



CHAPTER V

CONCLUSIONS AND RECOMMENDATION

Conclusions

The following conclusions are drawn from this study;

- 1) The degree of arsenic removal by the adsorbents depend on operating temperature in ranges from 30 oC to 75 oC and does not depend on operating pressure in ranges from 200 psig to 600 psig.
- 2) Nickel containing adsorbents provide superior arsenic removal over all other adsorbents test.
- 3) Increasing nickel loading in ranges from 2.5% to 10% by weight is little affecting on arenic removal.
- 4) Molybdenum containing adsorbents are inferior in arenic removal than alumina support.
- 5) Increasing molybdenum loading in ranges from 2.5% to 10% by weight is significant affected on arsenic removal. The degree of arsenic removal increases when molybdenum loading is increased.
- 6) Nickel in NiMo/Al₂O₃ and MoNi/Al₂O₃ adsorbents plays a major roles in arsenic removal. The presence of nickel in these adsorbents will increase sharply in arsenic removal.
- 7) Total surface areas of nickel adsorbents decrease slightly when arsenic is deposited on.

8) Total surface areas of molybdenum adsorbents decrease slightly but decrease significant in surface area at small pores (less than 42.5 Å) when arsenic is deposited on.

Recommendations

Recommendations for future studies and reaseach are as follows;

1) A similar study should be conducted to use another types of reactors such as plug flow reactor in order to study the capacity of the adsorbent and the order of adsorption rate.

2) The types of adsorbents should be varied to study the effect of adsorbent on arsenic removal

3) The types of feed model and arsenic compound should be varied to study the effect of them on arsenic removal.

4) A same set of study should be conducted to remove arsenic in natural petroleum to comparision the efficiency of arsenic removal.