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## Influence of the structure of vanadate-phosphate glasses containing alkali ions on their polaronic conductivity

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### Keywords

vanadate-phosphate glasses, mixed conductivity, ion-polaron interaction

### Abstract

Transition metal oxide glasses containing alkali show strong anomalies in conductivity of several orders of magnitude at certain amount of alkali ions. There is no general consensus on the origin of this specific shape of conductivity. The aim of the present work is to give some clue on mechanisms of conductivity anomalies in vanadate-phosphate glasses containing alkali ions. Electron paramagnetic resonance (EPR) and nuclear magnetic resonance (NMR) vanadium spectra were measured and compared in glasses of the  $50V_2O_5-(50-x)P_2O_5-xA_2O$  ( $A = Li, Na, K, Rb$ ) system. A possible change of local environment of  $V^{+5}$  ions from squared pyramid to tetragonal was suggested to cause the anomalies of conductivity.



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