

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The present work involved studying the uses of various theories of spinodal decomposition to describe the same experimental results on the phase separation of polymer blends. Comparison of calculated data theories and experimental data was made. From this method, the best theory, that can be used to describe the experimental results can be found. The number of conclusions from the results of this work can be summarized as follows:

1. Akcasu's theory is the best theory that can be used to fit with the selected experimental results. This might be the result of $Z(q,t)$ factor.

2. Nauman's and Cahn-Hilliard's theories give satisfying agreement with experimental results at the beginning of spinodal decomposition process.

3. The percent relative average error increase with increasing temperatures. It is suggested that the four theories can be used to predict the spinodal decomposition process at the low quench dept. For deeper quench depth inside the unstable phase separation regime, the differences between the values calculated from theories and experimental values are bigger.

4. The calculated results from the theories can fit with the experimental data of the samples prepared from solvent cast method better than those from melt mixed method.

6.2 Recommendations for Further Studies

In this study, we have investigated the experimental data up to the intermediate stage of the spinodal decomposition process. The late stage of spinodal decomposition is also of interest to investigate using various theories in the future.