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Perustakaan ACU 4457

**ANALYSIS OF PLASTICS IN THE TYRE INDUSTRY USING FOURIER
TRANSFORM INFRARED TECHNIQUES, DIFFERENTIAL SCANNING
CALORIMETRY AND A SOFTENING POINT APPARATUS**

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Perpustakaan Universiti Malaya



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ABSTRACT

The plastics in a tyre factory were investigated. The plastics were analysed by FTIR-transmission, FTIR-ATR, softening point apparatus as well as a Differential Scanning Calorimeter.

All the plastics were detected to be polyethene based with melting point range of 107 to 125°C.

It was also observed that

- The FTIR transmission spectrum can be different from the FTIR-ATR spectrum.
- The FTIR-ATR spectrum gives a higher band intensity at longer wavelengths compared to the FTIR-Transmission spectrum.
- Interference fringes can be present in the FTIR transmission spectrum.

In addition to the above, it was also found that the melting point of plastics obtained by Differential Scanning Calorimeter will not be similar to those obtained by the softening point apparatus. For duplicate determinations, the results obtained by the softening point apparatus are not consistent.

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