

# PREPARATION, THERMAL AND DIELECTRIC PROPERTIES OF NEW PHASES IN THE SYSTEM $\text{CaTiO}_3 - \text{KMgF}_3$

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The scientific research increase on the perovskite type titanate compounds since the discovery of ferroelectricity in  $\text{BaTiO}_3$  is spectacular. Nowadays, the perovskite ceramics are an extremely important class of materials in the design of high technology devices for several electronic components: capacitors, sensors, resonators, memories...

Calcium titanate  $\text{CaTiO}_3$  belongs to the perovskites group with an orthorhombic symmetry at room temperature and undergoes a sequence of phase transitions:  $\text{Pbnm} - \text{I4/mcm} - \text{Pm}\bar{3}\text{m}$ . In the present work, first we prepare new oxifluorides in the chemical system  $\text{CaTiO}_3 - \text{KMgF}_3$  then, we study the influence of  $\text{KMgF}_3$  on the crystallographic and phase transitions temperatures of  $\text{CaTiO}_3$ .

A new solid solution  $\text{Ca}_{1-x}\text{K}_x(\text{Ti}_{1-x}\text{Mg}_x)\text{O}_{3-3x}\text{F}_{3x}$  is obtained at low temperature from  $\text{CaTiO}_3$  and  $\text{KMgF}_3$ . X-ray diffraction analysis are carried out on these oxifluorides at room temperature and the cell parameters are determined. The phase transitions are investigated by dielectric measurements and differential scanning calorimetry from room temperature up to 600 °C.