sponding to the erroneous values of α_A so obtained, nevertheless gives correct apparent activation energy values.

Presence of systematic errors, which were regarded in the past as contradictory to the physical meaning of the equation constants, may be helpful in interpreting experimental data.

Adiabatic Compression As a Method to Study Chemical Reactions Under Non-Stationary Conditions

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The possibility to apply adiabatic compression of gases in studying chemical reactions at non-isothermal conditions was investigated for temperature changes up to 10^7 degrees per second.

It was demonstrated that with the equipment used it is possible to achieve adiabatic compression and expansion of gases and, at the same time, to vary processing conditions.

Taking into account the effect due to the adiabatic conditions, the authors present equations to express functional correlations between time and pressure, temperature, and other parameters of compression processes.

Determination of Electron Work Function in Solids By a Vibrating Condenser Method

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A metallic cell was built and successfully employed to measure the contact potential differences (CPD) by a vibrating condenser method. The cell makes possible to carry out the studies at a pressure of 10^{-6} mm Hg. The metallic cell completely excludes the influence of a static field, which is impossible with the cell made of glass.

The CPD measurements of samples of nickelous oxide containing various amounts of lithium oxide were made in vacuum. For small additions of lithium oxide (0.25 to 0.82 atom %) to the nickelous oxide, the electron work function of the nickelous oxide increases with increasing concentration of the added oxide; on the other hand, for samples containing large amounts of lithium oxide (3 to 8 atom %), the electron work function approximates that of pure nickelous oxide.

Thus, for nickelous oxide the electron work function value changes with a change in the concentration of added lithium oxide, and passes through the maximum at a specified low concentration of the added oxide.