

Chapter 5

Conclusion

1. Thermal conductivity of AKP-30 is in the range of 30 – 37.4 W/m.K. Pure AKP-30 specimen sintered at 1550 °C shows the highest thermal conductivity, while the MgO doped specimen sintered at 1500 °C shows very low value that may come from the fact that the densification was not complete.

2. Mechanical strength of AKP-30, sintered at 1500 – 1650 °C attains over 400 MPa in most compositions. 3% of ZrO₂ doped composition shows the highest mechanical strength at every sintering temperature. The pure AKP-30 sintered at 1500 °C shows very high mechanical strength, which is related to its small average grain size and its relative density of 96%.

3. Pure AKP-30 is selected for fabrication of thin tape. Mechanical strength of pure AKP-30 sintered tape shows the value over 600 MPa with both types of binder. However the strength of Miyazaki binder specimens are a little higher.

Notice

The technologies reported here are all transferred to a Japanese company, OTAKECERAM. OTAKE will develop the thin tape and supply it to AISIN.

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