

## ABSTRACT

Report on Research Practice: 38 pages, 11 figures, 5 tables, 73 references.

Object – single crystals grown via the temperature gradient used six punch high pressure equipment by Fe-Co-Zr (Ti) solvent alloys.

Objective: get the conditions of growing type IIa diamond single crystals under thermodynamic stability using solution-melt crystallization.

It was applied temperature gradient method for growing diamond single crystals using high pressure equipment CS-560. For research obtained crystals were used infrared spectroscopy.

The novelty of the work is to obtain diamond single crystals by the temperature gradient by Fe-Co-Zr (Ti) solvent alloys using via six punch high pressure equipment.

Relevance of the topic due to the increasing use of structurally perfect single crystals diamond grown at high pressures (5.5 - 6.5 GPa) and temperatures (1350 - 1600° C) in science and technology, including their using in modern electronics.

SINGLE CRYSTAL DIAMOND, THERMODYNAMIC STABILITY, TYPE IIA,  
Fe-Co SOLVENT ALLOYS