

## Charge exchange processes in $K^+H_2$ collisions at the ion energy range 1–10 keV

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Differential and total cross sections for charge exchange processes in  $K^+H_2$  collisions were measured in the ion energy range 1–10keV. The absolute value of charge exchange total cross sections(fig.1) were measured by a refined version of the capacitor method. For the measurements of the charge-exchange differential cross section (fig.2) the charge component of scattered primary particles is separated by the electric field and neutral particles formed by electron-capture collisions are registered by the secondary electron multiplier. The experimental results for  $K^+ + H_2$  pair are interpreted on a basis of quasimolecular representation in framework of quasidiatomic approximation by using the diagrams of molecular orbitals (MO) of colliding particle system. An important point in this connection is that it is necessary to take into account the orientation of molecule axis relative to the direction of the ion beam. This is achieved by using correlation diagrams for two different particular the  $C_{2v}$ (isosceles triangle) and  $C_{\infty v}$  (linear conformation) symmetries of the triatomic molecule. It is shown that in this collision electron is mainly captured in ground state of potassium- $K(4s)$ .

