

**CALORIMETRIC AND ELECTROPHYSICAL STUDIES
OF LANTHANUM–POTASSIUM CUPRATE–VANADATE–MANGANITE**

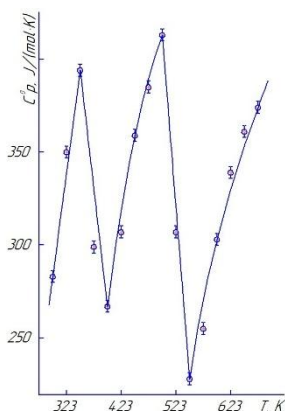
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Perovskite manganites are of interest due to their enormous magnetoresistance, giant magnetostriction, and their potential for creating new functional materials.

The calorimetric study of $\text{LaK}_2\text{CuVMnO}_{7.5}$ was conducted in the range of 298.15–673 K using the IT-C-400 calorimeter.

The $C_p^0 \sim f(T)$ curve shows λ -shaped peaks at 323 and 473 K (see Figure), which are characteristic of second-order phase transitions.



Temperature dependence of heat capacity $\text{LaK}_2\text{CuVMnO}_{7.5}$

Taking into account the temperatures of phase transitions, the equations describing the dependence $C_p^0 \sim f(T)$ are derived. Based on the experimental dependence of the heat capacity and the calculated value of $S^0(298,15)$, the thermodynamic functions $C_p^0(T)$, $S^0(T)$, $H^0(T) - H^0(298,15)$ and $\Phi^{xx}(T)$ are calculated.

The electrophysical characteristics of $\text{LaK}_2\text{CuVMnO}_{7.5}$ were studied using the LCR 781 setup in the range of 293–483 K at frequencies of 1, 5, and 10 kHz. At a frequency of 1 kHz, there is a sharp increase in capacitance and dielectric constant with increasing temperature ($\epsilon \approx 7 \times 10^8$ at 483 K), accompanied by a decrease in resistance from $\sim 4 \times 10^5$ to $< 7.6 \times 10^2$ Ohm.

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