

ABSTRACT

Master's thesis: 92 p., 16 pic., 1 appendix, 77 sources.

Topicality. The problem of rapid measurement of vital parameters relevant rights in the field of medicine. Possibility of life indicators quickly help to save human life.

The majority of the known methods of measuring blood gases based on invasive technology using bulky laboratory equipment, which limits mobility and speed surveys, especially in critical situations, such as fire suppression.

Lack of specialized tools for ongoing monitoring efficiency and effectiveness of therapeutic and remedial measures in saving people from intoxication by carbon monoxide, which would on one circuit and algorithmically-software based, oriented to non-invasively monitoring the removal (elimination) of carbon monoxide from the blood during and after its impact on the human body with simultaneous recording indicators of external respiration, cardiac activity, blood flow rate, temperature and other indicators that are important for the diagnosis of the human condition, determined the direction of the project ..

In Ukraine there is no established domestic production of similar devices. while research and development in this area are conducted using in most one-parameter monitoring performance.

The presence in Ukraine's own production tools for the staff of emergency medical care, improve the efficiency of primary diagnostics of affected people in the areas of fire, explosions, pollution emissions and providing them with the necessary treatment and save lives, create new prospects for the production of competitive products and importnozaminnoyi.

Relationship with academic programs, plans, themes. Master's thesis executed according to plan department managed process optimization Institute of Cybernetics of VM Glushkov NAS of Ukraine under the scientific research topic "Models and technologies of intelligent computing" (Code 15KF015-01)

Objective - to create a system status monitor dynamic objects.

To achieve the goal must perform the following tasks:

- perform a review of existing methods and algorithms for measuring vital parameters;
- perform a comparative analysis of the methods used;
- develop logical component architecture and software of the device and the procedure for its implementation;
- develop software for the device that will measure vital parameters;
- perform an analysis of the results.

Object of study - information technology and algorithmic and computational tools for monitoring and mapping processes dynamics in biological objects

Subject of research - designed algorithms, software modules, Math descriptions, computational algorithms for control and display of the dynamics of

using microprocessor technology and the display on the example of the operation

Portable devices for monitoring indicators of people intoksykovanyh carbon monoxide.

Publications:

"Informatics and Computer Science" ICT-2017 "- Monitoring and forecasting of dynamic objects.

«XVII International Young Scientists' Conference on Applied Physics!» - System of monitoring and prediction of state of dynamic objects.

Scientific novelty - created algorithmic tools for monitoring and displaying the measured and processed information about dynamic processes in biological systems using the newly created device to microcontroller based.

DYNAMIC OBJECTS, MONITORING INDICATORS OF THE BODY, ALGORITHMS, PROGRAMS, MICROPROCESSORS, DISPLAY CONTROL.

