



CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The results from this study indicate that for the system iodine-water-carbon tetrachloride with transfer of iodine to the organic dispersed phase in a pulsed packed column, plastic packings show better results on both flooding capacities and efficiencies at various intensities of pulsation and extraction factors.

This result may be extended to pulsed perforated plate columns and it may be concluded that a choice of plate material inside a column for transfer of solute to an organic dispersed phase would be dictated by hydrophobic quality. This conclusion has been advanced by other workers already.

An important result obtained from flooding data for the pulsed packed column was that the flooding curve was not well correlated by the agitation parameter af . The amplitudes and frequencies of pulsation were found to play different influences. This detail has never been observed previously and is interesting to note. Efficiency measurements, however, obtained at throughput rates much lower than flooding rates are well correlated by the agitation parameter af .

7.2 Recommendations

Concerning the study of the influence of wetting characteristics on the efficiencies of liquid-liquid extraction columns using the pulsed packed columns, there are additional work that can be attempted in order to complete the design data which are important for the improvement and development of columns. The recommendations for further work of this type of column are as follows:

1. Study the dispersed phase hold-up and drop dynamics in the column to show variations of interfacial area affected by wetting characteristics of various types of packings.
2. Study the concentration profiles for both phases for the liquid system studied here. For concentration driving forces affect mass transfer rates.
3. Study the influence of wetting characteristics on the efficiencies of pulsed sieve-plate column by using stainless steel and plastic plates.
4. Make a theoretical analysis of efficiencies and flooding capacities of pulsed packed columns by using packings which have different wetting characteristics.