

pendent directions. The first is the artistic direction, which includes the processing of photographs in the environment of two-dimensional raster or vector graphic editors to visualize the nanoworld and the presentation of artistic compositions based on it.

The second direction is a subtle technical study to create three-dimensional images based on a series of consecutive two-dimensional images of nanostructures. Where, as a result, a solid-state image of the elements that make up the nanostructures is formed in the environment of a standard graphic three-dimensional editor, with which the modeling process is carried out. Three-dimensional representation of objects expands the possibilities of materials analysis. To increase the reliability of the results, the obtained three-dimensional images are compared with information about the same nanostructures obtained by other, for example, contact methods.

### **Conclusion**

The application of computer modeling methods of nanoparticles has proven to be the most important research tool in the nanoworld. Computer models of nanoobjects are easier and more convenient to study when real experiments are difficult due to physical interference. The logic and formality of computer models allows us to identify the main factors that determine the properties of the studied nanoscale original object.

### **References**

1. Komar A.S. Processing of poultry manure for fertilization by granulation. Abstracts of the 5th International Scientific and Practical Conference "Innovative Technologies for Growing, Storage and Processing of Horticulture and Crop Production". 2019. Uman. 18–20.
2. Sklar, O.G. Mechanization of technological processes in animal husbandry: textbook. manual. Melitopol: Color Print. 2012. 720 p.
3. Boltyanskaya N. I. The dependence of the competitiveness of the pig industry from it-chnology parameters of productivity of the animals. Bulletin of Kharkov national University-University of agriculture after Petro Vasilenko. Kharkov. 2017. Vol. 18. 81–89.

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## **DIRECTIONS OF AUTOMATION OF TECHNOLOGICAL PROCESSES IN THE AGRICULTURAL COMPLEX OF UKRAINE**

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*Аннотация.* В статье обозначены направления автоматизации технологических процессов в агропромышленном комплексе Украины.

*Abstract.* The article outlines the directions of automation of technological processes in the agro-industrial complex of Ukraine.

*Ключевые слова:* агропромышленный комплекс, технологический процесс, автоматизация.

*Keywords:* agro-industrial complex, technological process, automation.

### Introduction

Significant trends in modern agricultural production are, on the one hand, the constant growth of its scale, increasing the quantity and quality of agricultural products, on the other – the progressive shortage of labor, the unpopularity of monotonous and heavy manual labor in agriculture and animal husbandry. The most important, and often the only means of resolving contradictions between them is complex mechanization and automation of production. Due to mechanization and automation, labor productivity increases sharply. Issues of integrated automation are of great economic importance, because their implementation guarantees an economic effect. In the agro-industrial complex of Ukraine the direction of partial or even full automation of technological processes with use of alternative (bioenergy) energy carriers is rather actual [1,2].

### Main part

In the agro-industrial complex of Ukraine, as recent studies show, the most favorable conditions for automation are provided for stationary processes in animal husbandry, closed soil, processing and storage of agricultural products. Recently, thanks to the development of microelectronics, automation of mobile equipment (tractors, combines, drills) has become possible [3].

The following areas of automation exist and are promising in the agro-industrial complex (Fig. 1):

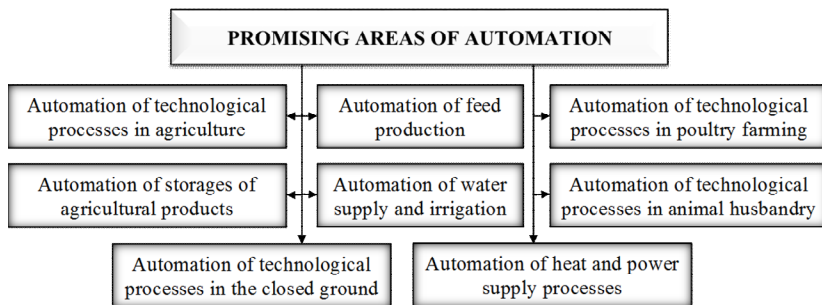


Figure 1 – Promising areas of automation in agriculture

1. Automation of technological processes in agriculture: automation of grain points, grain dryers, automation of the process of active ventilation of grain, automation of mobile processes in agriculture.

2. Automation of technological processes in the closed ground: automation of management of a microclimate in greenhouses, automatic management of

concentration of a solution of mineral fertilizers, automatic management of feeding of plants.

3. Automation of storages of agricultural products: automation of microclimate in vegetable storages, fruit storages, automation of the account, control and sorting of agricultural products in storages.

4. Automation of technological processes in poultry farming: sets of equipment for keeping industrial flocks, management and creation of optimal microclimate in poultry houses (feeding, lighting, egg collection, watering), automated technological lines for poultry slaughter.

5. Automation of technological processes in animal husbandry: automation of animal feeding, creation of a microclimate in livestock premises, automation of processes of manure removal, milking and primary milk processing.

6. Automation of feed production: automation of units for preparation of grass meal, processes of granulation and briquetting of forages, compound feed units.

7. Automation of heat supply processes: automation of boilers, electric water heaters, electric heaters, heat generators, refrigeration units.

8. Automation of water supply and irrigation: automation of water pumping units, reclamation technological processes.

Today, most assessment methods are aimed at the rational use of equipment, to reduce its number and to minimize labor costs and energy consumption in the form of fuels and lubricants and other technological materials - fertilizers, pesticides and more. It is assumed that the farm has a certain set of tractors, agricultural machinery, which allows you to choose the best option for a particular operation, in a particular technological situation, to establish energy and fuel consumption, automate modes of energy-intensive systems, technologies and heat production plants, use renewable energy sources (biomass, solar and wind energy, etc.).

It is the introduction of various types of automation that makes it possible to rationalize and reduce energy costs in the agro-industrial complex, which is a very important prerequisite for its development.

### **Conclusion**

To reduce the energy intensity of agricultural operations and energy supply of production with relatively cheap energy and fuel, it is proposed to implement the following measures: to introduce energy-saving technologies; to introduce technical means of energy supply and energy assessment of individual agricultural machines, machine-tractor units, both when performing technological operations, and separately, as technical means.

### **References**

1. Skliar A., Boltyanskyi B., Boltyanska N. Research of the cereal materials micronizer for fodder components preparation in animal husbandry. *Modern Development Paths of Agricultural Production*. Springer Nature Switzerland AG. 2019. P. 249–258.

2. Komar A. S. Development of the design of a press-granulator for the processing of bird manure. Coll. scientific-works of Intern. Research Practice Conf. «Topical issues of development of agrarian science in Ukraine». Nizhin, 2019. Pp. 84–91.

3. Komar A. S. Analysis of the design of presses for the preparation of feed pellets and fuel briquettes. TDATU Scientific Bulletin. 2018. Issue 8. Vol. 2. Pp. 44–56.

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## **ПРОБЛЕМА ВОСПИТАНИЯ В ВЫСШЕЙ ШКОЛЕ**

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*Аннотация.* В статье затрагиваются психологические особенности студенческого возраста и проблема воспитания в высшей школе.

*Abstract.* This article touches upon the psychological characteristics of student age and the problem of education in higher education.

*Ключевые слова:* высшая школа, преподаватель, студент.

*Keywords:* high school, teacher, student.

### **Введение**

Нет более спорной проблемы в педагогике и психологии высшей школы, чем проблема воспитания студентов. «Надо ли воспитывать взрослых людей?», «Стоит ли и корректно ли это делать?» - разговоры такого рода часто можно услышать в вузовских кулуарах и на официальных собраниях.

### **Основная часть**

Ответ на эти вопросы зависит от того, как понимать воспитание. Если его понимать как воздействие на личность с целью формирования нужных воспитателю, вузу, обществу качеств, то ответ может быть только отрицательным. Этот подход часто называется технократическим и трактует воспитание как проектирование и направленное формирование личности в соответствии с так или иначе понятыми общественными, национальными, классовыми, конфессиональными и другими интересами. Если как создание условий для саморазвития личности в ходе вузовского обучения, создание оптимальных условий для саморазвития личности, реализации заложенных в ней сущностных сил, максимально возможной самоактуализации человека, то ответ должен быть однозначно положительным.