ABSTRACT

Master’s graduate work consists of 114 pages, 36 figures, 21 tables, 4 appendices, 26 sources.

The relevance of the dissertation. The processes of interaction of metals with molecular gases in our time creates an important practical interest in connection with the problem of creating new heat-resistant materials that would be designed to work in extreme conditions. Computer simulation of such unsteady processes allows you to study the behavior of the gas-metal system without the additional need for an experiment, and this significantly reduces the cost of the study, and also makes the research process safer for scientists.

Purpose and task of work. The development of a computer-integrated procedure will allow the study of the combustion of porous nickel in an air atmosphere.

Object of research. Computer-integrated technology for modeling the unsteady process of combustion of porous nickel.

Subject of research. Development of a computer-integrated procedure for studying the thermokinetic properties of nickel in the process of porous combustion never in an air atmosphere.

Research Methods. The empirical level (observation, description, comparison, measurement, experiment, etc.), the theoretical level (hypothetical method) and the meta-theoretical level (system analysis).

Testing the results of the dissertation. The main results of the work were reported at the VII International Conference "Space Technologies: Present and Future" (Dnipro, 2019), 7 International Scientific-Practical Conference "Modeling and simulation for chemistry, technologies and sustainable development systems - MSCT-2019" (Kiyv, 2019).

Publications Based on the materials of the master's thesis, 2 abstracts were published in collections of materials of international conferences.

COMPUTER SIMULATION, OXIDATION OF NICKEL, EULER METHOD, EXPERIMENTAL STUDIES, COMBUSTION OF NICKEL, POROUS NICKEL.