BOC-deprotection reaction to give an insoluble deep green polymer, **PiI-Flu**, in a quantitative yield. Diffuse reflectance spectra of powdery **PiBOCI-Flu** and **PiI-Flu** showed peaks at about 580 nm and 630 nm, respectively, which are thought to originate from the indigo unit.

Description: -
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Tags: #Hyperbranched #conjugated #polymers: #an #investigation #into #the #synthesis, #properties #and #postfunctionalization #of #hyperbranched #poly(phenylene #vinylene

Polymer

P-1 is completely soluble in water and insoluble in common organic solvents such as THF and acetone.

British Library EThOS: An investigation into the synthesis of conjugated bipyridinium

The reducing agent determines the rate of nucleation and particle growth: slow reduction produces large particles, while fast reduction gives small particles.

SYNTHESIS AND PROPERTIES OF A WATER

The extension of this type of polymerisation reaction to include other diketone monomers is described along with the characterisation of the materials produced.

Hyperbranched conjugated polymers: an investigation into the synthesis, properties and postfunctionalization of hyperbranched poly(phenylene vinylene

Polymer Science: A Comprehensive Reference.

Investigation into fiber formation in N

This increasing modulus results in brittle devices with severe property degradation even with minimal elongation. Chem Soc Chem Commun 1995, 1655. The postfunctionalized polymers show increased fluorescence compared to the original iodine decorated polymers, due to the loss of the heavy atom effect inducing iodine groups.

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