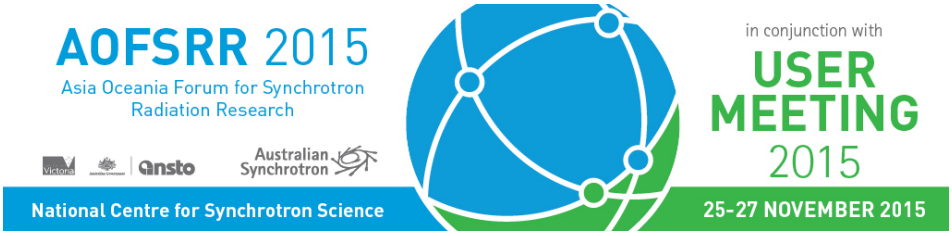

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Determination of sulfur in natural rubber for reversion process

Friday, 27 November 2015 13:30 (45)

The correlation amongst the sulfur to reversion resistances of natural rubber (NR) compound was investigated using X-ray absorption near edge spectroscopy. The NR samples were prepared which is varied accelerator DCBS and CBS ratio. It was found that the reversion of the NR compounds was not simply proportional to the increase of the sulfur to accelerator ratios no matter which accelerator was used. The increase of reversion indicating by the shorter plateau region and higher reversion rate was observed only when the sulfur to accelerator ratios were initially increased. At certain point, further increasing the sulfur to accelerator ratios in turn gave the NR compounds with higher reversion resistance. The important thing revealed here by XANES was the amount of polysulfidic linkage in the NR compounds passed through the maximum with the increasing of the sulfur to accelerator ratios. Therefore that the rubber compounds with higher polysulfidic linkages show the higher reversion are still valid. But the relation between the sulfur to accelerator ratio and the distribution of polysulfidic crosslinks was proved here that it was not simply proportional, thus causing the relation between the sulfur to accelerator ratio and reversion behavior not simply proportional too.

Keywords

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