CHAPTER IV
CONCLUSIONS

From this research, the conclusions are as follows:

1. High aggregate structure carbon black and low aggregate structure carbon black as well as their relative amounts highly affect the packing characteristics of carbon black blends.
2. At the packing of pour density and tap density, the mixture of 80% high structure and 20% low structure carbon blacks (80%H CB) gives the most open structure while 100%L CB shows the most compact structure; the packing characteristics for all blends are different because of the easier movement of low aggregate structure compared to the movement of high aggregate structure.
3. The hydraulic radius(R_h), which indicates an effective pore size was investigated through sedimentation experiments and the use of I. Manas-Zloczower infiltration kinetic model.
4. Voids between aggregates play an important role in the infiltration of fluid into carbon black agglomerates.
5. For agglomerates of carbon black blends at packing densities 0.28-0.33 g/cm^3, 100%H CB gives the most open structure while 100%L CB has the most closed structure; at packing densities 0.35-0.42 g/cm^3, 80%H CB gives the most open structure while 100%L CB still has the most closed structure.
6. PDMS is more accessible into carbon black agglomerate than PB due to the freedom of motion for the PDMS chains and their polarity.