Chapter 7

Future work

1. In the five additives, no additive, 0.5 wt% of MgO, 1.5, 3.0, 7.5 wt% of ZrO_2, no additive composition showed easy grain growth and 7.5 wt% of ZrO_2 composition had rather lower thermal conductivity. However, there are no clear difference between 0.5 wt% of MgO, 1.5 wt% of ZrO_2 and 3.0 wt% of ZrO_2. Experiment to make clear the difference should be performed.
2. There are 2-3% differences of the relative density in the samples of a same composition and condition even except mistakes of measurement techniques. It is important to know the cause of deviation. And it is essential to develop technology getting almost same density specimens, which are in 1% of the relative density.
3. This research did not measure the mechanical strength of specimens made of AKP-30. The strength should be measured by the next person who continuous does this research.
4. In this experiment could not compare the strength between my specimen and AISIN substrate. Which hope that the next person who will perform the experiment for AISIN contract should do such experiment.
5. The mechanical strength was relatively higher than usual alumina ceramics. The diameter of radius tip of the equipment (Appendix 4) may affect the absolute value of the mechanical strength. Therefore, the relationship between the bending strength and the diameter of radius tip should be confirmed experimentally.
6. This research could not observe the fracture origin of broken specimens because of the brightness of white colour of specimen. However, a younger person will challenge and succeed to observe fracture origin.