

SCI-CONF.COM.UA

**INNOVATIONS
AND PROSPECTS
IN MODERN SCIENCE**



**PROCEEDINGS OF VII INTERNATIONAL
SCIENTIFIC AND PRACTICAL CONFERENCE
JULY 3-5, 2023**

**STOCKHOLM
2023**

INNOVATIONS AND PROSPECTS IN MODERN SCIENCE

Proceedings of VII International Scientific and Practical Conference
Stockholm, Sweden
3-5 July 2023

Stockholm, Sweden

2023

UDC 001.1

The 7th International scientific and practical conference “Innovations and prospects in modern science” (July 3-5, 2023) SSPG Publish, Stockholm, Sweden. 2023. 209 p.

ISBN 978-91-87224-02-7

The recommended citation for this publication is:

Ivanov I. Analysis of the phaunistic composition of Ukraine // Innovations and prospects in modern science. Proceedings of the 7th International scientific and practical conference. SSPG Publish. Stockholm, Sweden. 2023. Pp. 21-27. URL: <https://sci-conf.com.ua/vii-mizhnarodna-naukovo-praktichna-konferentsiya-innovations-and-prospects-in-modern-science-3-5-07-2023-stokgolm-shvetsiya-arhiv/>.

Editor

Komarytskyy M.L.

Ph.D. in Economics, Associate Professor

Collection of scientific articles published is the scientific and practical publication, which contains scientific articles of students, graduate students, Candidates and Doctors of Sciences, research workers and practitioners from Europe, Ukraine and from neighbouring countries and beyond. The articles contain the study, reflecting the processes and changes in the structure of modern science. The collection of scientific articles is for students, postgraduate students, doctoral candidates, teachers, researchers, practitioners and people interested in the trends of modern science development.

e-mail: sweden@sci-conf.com.ua

homepage: <https://sci-conf.com.ua>

©2023 Scientific Publishing Center “Sci-conf.com.ua” ®

©2023 SSPG Publish ®

©2023 Authors of the articles

TABLE OF CONTENTS

BIOLOGICAL SCIENCES

1. *Azizov Aflatun Polad* 8
POPULATION AND MOLECULAR GENETIC STUDIES ON THE
CONTAMINATION EFFECTS ON THE SOME CRUSTACEAN
SPECIES IN THE WESTERN COAST OF THE AZERBAIJAN
SECTOR OF THE CASPIAN SEA

MEDICAL SCIENCES

2. *Зелінська Г. В., Кулініченко Г. М., Устименко Г. Я., Остафійчук М. В.* 14
ПРОГНОСТИЧНІ ЦИТОМОРФОЛОГІЧНІ ХАРАКТЕРИСТИКИ
ПАПІЛЯРНИХ ТИРЕОЇДНИХ КАРЦИНОМ З РОЗВИТКОМ
РАДІОЙОДРЕЗИСТЕНТНОСТІ

PHARMACEUTICAL SCIENCES

3. *Найібайлі Т. А., Зеяналова Г. Р.* 21
ELEMENTAL COMPOSITION OF THE RAW MATERIAL OF
VICIA CORDATA L.
4. *Стремоухов О. О., Ожегова О. О.* 27
ПОРІВНЯЛЬНЕ ДОСЛІДЖЕННЯ РИНКУ БЕЗРЕЦЕПТУРНИХ
ПРЕПАРАТІВ МІЖ УКРАЇНОЮ ТА НІМЕЧЧИНОЮ

TECHNICAL SCIENCES

5. *Beglov K., Maksymova O.* 33
DEVELOPMENT AND STUDY OF AN AUTOMATIC CONTROL
SYSTEM FOR A PYROLYSIS UNIT FOR ORGANIC
SUBSTANCES OF VARIABLE COMPOSITION
6. *Chuprynka V. I., Chuprynka N. V., Naumenko B. V., Vasylenko O. L., Syrotynskyi O. A.* 40
ALGORITHM FOR FINDING ROTATION ANGLES A AND B,
RESPECTIVELY, FOR STATIONARY AND MOVING FLAT
GEOMETRIC OBJECTS WHEN CONSTRUCTING DENSE
STACKS OF THESE OBJECTS
7. *Chyhur L. Ya.* 47
DEVELOPMENT OF A COMPLEX SIMPLIFIED MODEL OF THE
OBJECT - A DRUM BOILER
8. *Chyhur I.* 51
PRINCIPLES OF ADJUSTMENT OF REGULATORS IN THE
AUTOMATIC CONTROL SYSTEM

9. *Koloskov V., Pashchenko D. V., Jinadu Abdulbaqi, Ulinfun Immanuel Osayi* 55
SIMULATION OF FUNCTIONING PROCESS OF EQUIPMENT FOR TECHNOLOGY OF UAV ELEMENTS MANUFACTURING FROM USED PACKAGING WASTES
10. *Данилюк І. В., Данканич О.* 61
МЕТОДИ МАШИННОГО НАВЧАННЯ ДЛЯ КЛАСИФІКАЦІЇ ТЕКСТІВ
11. *Добролюбова М. В., Брацлавська Л. В.* 68
СИСТЕМА ВИЯВЛЕННЯ ВИБУХОНЕБЕЗПЕЧНИХ ПРЕДМЕТІВ
- GEOGRAPHICAL SCIENCES**
12. *Столпаков А. Ю.* 75
АНАЛІЗ НАСЛІДКІВ РУЙНУВАННЯ ОСКІЛЬСЬКОГО ВОДОСХОВИЩА МЕТОДАМИ ДИСТАНЦІЙНОГО ЗОНДУВАННЯ
- PEDAGOGICAL SCIENCES**
13. *Khantadze N.* 80
ABOUT SOME STRATEGIES FOR TEACHING READING IN GRADES I-IV
14. *Гейдел А. М., Печурін Д. О.* 84
ОСОБЛИВОСТІ УПРОВАДЖЕННЯ ДИСТАНЦІЙНОГО НАВЧАННЯ В УМОВАХ ВОЄННОГО СТАНУ
15. *Гуцуляк Л. І.* 88
ТЕХНОЛОГІЯ ПРОЄКТУВАННЯ ЯК СКЛАДНИК САМОМЕНЕДЖМЕНТУ ФАХІВЦЯ ІЗ СОЦІАЛЬНОЇ РОБОТИ
16. *Діденко Н. М.* 93
КУЛЬТУРА НАУКОВОЇ МОВИ СУЧАСНОГО ФАХІВЦЯ
17. *Плющик Є. В., Кукса Т. О., Малішевська І. В.* 96
ФОРМУВАННЯ КУЛЬТУРИ ПРОВЕДЕННЯ ІНТЕРАКТИВНИХ ІГОР У ВЧИТЕЛІВ ПОЧАТКОВИХ КЛАСІВ
18. *Федорів Я. Р., Піроженко І. Д., Шугай А. Ю., Щенявська А. В.* 102
АНГЛІЙСЬКА ДЛЯ НЕЗЛАМНИХ: КОНЦЕПЦІЯ ПЛОТНОГО КУРСУ ІНОЗЕМНОЇ МОВИ ДЛЯ СТУДЕНТІВ ВИЩИХ НАВЧАЛЬНИХ ЗАКЛАДІВ УКРАЇНИ В КРИЗОВИХ УМОВАХ
- PSYCHOLOGICAL SCIENCES**
19. *Ганган Ю. С.* 109
ДОСЛІДЖЕННЯ ЗВ'ЯЗКУ СОЦІАЛЬНО-ПСИХОЛОГІЧНОЇ АДАПТАЦІЇ ТА ФАБІНГУ СЕРЕД ПІДЛІТКІВ
20. *Магда П. М.* 117
ВПЛИВ МУЗИКИ НА ПСИХІКУ ЛЮДИНИ У ОПОВІДАННІ ХУЛІО КОРТАСАРА «МЕНАДИ»

ART

21. *Обуховська Е. В.* 124
СОЦІАЛЬНІ МЕРЕЖІ ЯК ОСВІТНІ ПЛАТФОРМИ ДЛЯ
ТВОРЧИХ СПЕЦІАЛЬНОСТЕЙ В УМОВАХ ДИСТАНЦІЙНОГО
НАВЧАННЯ

PHILOLOGICAL SCIENCES

22. *Rusadze I.* 130
SOMATIC LANGUAGE IN RELATION TO COLLOCATIONS
23. *Карпенко М. Ю., Советкіна О. О.* 134
СПЕЦИФІКА ВИКОРИСТАННЯ ВЕРБАЛЬНИХ МАНІПУЛЯЦІЙ
У РОМАНТИЧНИХ ВІДНОСИНАХ ЗА ФІЛЬМОМ “SLEEPING
WITH ENEMY”

PHILOSOPHICAL SCIENCES

24. *Філатова А. О., Фіалко Н. А.* 141
ФІЛОСОФІЯ В ТУРИЗМІ ЯК ЗАСІБ ФОРМУВАННЯ
СВІТОГЛЯДУ ЛЮДИНИ

ECONOMIC SCIENCES

25. *Дубницький В. І., Мішустіна Т. С.* 144
ДІЛОВІ ЕКОСИСТЕМИ ЯК ФЕНОМЕН ЦИФРОВОЇ
ТРАНСФОРМАЦІЇ ЕКОНОМІКИ
26. *Перебейнос В. Б., Пакулин С. Л., Близнюкова Т. В.,
Феклистова І. С., Пакулина А. С.* 149
ОПТИМІЗАЦІЯ ПРОСТРАНСТВЕННОГО РАЗВИТИЯ
СЕЛЬСКИХ ТЕРРИТОРИЙ РЕГИОНА
27. *Семенча І. Є., Ковальов М. С.* 157
АНАЛІЗ СПРОМОЖНОСТІ МОБІЛІЗАЦІЇ КОШТІВ
ПІДПРИЄМСТВ У КОМЕРЦІЙНИХ БАНКАХ УКРАЇНИ В
УМОВАХ ВІЙСЬКОВОГО СТАНУ
28. *Солодковська Г. В., Олефіренко В. В.* 160
ЕВОЛЮЦІЯ ЕЛЕКТРОННОЇ КОМЕРЦІЇ

LEGAL SCIENCES

29. *Агаєва В., Федченко В.* 164
ЗАБЕЗПЕЧЕННЯ ПРАВА НА ЗАХИСТ У КРИМІНАЛЬНОМУ
ПРОЦЕСІ УКРАЇНИ
30. *Бакаєв С. Д., Федченко В. М.* 169
РОЛЬ ДОКАЗІВ У КРИМІНАЛЬНОМУ ПРОЦЕСІ УКРАЇНИ:
НОВІТНІ ТЕНДЕНЦІЇ ТА ВИКЛИКИ
31. *Бакаєв С. Д., Філіпп А. В.* 173
СУЧАСНА ХАРАКТЕРИСТИКА ТА ШЛЯХИ
ВДОСКОНАЛЕННЯ ПРИНЦИПІВ КРИМІНАЛЬНОГО
СУДОЧИНСТВА

32.	Брусакова О. В., Греченко В. А. ДЕЛІНКВЕНТНА ПОВЕДІНКА ПРАЦІВНИКІВ ПОЛІЦІЇ В УКРАЇНІ ТА ЇЇ ПРЕВЕНЦІЯ	177
33.	Воронін Д. Д., Савенко В. П. ПРОБЛЕМАТИКА КОЛАБОРАЦІОНІЗМУ В УМОВАХ ВІЙНИ З РФ	183
34.	Гринько Д. Ю. КРИМІНАЛЬНО-ПРАВОВА ХАРАКТЕРИСТИКА ПРАВОПОРУШЕНЬ, ПОВ'ЯЗАНИХ З КАТУВАННЯМИ, ЯКІ ВЧИНЕНІ НА ОКУПОВАНИХ ТЕРИТОРІЯХ УКРАЇНИ	187
35.	Іваненко А., Федченко В. РОЛЬ ЗАХИСТУ ПРАВ ЛЮДИНИ У КРИМІНАЛЬНОМУ ПРОЦЕСІ УКРАЇНИ	189
36.	Калюта Д., Федченко В. АКТУАЛЬНІ ПИТАННЯ ЗАПРОВАДЖЕННЯ НОВІТНІХ ЗАСАД (ПРИНЦИПІВ) У КРИМІНАЛЬНОМУ ПРОЦЕСІ	193
37.	Мамчур К. В., Самороков В. О. ЗАХИСТ ПРАВ ЛЮДИНИ В УМОВАХ ВІЙСЬКОВОГО СТАНУ	198
38.	Чабаненко Д. С., Федченко В. М. ПРОБЛЕМИ ЗАСТОСУВАННЯ ПРИНЦИПУ ПРЕЗУМПЦІЇ НЕВИНУВАТОСТІ В КРИМІНАЛЬНОМУ ПРОЦЕСІ УКРАЇНИ	205

SIMULATION OF FUNCTIONING PROCESS OF EQUIPMENT FOR TECHNOLOGY OF UAV ELEMENTS MANUFACTURING FROM USED PACKAGING WASTES

Koloskov Volodymyr,

PhD, Associate Professor,

Head of the Applied Mechanics and Environmental

Protection Technologies Department

Pashchenko Dmytro Viktorovych,

student

National University of Civil Defence of Ukraine

Kharkiv, Ukraine

Jinadu Abdulbaqi,

Lecturer of the Department

of Aeronautical and Astronautical Engineering

Ulinfun Immanuel Osayi,

student

Kwara State University, Malete, Nigeria

Introductions. Unmanned aerial vehicles (UAVs) can solve a variety of tasks, be used to strike land and sea targets, intercept air targets, carry out radio interference, control fire, indicate targets, relay messages and data, as well as deliver cargo. Their main advantage is significantly lower cost of creation and operation. An important factor is that a UAV pilot does not risk his life, unlike an airplane pilot [1].

Today, there are already UAVs samples, the elements of which are made of cardboard [2]. Cardboard and corrugated cardboard are distinguished from other materials by their light weight, relatively low cost, and optimal physical parameters allowing their wide use in various areas of industry and business. But the main quality of corrugated cardboard is the possibility to use the waste of used packaging, i.e. waste paper in its manufacturing. This fact is very valuable for ensuring environmental safety.

UAVs elements made of corrugated cardboard need to ensure special properties, namely: strength, rigidity, the ability to withstand shock loads, plane and end pressure, as well as resistance to moisture penetration. To ensure these properties,

it is necessary to create an appropriate technology for the processing of used packaging waste, which will meet the following requirements:

- sharply organized collection, sorting and transportation of raw materials (used packaging waste, waste paper) to processing enterprises;
- processing of collected raw materials (used packaging waste, waste paper) for further production of corrugated cardboard;
- manufacturing of cardboard and paper for flat layers and fluting with special properties (water resistance);
- manufacturing of high-strength corrugated cardboard with special properties;
- established production of elements for UAVs.

For most operations of the manufacturing process of corrugated board, they use steam. Maintaining the temperature regime of the steam is one of the main factors allowing to withstand the requirements for the strength of the material to be used in UAVs elements. The equipment to ensure the supply of steam of the required temperature and pressure to the corrugated unit is a steam boiler.

Aim. The aim of the study was to develop the model of functioning of the steam boiler in the steam pipeline system for technology of UAV elements manufacturing from used packaging wastes.

Materials and methods. The scheme of the steam boiler used for the manufacturing of corrugated cardboard from the waste of used packaging is presented in fig. 1 [3].

The principle of operation of a steam boiler is that when fuel is burned in the furnace of the boiler, flue gases of high temperature are formed. These gases pass through the gas ducts of the boiler, washing the bundles of pipes through which water circulates. As a result, the gases give some of their heat to the water and cool down. The water is heated and turns into steam, collected in the upper drum of the boiler. Rarefaction in the furnace is formed by smoke.

Cooled flue gases are removed into the air with the help of a flue cleaner through chimneys and a chimney. Prepared water is supplied by a pump through the pipeline to the upper drum of the boiler.

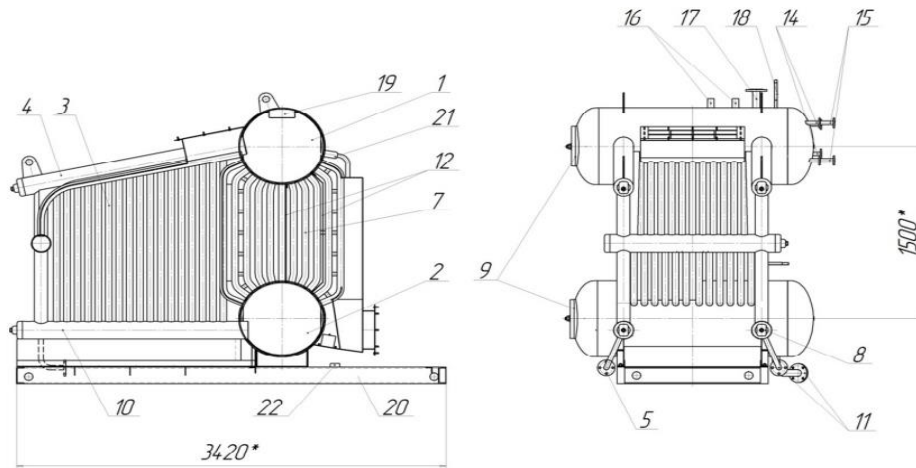


Fig. 1. Scheme of the steam boiler [3]:

1 – upper drum; 2 – lower drum; 3 – furnace screen; 4 – upper collector; 5-blow-out fitting; 6 – shield; 7 – pipe connection; 8 – inspection hatch; 9 – drum hatches; 10 – lower collector; 11 – blow-out fitting; 12 – heat-resistant partition; 13-transverse front collector; 14 – water indicating fittings; 15 – uniform column; 16– safety valve; 17 – steam outlet fitting; 18 – pressure gauge mounting tube; 19-separation device; 20 – frame; 21 – water supply pipe; 22 – mounting bracket

To determine the technological parameters of the pressure loss in the section of the steam pipeline [4] an improved numerical model of the steam boiler operation process in the steam pipeline system of the corrugated unit was developed. The model includes the system of four dependencies (1)–(4).

Assuming that the pressure losses occur uniformly over the entire area, the average linear loss is determined by the formula:

$$R_{local} = \frac{P_1 - P_2}{\sum l_i (1 + \alpha_{local})}, \quad (1)$$

where P_1 and P_2 – pressure value at the beginning and at the end of the steam pipeline; $L = \sum l_i$ – length of the steam pipeline; α_{local} – the coefficient of local losses, which for steam pipelines consisting of several sections, is determined by the formula.

$$\alpha_{local} = \frac{\sum \alpha_i l_i}{\sum l_i}, \quad (2)$$

where α_i – coefficient of local losses of the i -th section of the steam pipeline, which is determined by the Shifrenson formula.

$$\alpha_i = z\sqrt{G}. \quad (3)$$

The estimated pressure drop in the section of the steam pipeline is determined by the formula:

$$\Delta P_i = R_{local} l_i = \frac{\Delta P l_i}{\sum l_i (1 + \alpha_{local})}. \quad (4)$$

Results and discussion. Based on the results of simulation using the developed model (1)–(4), the dependence of the temperature at the outlet of the steam pipeline on the pressure in the steam boiler under different conditions of the manufacturing process was determined (Fig. 2). As it may be seen, the higher the steam pressure value produced by the steam boiler, the higher the steam temperature at the outlet from the boiler to the unit is. It was established that if the required level of pressure in the steam boiler is not maintained, the temperature regime for the manufacturing of corrugated cardboard will not ensure the required strength of the material for the manufacturing of UAVs elements.

Temperature, °C

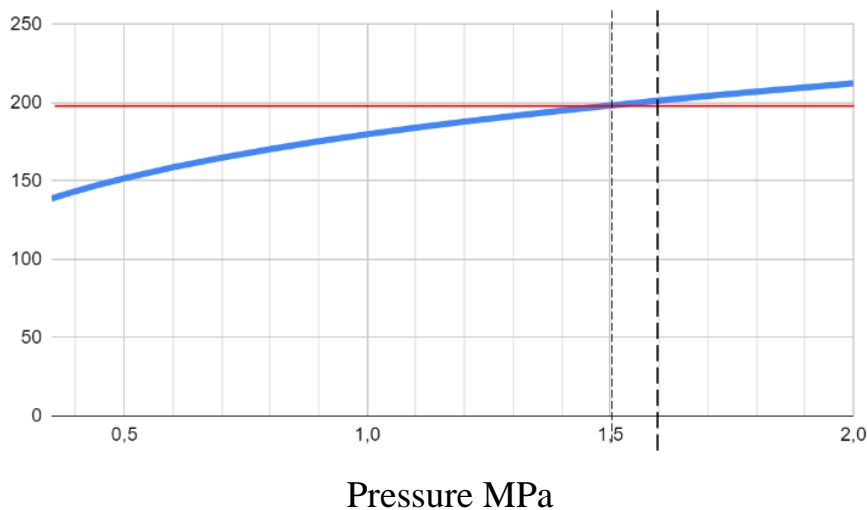


Fig. 2. Dependence of the temperature at the outlet of the steam pipeline on the pressure in the steam boiler

Accordingly, in the technological process of manufacturing corrugated cardboard, at a specific enterprise, it is possible to obtain the required temperature of about 200°C by changing such a parameter as the pressure of the steam generated by the steam boiler. Established temperature regime will make it possible to withstand the given parameters of the manufacturing technology and produce durable corrugated cardboard that can be used for the manufacturing of durable UAV structural elements.

That is, at a specific production, by changing only one such parameter as the pressure of saturated water vapor, we get:

- cardboard of the strength needed to make UAV elements;
- raise of the productivity of the corrugated unit by 40...50 %;
- significant reduction of the amount of waste in the form of scrap.

Conclusions.

1. An improved numerical model of the functioning of a steam boiler in a steam pipeline system in the manufacturing process of corrugated cardboard from packaging waste is proposed. In particular, a set of parameters of the numerical model has been defined, which includes technological parameters affecting the strength of the obtained material, namely: the temperature of the steam at the outlet of the steam pipe of the corrugated unit and the pressure of the steam created by the steam boiler. According to the simulation results, the dependence of the steam temperature at the outlet of the steam pipeline on the steam pressure created by the steam boiler was determined.

2. According to the results of simulation, it was determined that the most effective method allowing to ensure proper temperature regime, is to change such a technological parameter of a steam boiler as the steam pressure at the outlet of the boiler.

REFERENCES

1. Yasnopolska V. Intelligence, target interception and fire control: what drones are used in the war in Ukraine. *FAKTY*, 2023. URL:

<https://fakty.com.ua/ua/svit/20230227-osnovne-pryznachennya-rozvidka-najpopulyarnishi-modeli-bezpilotnykiv-v-ukrayini-ta-rosiyi/>

2. "Deadly" drones made of cardboard and rubber: how UAVs will help fight the Russian Armed Forces. *FOCUS*, 2023. URL: <https://focus.ua/uk/digital/553101-smertonosnye-drony-iz-kartona-i-reziny-kak-bpla-pomogut-borotsya-s-vs-rf-video>

3. Passport No. 06504. Steam boiler E-1,0-0,9 Г-3.

4. Draganov B. H. Thermotechnics. Kyiv: Firma «INKOS», 2005. 400 p.