

## ABSTRACT

Report on the practice: 38 pages, 7 pictures, 6 tables, formulas 5, 39 references.

Purpose - to examine the conditions of crystal growth type Ib diamond in terms of thermodynamic stability by crystallization of a molten solution.

It uses high-pressure apparatus CS-560, a temperature gradient, method for growing single crystals of diamond type Ib. The influence of temperature gradient on the growth of single crystals of diamond was investigated by changing heat AHP. The resulting diamond crystals studied by IR spectroscopy.

Object of study - grown single crystal diamond type Ib under conditions of thermodynamic stability using solvent Fe - Ni.

Actuality - due to the use of structural necessity - of perfect single crystals of diamond in science and technology in particular, and its application in modern electronics.

The novelty of the work - is that it obtained crystals of diamond type Ib solvent based Fe - Ni, in shestypuanonnomu High pressure.

SINGLE DIAMOND, THERMODYNAMIC STABILITY, TYPE IB, METAL SOLVENTS Fe - Ni