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## **ANALYSIS OF DEVICES FOR CHECKING AND CLEARING OF ELECTROMAGNETIC INJECTORS**

The article analyzes the existing devices for checking and clearing electromagnetic injectors in modern cars for the purposes of possibility of their use by wide audience of motorists. The advantages and defects of some stands are shown; the necessity of the similar devices design is discussed.

**Key words:** check; clearing; way; hydraulic; ultrasonic; multifunction; device; efficiency.

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## **WORKING EFFICIENCY PARAMETERS OF MODIFIED HAMMERS OF GRAIN CRUSHERS**

The article considers the technology of creating coatings on working surfaces of grain crushers hammers for calcium and calcium rock grinding. The results of laboratory and experimental research of coatings are presented. According to the results of investigations a totally new technology of coatings creation with high toughness, abrasive wear resistance, adhesion strength, close to the strength of the hammer material is suggested. Generated coatings have a thickness of 0.5 to 1 mm.

**Key words:** hammer grain crusher; hammers; wear resistance; resource; selective laser sintering; coatings.

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### **STUDY OF INFLUENCE OF LAYER OF WELD ON THE DETAILS DEFORMATION**

The article considers the use of deformation during the process of welding for the geometry retailoring of separate details and the construction as a whole. The results of experiments of the study of deformation dependence on the welding nature and the power of the welding current by the example of the steel band are given.

**Key words:** welded join; the design; factors; deformation; amperage; the angle of the welding.

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### **THE NECESSITY OF EXERGY ANALYSIS OF ENERGY TRANSFORMATION IN AGRICULTURAL PRODUCTION**

A method of exergy analysis of energy transformation is described, including its bioconversion by organisms in agricultural production, as well as the quantitative mutually agreed definition of key variables of agroecology is considered.

**Key words:** radiation; range; exergy; saving; efficiency.

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### **TEST OF THE ELECTRICAL CONDUCTIVITY OF FERROMAGNETIC POWDER**

The test of ferromagnetic powder of brand P-10 is conducted, a nonlinear dependence of the electrical conductivity and other parameters is revealed

**Key words:** carbonyl iron; ferromagnetic powder; electrical conductivity.

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### **THE PROMISING VARIETIES OF POTATOES FOR THE CONDITIONS OF THE MIDDLE URALS**

The article provides the results of the comparative testing of potato varieties and cultivars with different degrees of ripeness in the piedmont of the Middle Western Urals. It is found out and recommended to grow varieties of Udacha, Red Scarlett, Lazurit for getting early ripeness products, to grow varieties of Sotochka, Arhideya, Lazurit, Red Scarlett, Hozyayushka, Skarb for industrial processing of potato tubers.

**Key words:** potato varieties and cultivars; productivity; persistence to diseases.

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### **ON METHODS OF ASSESSING OF STRUCTURAL INTERACTIONS IN BIOSYSTEMS**

With the help of spatial-energy parameters it is demonstrated that the molecular electronegativity and energy characteristics of functional states of biosystems are basically determined by the values of P-parameters of the first valence electron in the atom. The principles of stationary biosystem formation are similar to the conditions of wave processes flowing in the phase.

**Key words:** spatial-energy parameter; electronegativity; biosystems; stationary and pathologic states.

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### **AGROCHEMICAL INDICES OF SOILS, RATES OF FERTILIZER USAGE AND OATS GUNTER YIELD IN THE STATE CULTIVAR TESTING AREAS OF THE UDMURT REPUBLIC**

The article provides the results of correlative and regressive analysis of crop capacity of oats Gunter with the agrochemical indices of the plough-layer of soils with mineral fertilizers.

**Key words:** oats Gunter; correlative relationship; agrochemical soil indices; crop capacity; mineral fertilizers.

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**ENVIRONMENTAL PROBLEMS OF ENERGY SAVING**

The article considers the problems taking place in the realization of energy-saving measures. The approach for gathering and utilization of mercury-containing lamps is suggested.

**Key words:** energy saving; ecology; mercury; demercurization.

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**PHOTOSYNTHETIC ACTIVITY OF OATS KONKUR DEPENDING ON PRE-SOWING TREATMENT OF SEEDS**

The article presents the research results of studying the influence of pre-sowing treatment of seeds on their yield and photosynthetic activity index. The pre-sowing treatment of seeds biased for the better on leaf-area formation, photosynthetic potential and the crop capacity of oats Konkur seeds.

**Key words:** oats Konkur; yield; photosynthetic potential; net productivity of photosynthesis.

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**THE ELECTROTECHNOLOGICAL METHOD OF FLOUR QUALITY IMPROVING**

This paper proposes the environmentally friendly method of decontaminating flour from spore-forming bacteria – treatment in the electrostatic field. The constructive installation diagram is presented and its operating principle is described.

**Key words:** spore-forming bacteria; potato bacillus; electric field.

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**RESTORATION PROBLEMS OF BEARING JUNCTURES OF TURBOCHARGERS**

The article considers the operating conditions of bearing junctures of turbochargers; the rates of limiting wear of details defining the necessity of their restoration are given. The possible methods of worn parts restoration of turbochargers bearing units are described and their shortcomings are shown. A new technology of building-up of the worn surfaces with the use of perspective materials is proposed.

**Key words:** bearing matching; turbochargers; worn parts restoration of turbochargers; diesel engines; building-up of the worn surfaces.

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**SYSTEM OF PRESSURE STABILISATION OF THE SENSOR PHOTOPLETHYSMOGRAPH TO A SURFACE OF BIOLOGICAL OBJECT**

The system of pressure stabilisation of the sensor photoplethysmograph to a surface of biological object is examined. Modelling of system in the environment of Proteus has proved working capacity of the developed algorithm. The system realisation allows to lower artifacts of movement and to raise reliability of a registered signal of the photoplethysmogram. The system application is reasonable in the course of monitoring of a condition of humans and animals vascular system.

**Key words:** artifacts; modeling; the optoelectronic sensor; photoplethysmography.

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**REPAIR OF JOURNAL NECK OF STEEL AND CAST IRON DETAILS BY HIGH-SPEED ELECTRIC-ARC WELDING**

The article provides the results of experimental research influencing the layer of weld quality, primarily the defectiveness and thickness depending on speed and pitch of welding and other geometrical parameters.

**Key words:** method; welding; geometrical parameters; retailoring; detail; pitch and speed of welding; the process area.

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**METHODS OF INCREASING OF PRODUCTIVITY AND ENERGY EFFICIENCY IN LIVESTOCK HOUSES**

The prospects of application of LED-based lighting in animal husbandry are considered in the article. Positive influence of a red spectrum of lighting on health and livestock efficiency index is revealed.

**Key words:** LED-based lighting in animal husbandry; a red spectrum of lighting; livestock efficiency index.

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**DEVICE AND OPERATING PRINCIPLE OF THE CYCLONE-SEPARATOR WITH ADJUSTABLE SCREEN**

The article considers the technology of some grinders and cyclones-separators operating. The strengths and weaknesses of the preceding grinder are revealed. The self-design of the cyclone-separator construction is suggested, the defects of predecessor being eliminated.

**Key words:** hammer grinder; cyclone; cyclone-separator; resource; screen; regulation.

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**POTATO SORTER OF BOWL-DISK TYPE**



A new design of the bowl-disk device for the potato tubers assorting based on size is suggested. The article considers the overall structure, design and layout, the operating principle of the centrifugal bowl-disk sorter. The results of the primary theoretical calculation and practical tests are provided.

**Key words:** sorter; potatoes; assorting; bowl-disk device, design and operation.

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### **NEW SORTING DEVICE FOR POTATO TUBERS OF CONVEYOR TYPE**

The article describes a new device for sorting potatoes, which is effective for texture separation and creates the possibility to design a compact and light sorter for farms.

**Key words:** sorter; potatoes; assorting; texture separation; compact and light sorter; farms.

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### **THE ASSESSMENT OF TECHNICAL AND ECONOMIC EFFICIENCY OF ENERGY-SAVING TECHNOLOGY FOR FRUIT AND VEGETABLE DRYING**

This article compares in terms of technical and economic efficiency installations for drying fruits and vegetables with various ways of energy supply. The application of the combined ways of energy supply using the energy-saving technology is substantiated.

**Key words:** drying; energy consumption; technical and economic assessment; electrotechnics.

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### **ANALYSIS OF THE EXISTING CONTROL SYSTEM OF OPERATING MODES OF OVERHEAD LINES 0.4 KV AND ELECTRIC DEVICES**

The control systems of operating modes of overhead power transmission lines 0.4 kV and electric devices are considered. The article proves the necessity of developing an effective system for continuous monitoring of power quality and operating modes of overhead line and electric devices.

**Key words:** power quality, overhead line, electric devices, cable line.

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