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PROCESS AND PRODUCT TECHNOLOGY

废轮胎热解炭黑的表面修饰及其在平版印刷油墨中的应用

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摘要 Pyrolysis has the potential of transforming waste into valuable products. Pyrolytic carbon black (PCB) is one of the most important products resulting from the pyrolysis of used tires. One of the most significant applications of modified pyrolytic carbon black is its use as pigment for offset printing ink to obtain high added values. Inverse gas chromatography (IGC) results show that a large quantity of inorganic matters and carbonaceous deposit are removed by treating the pyrolytic carbon black with nitric acid solution. Plenty of active sites originally occupied by inorganic ash and coke are recovered. The surface energy of pyrolytic carbon black (TWPC) modified by titanate-coupling agent especially the specific interaction determined by the specific probe molecule, tolu-ene-shows the strong interaction between the TWPC and the synthetic resins. The offset printing ink performance confirms the IGC prediction. And TWPC has the great potential of applications in printing ink industry as pigment.

关键词 environmental engineering, waste tires, ink.

分类号

Surface Modification of Pyrolytic Carbon Black from Waste Tires and Its Use as Pigment for Offset Printing Ink

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Abstract

Pyrolysis has the potential of transforming waste into valuable products. Pyrolytic carbon black (PCB) is one of the most important products resulting from the pyrolysis of used tires. One of the most significant applications of modified pyrolytic carbon black is its use as pigment for offset printing ink to obtain high added values. Inverse gas chromatography (IGC) results show that a large quantity of inorganic matters and carbonaceous deposit are removed by treating the pyrolytic carbon black with nitric acid solution. Plenty of active sites originally occupied by inorganic ash and coke are recovered. The surface energy of pyrolytic carbon black (TWPC) modified by titanate-coupling agent especially the specific interaction determined by the specific probe molecule, tolu-ene-shows the strong interaction between the TWPC and the synthetic resins. The offset printing ink performance confirms the IGC prediction. And TWPC has the great potential of applications in printing ink industry as pigment.

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