

ABSTRACT

COMPUTER MODELLING, AUTOMATION, AUTOMATION SCHEME, AMMONIA SYNTHESIS, MATERIAL BALANCE, C#, CHEMCAD, AXIAL-RADIAL TYPE REACTOR, AXIAL ZONE, RADIAL ZONE.

Explanatory note has 86 p., 18 fig., 20 tables, 3 appendixes, 9 sources.

The project of computer modelling and automation of axial-radial ammonia synthesis reactor has been developed.

The project presents technological scheme of ammonia production. Principals of axial-radial unit functioning are considered using technological scheme.

The aims of this project were calculation of ammonia synthesis process in axial-radial type reactor using specifically developed program module and development of automation system.

Computer calculation of the material balance is conducted using ChemCAD7 simulator.

Program module for calculation of parameters of ammonia synthesis in axial-radial reactor has been developed in C# programming environment.

Automation scheme for this process has been developed. Devices needed for control and regulation have been chosen. Automation scheme included 6 regulation, 6 control, 1 alarm and control and 1 alarm contours.

Calculation of technical-economical indicators has been conducted for evaluation of economical effect of automation.

Safety measures, and measures for comfort working conditions for workers have been considered,