## Re-examination of Phase Transitions in KNbO<sub>3</sub>

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As it is known, the physical properties of  $KNbO_3$  are similar to the properties of  $BaTiO_3$ . Though the nano-size effects in  $BaTiO_3$  are researched rather well, such studies of  $KNbO_3$  have never been held before.

In this report the results of structural studies of phase transitions in KNbO<sub>3</sub> powder specimens are presented. For preparation of KNbO<sub>3</sub> samples with different sizes of ideal crystal structure (crystallites or blocks) different synthesis conditions is used. The study of KNbO<sub>3</sub> phase transitions using X-ray diffractometer DRON-3M (CuK<sub> $\alpha$ </sub> radiation) and special temperature cell at  $20 \le T \le 960^{\circ}$ C is made.

It is found that the decrease of coherent scattering areas below critical size (50 nm) lead to reduce of phase transition temperatures. It is established that there are strong changes of atomic positions and thermal parameters at these temperatures.

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