

Method for organizing wireless computer network in chemical system

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Abstract

Method for organizing wireless computer network in chemical system. This invention relates to physical chemistry and computer technology. The nodes of this network are computers with connected chemical feed systems set up to feed substances into the chemical system and online chemical analyzers set up to conduct the chemical analysis of the substance located in the chemical system and register the results of chemical analysis of the substance located in the chemical system. The invention is method for organizing wireless computer network in chemical system, comprising the fact that the transmission of electronic messages from one node to another node of this network is produced through communication channel of this wireless network, created in the chemical system which is organized by connecting a source computer to the chemical feed system, feeding substances into the chemical system by means of the operation of the chemical feed system in accordance with the finite sequence of settings modes of chemical feed system representing electronic message transmitted from the source computer and which is received from the source computer, and by connecting to the receiving computer an online chemical analyzer by which the chemical analysis of the substance located in the chemical system is conducted and the results of chemical analysis of the substance located in the chemical system are registered, and through which, on the receiving computer, the results of registration of the results of chemical analysis of the substance located in the chemical system are received, and the electronic message is restored from the results of registration of the results of chemical analysis of the substance located in the chemical system. In addition, each node of this wireless computer network confer capabilities to receive electronic messages through the connected online chemical analyzer from another node of this wireless network, and transmit electronic messages through the connected chemical feed system to another node of this wireless computer network through communication channels of this wireless computer network, in chemical system. The technical result of this invention is that the radio systems are not used in each wireless communication channel of this wireless computer network in the chemical system.

This article is identical to the patent application "Method for organizing wireless computer network in chemical system" with number: 2015113357, which was published in Russian and filed at Russian Patent Office: Federal Institute For Intellectual Property, Federal Service For Intellectual Property (Rospatent), Russian Federation (See: [1]).

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Description of the invention:

Title of the invention.

Method for organizing wireless computer network in chemical system.

Technical field of the invention.

This invention relates to physical chemistry and computer technology, and can be used for the establishment and operation of a wireless computer network in chemical system.

Background of the invention.

There is a well known way of organizing wireless computer Wi-Fi network. The nodes of this network are computers with connected radio transmitters and radio receivers. The transmission of electronic messages from one node to another node of this wireless network is produced via wireless transmission link designed for sending electronic messages from the source computer to the receiving computer. Each wireless communication channel of this network is organized in such a way that a source computer is connected to the radio transmitter, and the receiving computer is connected to the radio receiver, and the radio receiver is tuned with the help of special programs on the signal reception to be sent in the form of radio waves, and subject to the radiation by the transmitter connected to a source computer. Then, with the help of special programs the electronic message is transmitted from the source computer via a radio transmitter transmitting via a signal representing the electronic message, and transmitted in the form of radio waves. On the receiving computer, the recipient receives the transmitted signal through radio receiver, then by means of special programs, from the received signal an electronic message is obtained.

Summary of the invention.

The invention is a new way of organizing wireless computer network in a chemical system. The nodes of this network are computers with connected chemical feed systems set up to feed substances into the chemical system and online chemical analyzers set up to conduct the chemical analysis of the substance located in the chemical system and register the results of chemical analysis of the substance located in the chemical system. Each chemical feed system is set up to feed certain substances in defined quantities and with defined state parameters of these substances, into the chemical system, through the implementation of its work in accordance with the set of parameters of its operating modes. Each computer confers the ability to control the operations of the connected chemical feed system via the transmission of parameters of its operating modes to this chemical feed system. Each online chemical analyzer is set up to conduct the chemical analysis of the substance located in the chemical

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system and register the results of chemical analysis of the substance located in the chemical system, and transfer the results of chemical analysis of the substance located in the chemical system to the connected computer. The transmission of electronic messages from one node to another node of this wireless computer network in chemical system is produced over the wireless communication channels, designed for the transmission of electronic messages from the source computer to the receiving computer.

Each wireless communication channel of this computer network is organized in such a way that a chemical feed system is connected to the source computer, and the chemical feed system is set up to receive mode parameters of its work from the source computer and implement the work of the chemical feed system in accordance with the received parameters of its modes of operation. The online chemical analyzer is connected to the receiving computer, and the online chemical analyzer is set up for the registration of the results of chemical analysis of the substance located in the chemical system, and transfer the results of chemical analysis of the substance located in the chemical system to the connected computer.

At first, an electronic message, which is transmitted, is encoded with the help of special programs in the form of a finite sequence of symbols, using a code satisfying the unique decoding condition. The obtained sequence of symbols is encoded with the help of special programs in the form of a finite sequence of chemical feed system operating modes using a code satisfying the unique decoding condition. Then, the finite sequence of chemical feed system operating modes is transmitted from the source computer to the chemical feed system connected to the source computer. Then, the substances are fed into the chemical system through the implementation of work of chemical feed system in accordance with the finite sequence of the chemical feed system operating modes.

To obtain an electronic message transmitted, an online chemical analyzer is connected to the receiving computer. This online chemical analyzer is designed and set up to conduct the chemical analysis of the substance located in the chemical system and register the results of chemical analysis of the substance located in the chemical system.

Then, the online chemical analyzer connected to the receiving computer, is set up for the implementation of the chemical analysis of the substance located in the chemical system and registration of the results of chemical analysis of the substance located in the chemical system, and the implementation of the chemical analysis of the substance located in the chemical system and registration of the results of chemical analysis of the substance located in the chemical system are carried out. Then the receiving computer with the help of special programs is set up to the mode of acquisition, through the online chemical analyzer, the results of registration of the results of chemical analysis of the substance located in the chemical system. On the receiving computer, the results of registration of the results of chemical analysis of the substance located in the chemical system are received. From the results of registration of the results of chemical analysis of the substance located in the chemical system, with the help of special programs, the finite sequence of chemical feed system operating modes is obtained. The obtained finite sequence of chemical feed system operating modes is decoded to obtain a finite sequence of symbols. Then the resulting finite sequence of symbols is decoded. As a result of this decoding, the transmitted electronic message is obtained.

The essential condition for the organization of this wireless computer network in chemical system is that each node of this wireless network confer capabilities to receive electronic messages through the connected online chemical analyzer from another node of this wireless network, and transmit electronic messages through the connected chemical feed system to another node of this wireless computer network through communication channels of this wireless computer network in chemical system.

The technical result of this invention, which is the achievement of the claimed invention, is that the radio systems are not used in each wireless communication channel of this wireless computer network in the chemical system.

This technical result is ensured by the fact that the chemical feed system connected to a source computer is used as the transmission device in each wireless communication channel of this wireless network in chemical system intended for the transmission of electronic messages from the source computer to the receiving computer, and the online chemical analyzer connected to the receiving computer is used as a receiving device.

Embodiments.

The invention is a new way of organizing wireless computer network in a chemical system. The nodes of this network are computers with connected chemical feed systems set up to feed substances into the chemical system and online chemical analyzers set up to conduct the chemical analysis of the substance located in the chemical system and register the results of chemical analysis of the substance located in the chemical system.

Each chemical feed system is set up to feed certain substances in defined quantities and with defined state parameters of these substances, into the chemical system, through the implementation of its work in accordance with the set of parameters of its operating modes. Each computer confers the ability to control the operations of the connected chemical feed system via the transmission of parameters of its operating modes to this chemical feed system. Each online chemical analyzer is set up to conduct the chemical analysis of the substance located in the chemical system and register the results of chemical analysis of the substance located in the chemical system, and transfer the results of chemical analysis of the substance located in the chemical system to the connected computer.

The nitrogen-oxygen gas mixture in the gaseous phase located in the vessel with the volume fraction of nitrogen in this mixture 80%, and with the volume fraction of oxygen in this mixture 20%, may be used as an example of the chemical system.

The chemical feed system capable of feeding nitrogen and oxygen in the gaseous phase, in predetermined masses, into the chemical system may be used as an example of the chemical feed system.

The online gas analyzer capable of measuring the mass concentrations of nitrogen and oxygen may be used as an example of the online chemical analyzer.

The transmission of electronic messages from one node to another node of this wireless computer network in chemical system is produced over the wireless communication channels, designed for the transmission of electronic messages from the source computer to the receiving

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computer.

Each wireless communication channel of this computer network is organized in such a way that a chemical feed system is connected to the source computer, and the chemical feed system is set up to receive mode parameters of its work from the source computer and implement the work of the chemical feed system in accordance with the received parameters of its modes of operation. The online chemical analyzer is connected to the receiving computer, and the online chemical analyzer is set up for the registration of the results of chemical analysis of the substance located in the chemical system, and transfer the results of chemical analysis of the substance located in the chemical system to the connected computer.

Then the transmission of electronic messages from the source computer to the receiving computer in the chemical system is implemented.

At first, an electronic message, which is transmitted, is encoded with the help of special programs in the form of a finite sequence of symbols, using a code satisfying the unique decoding condition. The coding of the electronic message as a finite sequence of symbols consisting of 0 and 1, by writing it as a binary file using special software on a storage device which is connected to the source computer, can be used as an example of such a coding. The obtained sequence of symbols is encoded with the help of special programs in the form of a finite sequence of chemical feed system operating modes using a code satisfying the unique decoding condition.

As an example of such a coding may be used the following coding comprising that each number 0 is assigned the ordered pair of numbers (3, 15), whereby the chemical feed system operating mode is set up, and in which the first number 3 is the mass, in grams, of nitrogen which is fed, in the gaseous phase, into the chemical system by the chemical feed system, and the second number 15 is set equal to 15 seconds of the chemical feed system idle duration which takes place after the completion of feeding nitrogen into the chemical system, in mass, in grams, equal to the first parameter of this chemical feed system operating mode; each number 1 is assigned the ordered pair of numbers (1, 15), whereby the chemical feed system operating mode is set up, and in which the first number 1 is the mass, in grams, of oxygen which is fed, in the gaseous phase, into the chemical system by the chemical feed system, and the second number 15 is set equal to 15 seconds of the chemical feed system idle duration which takes place after the completion of feeding oxygen into the chemical system, in mass, in grams, equal to the first parameter of this chemical feed system operating mode.

Then, the obtained finite sequence of chemical feed system operating modes is transmitted from the source computer to the chemical feed system connected to the source computer. Then, nitrogen and oxygen are fed into the chemical system through the implementation of work of the chemical feed system in accordance with this finite sequence of the chemical feed system operating modes.

To obtain an electronic message transmitted, an online chemical analyzer is connected to the receiving computer. This online chemical analyzer is designed and set up to conduct the chemical analysis of the substance located in the chemical system and register the results of chemical analysis of the substance located in the chemical system.

Then, the online chemical analyzer connected to the receiving computer, is set up for the implementation of the chemical analysis of the substance located in this chemical system

and registration of the results of chemical analysis of the substance located in the chemical system, and the implementation of the chemical analysis of the substance located in the chemical system and registration of the results of chemical analysis of the substance located in the chemical system are carried out. Then the receiving computer with the help of special programs is set up to the mode of acquisition, through the online chemical analyzer, the results of registration of the results of chemical analysis of the substance located in the chemical system. On the receiving computer, the results of registration of the results of chemical analysis of the substance located in the chemical system are received. From the results of registration of the results of chemical analysis of the substance located in the chemical system, with the help of special programs, the finite sequence of chemical feed system operating modes is obtained. The obtained finite sequence of chemical feed system operating modes is decoded to obtain a finite sequence of symbols. Then the resulting finite sequence of symbols is decoded. As a result of this decoding, the transmitted electronic message is obtained.

The essential condition for the organization of this wireless computer network in chemical system is that each node of this wireless network confer capabilities to receive electronic messages through the connected online chemical analyzer from another node of this wireless network, and transmit electronic messages through the connected chemical feed system to another node of this wireless computer network through communication channels of this wireless computer network in chemical system.

Claim:

What is claimed is:

Method for organizing wireless computer network in chemical system, comprising the fact that the transmission of electronic messages from one node to another node of this network is produced through communication channel of this wireless network, created in the chemical system which is organized by connecting a source computer to the chemical feed system, feeding substances into the chemical system by means of the operation of the chemical feed system in accordance with the finite sequence of settings modes of chemical feed system representing electronic message transmitted from the source computer and which is received from the source computer, and by connecting to the receiving computer an online chemical analyzer by which the chemical analysis of the substance located in the chemical system is conducted and the results of chemical analysis of the substance located in the chemical system are registered, and through which, on the receiving computer, the results of registration of the results of chemical analysis of the substance located in the chemical system are received, and the electronic message is restored from the results of registration of the results of chemical analysis of the substance located in the chemical system, characterized in that each node of this wireless computer network confer capabilities to receive electronic messages through the connected online chemical analyzer from another node of this wireless network, and transmit electronic messages through the connected chemical feed system to another node of this wireless computer network through communication channels of this

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wireless computer network, in chemical system.

Remark.

This article is identical to the patent application "Method for organizing wireless computer network in chemical system" with number: 2015113357, which was published in Russian and filed at Russian Patent Office: Federal Institute For Intellectual Property, Federal Service For Intellectual Property (Rospatent), Russian Federation (See: [1]).

References.

[1] A.I. Bodrenko. "Method for organizing wireless computer network in chemical system". Inventor and Assignee: Andrey I. Bodrenko (RU). Application number: 2015113357. Priority date: 10.04.2015. Filed: 10.04.2015. Publication date: 27.10.2016. Bulletin 30. URL: <http://www.fips.ru/Archive4/PAT/2016FULL/2016.10.27/DOC/RUNWA/000/002/015/113/357/document.pdf> [in Russian].