

CHAPTER V

CONCLUSIONS

Spirosilicates used for the sol-gel method can function via the reactive metal aloxide group. They are chemically produced at room temperature or slightly elevated temperature. At pH near 2, the IEP of silica particle, the products give high ceramic yields and high surface area, which is required in ceramic precursor processing. The low density property of materials was reported to be an important factor of the sol-gel method. The other factors that influence on the structure of spirosilicate are temperature and time during aging time.

In addition, aminospirosilicate can serve as the starting material for study of the sol-gel transition. Because of the high stability and the steric hindrance of the extent of substitution on the structure, one needs a higher concentration and higher temperature. The product with high ceramic yield and less shrinkage can be employed to use for engineering industry applications.