

## CHAPTER V

### CONCLUSION

#### 5.1 Conclusion

In this research, lubricating oil was developed for fluid dynamic bearing (FDB) that can be used in 2.5 inch HDD. The characteristic of base oils that could effect the potential usage of lubricant in fluid dynamic bearing for 2.5 inch HDD were studied in order to find the suitable base oils. Then, a preparation of base oil samples and properties assessment were performed. Finally, finished lubricants were prepared and their properties were assessed.

The results indicated that the suitable base oil was a mixture of DOS and DOA base oil at 1 : 1 ratio. Moreover, the suitable percentage of additives are 2% antioxidant, 1% antiwear, 0.05% metal deactivator. The finished lubricant has kinematic viscosity at 9.67 mm<sup>2</sup>/s which slightly higher than current commercial lubricant. The finished lubricant which prepared from this research has lower weight loss and longer service life than current commercial lubricant. Thus the finished lubricant according to this thesis will be a very good candidate of lubricant to be used in fluid dynamic bearing for 2.5 inch HDD. It is the first report of fluid dynamic bearing lubricant prepared from DOS and DOA. Moreover, such a blend between DOS and DOA would provide lubricant base oils suitable for other applications cover the wide range of viscosity.

#### 5.2 Suggestion for future work

It is suggested that a finished lubricant may be applied for other motion product such as pivot or fan motor. For further work, conductive additive may be added into this finished lubricant to increase conductive performance and protect electric charge problem.