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SUPALAK CHINDAPRASERT: FURTHER STUDY TO APPLY PHASE
TRANSFER TECHNIQUE FOR SURFACE CHARACTERISATION OF NON-
CROSSLINKED NATURAL RUBBER LATEX. THESIS ADVISOR : PRAMUAN
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The phase transfer technique, using benzyldimethylhexadecylammonium chloride as a titrant and toluene as a solvent, was used to characterise the surface of non-crosslinked natural rubber (NR) latex particles both concentrated and fresh field latices. The rubber particles were transferred and 3 phases were noted i.e. the upper organic phase containing soluble rubber, the destabilised and suspended rubber at the interphase between the organic solvent and water and the lower rubber-free serum aqueous phase. The critical transfer concentration (CTC) of fresh field latex from different clones i.e. RRIM 600, GT 1, PB 5/51, RRIC 110, KRS 25 and SONGKLA 36 were directly proportional to the nitrogen contents related to the quantity of indigeneous proteins in the latex. Both CTC and nitrogen content values of the latex samples collected in rainy season (June) were higher than in winter (January). However, the results from zeta potential and mechanical stability time (MST) measurements did not show the influence of clonal and seasonal variations. The storage time had a significant effect on the CTC values of concentrated NR latex and also the MST values. However, the data obtained from the zeta potential measurement were not complete in this study. The phase transfer technique was also used for preparation of NR solution and the viscosity average molecular weight of the rubber was $\sim 6 \times 10^5$. The non-ionic surfactant (synperonic F68) was introduced in the preparation of the deproteinised natural rubber (DPNR) latex. The extension of the phase transfer technique for study of DPNR was then attempted.