Russian Chemical Reviews

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Review articles by scientists at the Nesmeyanov Institute of Organoelemental Compounds of the USSR Academy of Sciences (awarded the Order of Lenin), founded thirty years ago in 1954 from a number of branches of the Zelinskii Institute of Organic Chemistry of the USSR Academy of Sciences on the initiative of the outstanding Soviet chemist Academician A.N.Nesmeyanov, are collected in this issue of the Journal. During the past years, this Institute, which is the first one in the world to deal with the chemistry of organoelemental compounds, grew into a major scientific research establishment and acquired great authority in world science. This authority is due to the fundamental studies by Academicians A.N.Nesmeyanov, K.A.Andrianov, M.I.Kabachnik, I.L.Knunyants, V.V.Korshak, I.V.Obreimov, O.A.Reutov, and A.V.Fokin, as well as the Corresponding Members of the USSR Academy of Sciences M.E.Vol'pin, D.N.Kursanov, and R.Kh.Freidlina.

A.N.Nesmeyanov discovered the phenomenon of metallotropism, investigated the properties of sandwich compounds, and devised new methods for the synthesis of the σ- and π-complexes of transition metals—organometallic chelates. Important discoveries such as those of the rearrangement of radicals in solution with 1,2-migration of chlorine and the fixation of molecular nitrogen by transition metal complexes under mild conditions have been made in the Institute. A new allotropic modification of carbon, namely carbyne, has been discovered, and a new synthetic method, ionic hydrogenation of unsaturated compounds, has been proposed.

The modern chemistry of organic derivatives of phosphorus, fluorine, and silicon, the synthetic chemistry of polymers, and many other branches of chemical science have been developed.

In view of its major services to chemical sciences and in the training of scientific cadres, the Nesmeyanov Institute of Organoelemental Compounds of the USSR Academy of Sciences was awarded the Order of Lenin in 1967.