

ABSTRACT

Master's graduate work consists of 96 pages, 27 figures, 17 tables, 6 appendices, 37 sources.

THE MATHEMATICAL MODEL, COMPUTER-INTEGRATED TECHNOLOGIES, THERMODYNAMIC INSTABILITY, OXIDATION OF CHROMIUM, MATHEMATICAL MODELLING

Relevance of a subject. The efficiency of the end result - their durability depends on a right choice of structure of protective coatings for details of motor transportation and other equipment at the minimum expenses. It is known that chrome sharply increases corrosion firmness of alloys of iron if its contents exceed 11.7%. Therefore use of new technologies of formation of wearproof coverings, on the basis of chrome, needs perfect studying and a research.

Purpose and task of works. Development computer - the integrovany procedure for studying of processes of interaction of active molecular gases with the surface of metal metals (chrome) of materials that will allow to install mechanisms of formation of functional properties, in particular to heat resistance in extreme service conditions at high temperatures.

Object of researches. The computer integrated technologi of modeling of processes, oxidation metals (chrome) in the conditions of thermodynamic instability of its oxides.

Subject of researches. Development of the procedure of the computer integrated research of thermokinetics of systems metal - gas (on the example of chrome), in extreme conditions of high temperatures.

Methods of researches. At a research of nonequilibrium processes of interaction of active molecular gases with the surface of metal materials methods of a research empirical to level (observation, the description, comparison, measurement, an experiment and so on), theoretical to the level (a hypothetical method, formalization, abstraction) and also meta-teoretichnogo level (the system analysis) were applied.