

ABSTRACT

The report consists of an introduction, 3 parts, conclusions and recommendations, total 97 pages, 45 illustrations, 5 tables, 66 literary sources.

Research object – control system of die-casting machines (DCM).

Purpose - improving control system of die-casting process, which is based on fuzzy logic models with automatic selection of the structure of the mathematical model and its self-tuning parameters for continuous operation control.

Research Methods - Mathematical methods for constructing models (deterministic, probabilistic and heuristic) methods of fuzzy logic, choice of structure mathematical model and adjust its parameters for continuous operation in the process, simulation, synthesis methods of management.

The results - developed models and algorithms of die-casting process control, made the choice of algorithm fuzzy logic circuit for thermostatic temperature working fluid synthesized fuzzy controller, simulation conducted among Simulink.

Recommendations on the use of work - check the adequacy of the developed control systems, models and algorithms for die-casting machines working. Transfer control algorithms DC machines one of the industrial engineering. Further research will spend towards algorithmic tasks and system implementation on standard controllers.

Areas of application - Foundry.

Keywords: die-casting, management, models, algorithms, fuzzy logic, closed system.