

## CHAPTER V

### CONCLUSION

From a variation of several parameters in dealumination of H-MOR (Si/Al = 11) by acid leaching, dealuminated samples with required Si/Al ratios in catalyst can be prepared precisely from using a relation plotted in Scheme 4.1. The curvature at low Si/Al ratio was real and tested by preparing the H-MOR sample with the Si/Al of 20 using extrapolation on the curve and the analysis result shows that the Si/Al ratio in product is 19.

The catalysts with various Si/Al ratios are all active with conversion of 100% for degradation of polypropylene and polyethylene at 450°C. The %conversion is not affected by Si/Al ratio but strongly affected by temperature. With increasing temperature, the value of conversion increases. However, at the temperature above 450°C the conversion is not affected by temperature. At or above 450°C, propylene is obtained at a highest composition in gaseous products obtained from both polypropylene and polyethylene degradation. In volatile liquid fraction, C<sub>9</sub>+ is obtained at the high selectivity. The large pore system of mordenite plays an important role on product selectivity. Both Brønsted acid and Lewis acid sites have strong effect on the activity of the catalyst.

**Suggestions :** Liquid product compositions shall be analyzed using GC-MS.