

Thermal and Electrical Properties of P_2O_5 -CaO- Na_2O Glass Containing $Ba_{0.6}Sr_{0.4}TiO_3$

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Five different compositions of the system P_2O_5 -CaO- Na_2O containing 0, 10, 20, 30 and 40 mol% of $Ba_{0.6}Sr_{0.4}TiO_3$ were prepared by the melt quenching method. The effects of composition on their thermal properties and dielectric properties were evaluated and discussed. The glasses were evaluated for glass transition temperature (T_g) and dielectric constant ϵ . The electrical and the thermal properties were also compared with theoretical data. T_g of the glasses varied between 450 and 530°C. The dielectric constant ranges from 6 to 9 and a dielectric loss of 0.0012 at 4.8 GHz, which provide an attractive feature for microwave applications.

Summary

Primary author: Ms INTAWIN, Prathana (Department of Physics and Materials Science, Faculty of Science, Chiang Mai University, Chiang Mai, THAILAND 50200)

Co-authors: Dr PENGPAT, Kamonpan (Department of Physics and Materials Science, Faculty of Science, Chiang Mai University, Chiang Mai, THAILAND 50200); Dr LEENAKUL, Wilaiwan (Faculty of Science, Rajamangala University of Technology Phra Nakhon, Bangkok, THAILAND 10300)

Presenter: Ms INTAWIN, Prathana (Department of Physics and Materials Science, Faculty of Science, Chiang Mai University, Chiang Mai, THAILAND 50200)

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