National Scientific Conference

# NAUKA OKIEM MŁODEGO NAUKOWCA

II edition

Lodz, June 9, 2018

# The Book of Abstracts

# National Scientific Conference
# „Nauka Okiem Młodego Naukowca”
## II edition

## The Book of Abstracts

**Lodz, June 9, 2018**

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**Promovendi Foundation**



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# CONFERENCE INFORMATION

**The National Scientific Conference „Nauka Okiem Młodego Naukowca”** is organized a specially for you.

The Conference has an interdisciplinary character, is addressed to young scientists, starting with first and second degree students, through Ph.D. students, to people who have obtained a doctoral promotion in the last 3 years.

Our initiative aims to create opportunities for exchange of experiences and good scientific practices by representatives of the scientific community. Additionally, it aims to underline the important role of young researchers in the development of Polish science.

In the Conference, two types of participation are possible: passive or active, with active participation giving the opportunity to choose an oral presentation or poster. The conference materials will be published in the form of the Book of Abstracts and Book of Conference Articles with assigned ISBN numbers.

Scientific part of the Conference is supervised by Scientific Committee which contains of doctors and independent research workers from various Polish and foreign universities and industry representatives.

# CONFERENCE PLACE

**Business Center 'Faktoria'** is a Lodz-based business and conference complex with a unique character. The facility providing 3,300 m² of office space, was created in 2002 on the basis of the existing architecture of the manufacturer from 100 years ago. Thanks to its history, Faktoria perfectly fits into the post-exhibition image of Lodz, creating at the same time offices that favor pleasant and effective work. In addition, the complex includes well-equipped training and conference rooms, as well as a restaurant providing catering services according to customer requirements. Due to the central location in the city and high standard, Faktoria stands out on the map of Lodz office buildings. Focusing on continuous development, in the near future our center will be expanded with further office buildings, also referring with its architecture to the factory tradition of Lodz.


# CONFERENCE SCHEDULE

## Business Center FAKTORIA

## 25 Dowborczyków st., Lodz

## June 9, 2018 (Saturday)

| | | | | | |
|---|---|---|---|---|---|
| 08:00 – 09:00 | Registration *(Reception)* | | | | |
| 09:00 – 09:20 | Opening of the Conference *(Hall 3)* | | | | |
| 09:20 – 10:40 | Poster Session *(Hall 1)* | | | | |
| 10:40 – 10:50 | Coffee break *(Patio)* | | | | |
| 10:50 – 12:20 | Training *(Hall 3)* | | | | |
| **Plenary sessions** | | | | | |
| *Hall 1* | | *Hall 2* | | *Hall 3* | |
| **Medical Sciences (**MS**) Economic and Social Sciences (**ESS**)** | | **Technical Sciences (**TS**)** | | **Humanities and Theological Sciences (**HTS**) Natural Sciences (**NS**)** | |
| 12:20 – 13:30 | MS p.I | 12:30 – 13:30 | Dinner | 09:20 – 10:40 | HTS |
| 13:30 – 14:30 | Dinner | 13:30 – 15:00 | TS p.I | 12:20 – 14:30 | NS p.I |
| 14:30 – 16:00 | MS p.I | 15:00 – 15:10 | Coffee break | 14:30 – 15:30 | Dinner |
| 16:00 – 16:10 | Coffee break | 15:10 – 17:00 | TS p.II | 15:30 – 18:00 | NS p.II |
| 16:10 – 18:10 | ESS | | | | |

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## SESSION: TECHNICAL SCIENCES

## *Posters*

# ECONOMIC AND SOCIAL SCIENCES

# DESIGN THINKING METHODOLOGY – THE IDEA AND APPLICATION

**Katarzyna Mordal**

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**A few words about the author:**

I am a PhD student at the Czestochowa University of Technology and vice- president in SSC Design Thinking Space. My interests are: biomedical engineering, medical diagnostics, numerical modeling, biomaterials, Design Thinking, project management.

**Abstract:**

Design Thinking is methodology, as a result of which innovative, sometimes original solutions – new products or services – are created. This methodology, which was born at Stanford University, owes its effectiveness in the design to a few essential elements: focus on the other person and his needs or expectations, interdisciplinarity, teamwork and experimentation and testing developed solutions. It is based on five phases: empathizing, defining the problem, generating ideas, prototyping and testing solutions, which form the whole structured design process. Basing the design process on the above-mentioned assumptions allows to generate solutions, which are firstly desired by potential customers, secondly – technically possible and thirdly – their implementation is economically cost-effective for the company. The above issues make Design Thinking methodology work perfectly in various types of organizations, companies and institutions, therefore it can be applied both in industry, business, education, socioeconomic fields and in everyday life. The result of using DT methodology in this areas is innovative product or service, which can achieve significant success on the market, as example of which are solutions implemented by the IDEO design office and brands cooperated with it.

**Keywords:**

Design Thinking, innovations, service and product design, creativity

# PSYCHOSOCIAL OCCUPATIONAL THREATS OF OFFICERS OF THE PRISON SERVICE. CLASSIFICATION TEST

**Marta Kierska**

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**A few words about the author:**

Psychologist, pedagogue and sociologist. Currently a PhD student at the Institute of Sociology at the University of Silesia. Scientific interests include the issues of dispositional groups with special regard to the Prison Service.

**Abstract:**

Professional work is one of the most important elements of life in society. Remaining many hours in the workplace, people are influenced by a number of factors - both those that affect them positively (resources) and negatively (threats). Additionally, it is necessary to emphasize that the assignment of a factor to the category of resources or threats depends on the subjective feelings of the respondents. The factors that affect human beings in an indirect way - through stress are particularly dangerous. An isolated prison environment, in which there is a polar division between officers and prisoners, and the officers themselves are subject to strict hierarchy, seems to intensify the existing and generate newer threats. That is why the classification of threatening factors present in penitentiary institutions is extremely difficult. In addition, the need for subjective assessment and the multiplicity of potentially harmful factors makes it impossible to create their closed classification, which makes their examination much more difficult, especially when such examination is conducted in penitentiary units.

**Keywords:**

psychosocial occupational threats, officers of the Prison Service

# TRANSFORMATION OF THE PRISON SERVICE IN POLAND. FROM SUPERVISION TO RESOCIALIZATION

**Marta Kierska**

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**A few words about the author:**

Psychologist, pedagogue and sociologist. Currently a PhD student at the Institute of Sociology at the University of Silesia. Scientific interests include the issues of dispositional groups with special regard to the Prison Service.

**Abstract:**

Penitentiary practice is closely related to the development of penitentiary thought, which in turn usually bends under the weight of currently dominant political moods. Michel Foucault already noticed such regularity and called the prison "laboratory of power". Of course, apart from the policy on the appearance and manner of operation of prisons, many other factors influence, such as the economic situation of the country or public opinion. It is the multitude of these factors, which in addition are subject to changes over the years, that made the Polish penitentiary system subject to its 100 year history (for the beginning of the penitentiary system the author adopts 1918, although prisons existed much earlier in Poland) for many transformations. To explain in a clear manner the transformations that have been pushed through the prison system over the past century, the author presents the history of the prison system (with particular emphasis on the role of Prison Service officers) divided into three main periods: post-partition, post-war and modern times. Using this division, the leading elements of penitentiary thought will be shown, with particular emphasis on the role of Prison Service officers. This role, changing over the years from fulfilling only the function of a key to the function of a specialized resocializer, shaped the opinion of the public about this specific dispositional group to a large extent.

**Keywords:**

Prison Service, penitentiary system, history of the prison system

# DISPOSITIONAL GROUP IN POLAND. HISTORY AND PRESENT DAY

**Marta Kierska**

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**A few words about the author:**

Psychologist, pedagogue and sociologist. Currently a PhD student at the Institute of Sociology at the University of Silesia. Scientific interests include the issues of dispositional groups with special regard to the Prison Service.

**Abstract:**

Dispositional groups are a special case of a social group that performs specific occupations and the level of organization of these groups determines the specificity of the tasks to be performed, which they were appointed. The creation of dispositional groups has become a function of civilization development. Along with the development of cities, there was a need for dispositional activities, which should be seen as a trend of professional specialization and social division of labor. It should be remembered that the formation and initial development of the dispositional groups was related to ensuring protection and strengthening of power. The first dispositional groups were multi-task and fulfilled many functions: military, police, penitentiary and rescue. Along with the progressing urbanization, wider order, preventive and protective needs appeared. It was connected with the development of specialist services from tax collectors by the fire service to medical services, in order to achieve extremely complex specializations today. Dispositional groups are developing mainly in response to the development of the so-called the dark side of social life. The needs in the area of order and social security are constantly growing, and the availability groups are required to counteract threats and in the event of their resolving the consequences and liquidating damage.

**Keywords:**

dispositional groups

# DESIGN THINKING – HOW ARE PRODUCTS BASED ON USER'S EXPERIENCE CREATED

**Karol Dobrakowski**

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**A few words about the author:**

Karol Dobrakowski – Master of Science in Mechatronics, PhD student at the Częstochowa University of Technology. Interests:primarily Design Thinking – a certified moderator of the DT process, co-founder the DTworkspace brand.

**Abstract:**

The presentation is an editorial work on the subject of Design Thinking method. This method is closely related to design aimed at experience of the target group. In the first part of the speech a historical outline, which undoubtedly is interesting with the appropriate drawn conclusions, will be presented. The next part will be devoted the idea of the DT methodology. At the beginning, the most important assumptions of the design process based on the DT method will be presented. Furthermore, the rules about which to keep in mind to include them in the design process, will be discussed. Another issue will be the presentation where it is possible to incorporate design thinking to bring the expected results. The final element will be the presentation of the stages that the design thinking process consists of and through which one should go to receive a product or service based on the experience of the recipients.

**Keywords:**

Design Thinking, DTworkspace., Innovation, User`s Experience

# INNOVATIONS – THE PRODUCTS, WHICH CHANGE OUR DAILY LIFE

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**A few words about the author:**

Karol Dobrakowski – Master of Science in Mechatronics, PhD student at the Częstochowa University of Technology. Interests:primarily Design Thinking – a certified moderator of the DT process, co-founder the DTworkspace brand.

**Abstract:**

The topic which will be presented are widely understood innovations. Innovation in modern times is a very often used phrase, however, does everyone understand what is going on? During speech the subject of innovation will be discussed. In this topic products that have achieved the title of innovative, and those that had a chance, however, turned out to be a failure will be presented. The next stage will be the presentation of processes that have been created for these innovative and the latter. Differences, which show how important design based on target recipients is, will be presented too.

**Keywords:**

Design Thinking, DTworkspace., Innovation, User`s Experience

# EVOLUTION OF THE MEDIA SECTOR IN REFERENCE TO FACEBOOK'S CASE STUDY

**Daiwa Maksimowicz**

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**A few words about the author:**

Daiwa Maksimowicz – the graduate of the master's studies at Warsaw University. The student of second year of doctoral studies at Warsaw University. My scientific interests are connected with media industry and economics of this field of knowledge.

**Abstract:**

Nowadays, research of the media sector is not only limited to the traditional model of this subject. The main role is started to play by mobile devices, web-connected content and social media such as Facebook.
Despite of its management's claim that this company doesn't belong to media business entities, Facebook is media indeed. It's often the recipients' core of information and entertainment source. The portal makes it possible to share the opinion and communicate with other people. It can be used as a tool by politicians, too.
If it goes about business model, very important source of finance is advertising income in this case.
This lecture tries to present Facebook as an example of a brand new model of media company, in accordance to an evolutionary concept.

**Keywords:**

media industry, evolution, Facebook, social media

# THE MEDIA'S PORTRAYAL OF A KILLER AND HIS CRIME

**Paulina Sidor**

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**A few words about the author:**

My name is Paulina Sidor and I am a student of Psychology and Criminology at University of Warsaw. I am also a volunteer in ITAKA Foundation, which is helping to find missing people. I am interested in snooker, climbing and the subject of crime.

**Abstract:**

Nowadays, media are always present in our lives, they can shape the opinions and views of the society. It seems that in the group of particular media interest is a phenomenon of crime – a difficult, but important issue. A notable case is the crime of murder, which seems to be often discussed and at the same time clearly distorted by media.
This is why I decided to present you the results of my research on murder and its portrayal in media. My goal was to check whether media's picture of the murder is compatible with its actual representation. The research covered differences in the following subjects: killers, modus operandi, victims and their relations with murderers, legal qualification and punishments.
At the beginning I would like to present facts of the homicide in Poland and its statistical aspect. Next I will present the effects of media research, which covered 3 months of analyzing dailies Fakt and SuperExpress, weeklies Gość Niedzielny, Polityka and Newsweek, website wp.pl, Teleexpress and News on TVP television (selected due to the largest number of recipients). There were obtained 292 criminal reports about homicides.
The discussed topic is not only relevant, which is implied by an increasing importance of media in our lives, but also socially important. Media create values and views of the society. The image of crime presented in media can affect attitudes about work of Justice, courts, penalties and finally a sense of security.

**Keywords:**

media, murder, killer, press, crime

# METHODOLOGY OF DISTANCE LEARNING AND USAGE E-LEARNING IN HIGHER EDUCATION

**Beata Balcerowicz**

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**A few words about the author:**

I am a fifth-year student of Pedagogy (specialization: distance learning and computer graphic) at the Academy od Special Education in Warsaw. My scientific interests focus on issues connected with distance learning.

**Abstract:**

Presentation and article are about distance learning - history, reasons to create, types and current usages.
Article contains a description about specificity of the methodology, that is used in a distance learning lessons. Text is also about implementation and usage of distance learning in higher education. E-learning usages are described in examples of existing e-platforms. Article is based on the latest scientific publications about distance learning and contains schemes and tables made by the writer.

**Keywords:**

e-learning, distance learning, digital media

# HUMANITIES AND THEOLOGICAL SCIENCES

# EARLY GOTHIC SACRAL ARCHITETURE IN VILNIUS

**Sylwia Tyszka**

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**A few words about the author:**

Sylwia Tyszka is a PhD student at the Faculty of Applied Linguistics of the Warsaw University. Her scientific interests are focused on the language and history of architecture.

**Abstract:**

Gothic as an architectural style emerged in France around the middle of the twelfth century, and the place where the first buildings of this type were erected was the Ile-de-France region. The introduction of this style in Lithuania is mainly associated with the adoption of Christianity and the union with Poland in 1385. The christianization of Lithuania, the last pagan country in Europe, was an event of great political, social and cultural importance. The Catholic Church was to fulfill an important role of accelerating the feudalization of Lithuanian society. It was then when the first a diocese in Vilnius was established, what induced foundation of the first churches in this city. At the end of the 14th century these buildings took on the features of the Gothic style. V.A. Čanturija divides the Gothic in Lithuania into two stages:

- the first (the end of the 14th and beginning of the 15th century) characterized by the shaping of this style in Lithuania, an example of which can be the church of St. Nicholas in Vilnius.
- the second stage (the second half of the 15th and 16th century) characterized by the flourishing of this architectural trend in Vilnius and in this city can be discerned at the churches of St. Anne and Bernardines.

In my speech will be presented the buildings erected in Vilnius in the first of the above periods.

**Keywords:**

sacral architecture, gothic, Vilnius.

# PSYCHOLOGICAL NEEDS (H.A. MURRAY) AS PREDICTORS OF SPECIFIC BEHAVIORS. (CHOICES OF A PARTICULAR TYPE OF TEACHING PROFILE OR A SPECIFIC FIELD OF STUDY)

**Elżbieta Trylińska-Tekielska* (1), Robert Paweł Stachowicz (2), Aleksandra Marianna Zmuda (2)**

*(1) Katedra Psychologii Medycznej, Wydział Rehabilitacji, Wyższa Szkoła Rehabilitacji w Warszawie, (2) Psychologia Medyczna, Wyższa Szkoła Rehabilitacji w Warszawie*

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**A few words about the author:**

Robert Paweł Stachowicz, Aleksandra Marianna Zmuda - Second year students of Medical Psychology

**Abstract:**

The topic of the article (presentation) is the issue of psychological needs (H.A. Murray, 1938) understood as a hypothetical force located in the brain, stimulating action and giving a specific direction of action. High saturation of the psychological need "forces" the individual to unload and equalize mental homeostasis. In the research, psychological needs were treated as predictors, determinants of decisions made regarding the choice of the direction of interests.
The subject of psychical needs treated (perceived) as a theory of motivation were dealt with (Murray, Maslow, Gasiul, Siek, Miler-Zawodniak). The research was carried out in March 2017- by the self-portrait of Stein (in the direction of Choynowski) - on the group (N = 66) of the students of the post-primary school classes with profiles: medical rescuer, dietitian.

**Keywords:**

psychological needs, youth, psychology, paramedic, dietetics

# ARTEFACTS OF UKRAINIAN CULTURE IN THE MINDS OF THE HABITANTS OF THE EAST AND WEST UKRAINE, BASED ON THE RESEARCH OF THE CONTEMPORARY WORKSHOP MARKET

**Magdalena Kotowska**

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**A few words about the author:**

I study sociology and Ukrainian philology because it connects my two great passions. Each year I go to Ukraine. I believe, that being abroad and living with natives gives great opportunity to experience real life and receive unforgettable memories.

**Abstract:**

Culture is a sign of society. It is almost everything what we do in every day life. Dishes we eat, way of thinking, fables we listen as a child. Without it we all would be exactly the same. Ukraine, as all other countries has its own culture, but because of differences between east and west it is difficult to describe it.. Motanka doll and masterclasses connected with it show that such simple toy may connect two sides of the country. When Ukraine became an independent country whole people started looking for its roots. Traditional Ukrainian songs and clothes became more and more popular. Among those appeared Motanka doll. At first no one knew exactly what was its history, but most people knew it from childhood. Explorers wanted to find out more about it and that's how begun great boom with this topic. Each year in all Ukrainian cities people organise masterclasses with those small toys. They learn participants about history and way of preparing dolls of happiness. My report is a result of searches I made during working with my bachelor.

**Keywords:**

culture, artefacts, Ukraine, Motanka doll, masterclasses

# POP-CHINOISERIE. RECEPTION OF CHINESE CULINARY INFRASTRUCTURE IN POLAND IN LATE XX CENTURY

**Piotr Pardyka**

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**A few words about the author:**

A PhD student at the Faculty of Polish Philology at Adam Mickiewicz University, cooperating with the Center of Filipino Studies. His specialty is the history and culture of Chinese diaspora in Southeast Asia.

**Abstract:**

Chinese restaurants are peculiar spaces on the maps of European cities. Depending on the profile and target group, they can take the form of stylized pseudo-palaces, as well as cheap eateries specializing in delivery of "Chinese cups". However, if you look closely at them, it turns out that these places have a lot in common. The decor of the interior, as well as tableware, tablecloths, furniture, etc. present in them fit into the aesthetic order, which can be described as pop-chinoiserie. This term refers to the paradigm of reception of Chinese culture, dominant in contemporary Western societies, whose image of the Middle Kingdom was largely constructed on the basis of the material dimension of Orientalist discourse, shaped over centuries of trade. The aim of the presentation is to analyze selected interiors of Chinese restaurants and to define the functions of the objects collected in them.

**Keywords:**

material culture, restaurants, chinoiserie, food studies, things studies

# MEDICAL SCIENCES

# INNOVATIVE DRESSING MATERIALS – A NEW APPROACH TO THE WOUND HEALING PROCESS

**Katarzyna Pieklarz*, Zofia Modrzejewska, Michał Tylman**

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**A few words about the author:**

MSc. Katarzyna Pieklarz – PhD student at the Lodz University of Technology Faculty of Process and Environmental Engineering. Her research interests focus on issues related to biomedical engineering and nanotechnology.

**Abstract:**

Since the dawn of time, humanity has been struggling with wound healing. This process is usually associated with nuisance bleeding and extreme pain in patients. A particularly important therapeutic issue is chronic wounds such as decubitus ulcers, leg ulcers or diabetic gangrene, which indicates a serious infection of the body.
Previous solutions based on the use of traditional dry dressings combined with topical application of antibiotics have not produced satisfactory results. The function of this type of dressing was limited only to covering the wound from the external environment.
Therefore, current emphasis is placed on the introduction of hydrogel polymeric dressing materials to the general clinical practice. As hydrogels have high water content and softness, their properties are similar to properties of living tissue. Application of hydrogel dressing for treatment of hard-healing wounds gives more benefits in comparison to conventional dressings as gauze because they accelerate healing process, help to change dressings painlessly and they also prevent from staying some hard to remove fragments of dressing on the surface of the wound.

**Keywords:**

medicine, wound healing, dry dressing materials, hydrogel wounds dressing

# SOLUTIONS FOR BONE REPLACEMENT USED IN RECONSTRUCTIVE MEDICINE

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**A few words about the author:**

MSc. Katarzyna Pieklarz – PhD student at the Lodz University of Technology Faculty of Process and Environmental Engineering. Her research interests focus on issues related to biomedical engineering and nanotechnology.

**Abstract:**

The need to repair or regenerate bones damaged as a result of trauma, congenital defects or removed by resection of cancerous tumors is currently a challenge for modern orthopedic surgery.
The most common are realized bone grafts, so-called autogenous grafts. These solutions from the biological and immunological point of view are the most advantageous. They are characterized by high efficiency of infusion, but the process of their collection is burdened with a high risk of complications. There may be infections, pain, nerve damage, hematoma, and in extreme cases distortions of the donor site and pelvic instability.
Therefore, new bone-substitution solutions are currently being sought to reduce the undesirable effects of conventional autogenous grafts. The ideal replacement material used in bone reconstruction should imitate the functions of healthy tissue. It should be bioresorbable and biocompatibility for the human body and provide similar durability as natural bone. Particularly high hopes concern the use of human mesenchymal stem cells with porous scaffolds.

**Keywords:**

reconstructive medicine, bone tissue, scaffold, stem cells

# THERAPIES IN CANCER TREATMENT TARGETED AT EGFR

**Sebastian Bała**

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**A few words about the author:**

An undergraduate Biotechnology in English course student who is fascinated by molecular biology and virology and wants to pursue these subjects in his future education and work

**Abstract:**

Epidermal growth factor receptor (EGFR) is a receptor tyrosine kinase present in very large numbers on the surface of a variety of cancer cells due to overexpression. It is a crucial transmembrane protein, mainly responsible for controlling the growth, survival, and differentiation during the proliferation of a cell. EGFR is both used as a marker in diagnosis of its dependent cancers and as a target in treatment of many cancers, some of which are thymoma, colorectal cancer, and glioblastoma. The successful inhibition of overexpression and down-regulation of abnormal EGFR signaling can significantly halt tumor development and eventually lead to the recovery of a patient. Due to EGFR's large number of ligands and signaling pathways, including transactivation by other receptors, this can be achieved in multiple ways. This presentation's goal is to show various methods of EGFR-targeted therapies and describe their mode of action as well as viability in cancer treatment.

**Keywords:**

EGFR, cancer treatment, therapy

# THE IMPACT OF ADVERTISMENT ON APPLYING DIETARY SUPPLEMENTS

**Magdalena Kolano, Karolina Dudek***

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**A few words about the author:**

We are students of Dietetics at the first year of master's studies. In addition, we belong to the Scientific Association of Nutritionists, where we develop our interests and deepen our knowledge about a healthy lifestyle.

**Abstract:**

Dietary supplements aim at complete the daily deficit food ration with some minerals or vitamins. In recent years, the supplement market has been growing more intensively in the world and in Poland.
The aim of this thesis was to assess the impact of advertising on the use of dietary supplements, the prevalence of their intake depending on the sex, BMI, disease incidence and season of the year. In addition, the advertising of supplements on selected TV channels was quantified (TVP1, Polsat, TVN).
The study was conducted in a group of 1000 people, including 748 women and 252 men. The average age of the subjects was 23 years (average age of men 23.4 +/- 4.7, average age of women 23.2 +/- 4.5). An online questionnaire of one's own authorship was used. The results were developed with using the Statistica program. Statistical significance of differences was estimated at $p < 0.05$. Half of the respondents declared the use of supplementation, 52% of them consume it every day. The most common goal of using supplements was to complete deficiencies of vitamins or minerals. People with normal body mass more often choose dietary supplements to complete deficiencies of vitamins or minerals ($p = 0.02$). Only 30% of respondents consulted using supplements with a doctor. The supplements which were mostly appearing on TV channels concern the protection of the abdomen, vitamins and preparations strengthening the body.

**Keywords:**

diet, supplements, advertisement

# BRCA1 MUTATION CARRIERS' PREFERENCES COMBINED WITH BREAST CANCER RISK REDUCTION

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**A few words about the author:**

First year student of biotechnology postgraduate studies at UMK in Toruń. Moreover, I am proactive member of scientific circle "Biotechnologia thoruniensis". Besides, my master's dissertation is implementing in NZOZ Pracownia Genetyki Nowotworów.

**Abstract:**

The newly emerging cancer cells' proliferation in a human body depends on many factors, both environmental and genetic. Susceptibility to all kinds of carcinogens is, in particular, mainly relate to patients burdened with genetic predispositions. In this case, development of the cancer is primarily conditioned by abnormal information stored in the genetic code, passed down from generation to generation through the mutant gene. The most commonly recognized syndrome of inherited predisposition to cancer is caused by mutations in the BRCA1 or BRCA2 genes. Among carriers of mutations in the BRCA1 gene, the risk of breast cancer is up to 87% after the age of 70. The factors which reduce breast cancer include invasive way (mastectomy), pharmacological (tamoxifen application) or mandatory prevention, i.e., periodic mammography or magnetic resonance imaging

**Keywords:**

carcinogenesis, BRCA1 mutations, breast cance

# THE ESCAPE OF PROSTATE CANCER FROM THERAPIES – THE GAIN OF ANDROGEN-INDEPENDENCE, PATHWAYS FOR ESCAPE AND DISCOURSE ABOUT HOW TO FIND NEW THERAPIES

**Bartosz Gąsiorkiewicz* (1), Zuzanna Handziuk (1), Marta Krzysztofik (1), Aleksandra Litewka (1), Piotr Gabryś (1), Joanna Dulińska-Litewka (2)**

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**A few words about the author:**

Student of third year medical studies interested in clinical and experimental oncology. Member of Medical Biochemistry Students' Research Group. Especially concerned with cancer apoptotic pathways and new cancer therapies.

**Abstract:**

Introduction: Prostate cancer (PC) is the second most common cancer in men. Available therapies concentrate on androgen withdrawal to supress its stimulatory effect, but the therapeutical problem occurs when PC gains hormone-independency. Numerous molecular pathways are related to this issue - the vital ones are dependent on PI3K/Akt, MAPK/ERK, PTEN and Ras. These pathways are able to stimulate the progression of a PC, mainly by gaining androgen independence and promoting epithelial-mesenchymal transition vital for metastasis.
Aim: The aim of study was to explore molecular mechanisms reated to PC progression and to propose novel therapeutic strathegies based on in vitro studies with the use of targeted siRNA and statins.
Methods: The study was carried out on human prostate cell lines (PC-3, Du-145, WPMY, RWPE and LNCaP). Expression of cell signaling proteins (Akt, AR, PTEN, Ras, MMPs, ERK1/2, Snail, Slug etc.) was analyzed using Western Blot and RT-PCR.
Results: The study proves many molecular pathways dysregulation to be vital for PC progression and provides that statins and siRNA approach may be effective in decreasing PC aggressivness.
Conclusion: Changes in molecular pathways during PC progression may be vital for designing novel targeted therapies, improving diagnosis and planning opimal treatment for PCpatients. Moreover our study provides data that statins use and siRNA approachmay diminish PC progression suggesting they may be consider as potentialtherapeutics.

**Keywords:**

prostate cancer, cancer treatment, statins, siRNA

# NEW POTENTIAL DIAGNOSTIC PARAMETERS FOR GESTATIONAL DIABETES MELLITUS

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**A few words about the author:**

I am second year Phd student. I work as laboratory diagnosician in Teaching Hospital in Białystok. My research interest focuses on pathogenesis and diagnosis of gestational diabetes mellitus. I using in my work the newest technology as Nanostring.

**Abstract:**

Gestational Diabetes Mellitus (GDM) is a metabolic disorder of carbohydrate intolerance first recognized during pregnancy. The main role in developing GDM is assigned to disorders of secretion of insulin and defective pancreatic β-cells. Discovering new GDM biomarkers will allow for a better understanding, diagnosis and treatment of GDM patients. We investigated biochemical factors like fractalkine and adiponectin. Furthermore we checked a microRNA profiles in a small, well matched groups.
Methods and Materials: 15 women with GDM and 58 controls with normal glucose tolerance in the first trimester were studied. Serum concentration of fractalkine and adiponectin were measured by commercially available ELISA and RIA kits respectively. 6 women with GDM and 6 controls in second trimester was examined according to microRNA profiles using Nanostring technology.
Results: We revealed a statistical significant decrease of fractalkine and adiponectin levels in GDM patients. We have confirmed a correlation between adiponectin level and HOMA-IR. We identify several significant miRNAs which differed in both group (miR-181b, miR-1275, miR450a)
Conclusions: Lower concetration of adiponectin and fractalkine in the GDM patients in the first trimester of pregnancy may be a factor affecting the development of insulin resistance and pancreatic β-cells disfunction. Differences in miRNA profile can help us in earlier GDM diagnosis and better pathogenesis understanding.

**Keywords:**

GDM, microRNA, gestational diabetes mellitus, biomarkers

# 3D BIOPRINTING – PRESENT OR FUTURE?

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**A few words about the author:**

I am a student of biomedical engineering at the Lodz University of Technology. Currently, I am doing a master's thesis in the field of hydrogels adapted to the bioprinting. My scientific passion is the use of additive manufacturing in medicine.

**Abstract:**

Intensively developed field of bioprinting promises unprecedented possibility of obtaining in vitro fully functional tissues. The independence from organ donors and the availability of perfectly matched organs can bring a revolution in transplantation medicine and will replace not always reliable tests on cell cultures with tissue culture tests. Currently, several methods are used to create spatial cell cultures (usually they consist in forming cell aggregates in suspension or placing cells in a hydrogel). The basic problems are the lack of ordering of cells within the structure and the impossibility of delivering nutrients to the cells deep inside the layer. The solution may be a combination of technical and biological achievements - the 3D bioprinting. Thanks to the technology of the bioprinting, it becomes possible to create cell cultures in which the cells are arranged like the tissues and the access of nutrients is ensured by specially made vessels. Currently, the 3D bioprinting of fully functional organs is impossible to achieve due to their complex anatomical structure. However, many research and development centers carry out research on the development of new materials and new geometries, as well as on the development printing methods, which in the future will enable the printing of functional organs. Popular hydrogels and current achievements in bioprinting, potential applications and limitations that still need to be solved will be presented.

**Keywords:**

3D bioprinting, Tissue Engineering, regenerative medicine

# EFFECT OF INDEPENDENCE FROM THE SYNTHETIC DRUGS ON TACTILE DISCRIMINATION AND SURFACE FEELING IN THE UPPER LIMBS

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**A few words about the author:**

My name is Anna Fyda. I am a physiotherapy student at the Medical University of Silesia in Katowice. I have been researching the feeling of drug addiction for several years.

**Abstract:**

INTRODUCTION AND WORK AIM

Synthetic drugs is a common name for various types of products containing psychoactive substances that are not on the list of prohibited substances, controlled by the law on counteracting drug addiction. . The aim of this work was to check the influence of using boosters on tactile discrimination and surface feeling in upper limbs.

MATERIAL AND METHODS

The research group consisted of 15 addicts, using boosters for a minimum of one year. The control group consisted of 15 healthy people who never used drugs or other psychoactive substances. The addicted persons stayed in closed addiction treatment centers and did not consume any psychoactive substances for at least 4 months. The sense of touch was tested using the technomex WEST-HAND hand tester. In order to determine tactile discrimination, a two-point discriminator was used. The tests were performed in the upper limb dominating and not dominating on the dorsal surface of hands and fingers.

RESULTS

After analyzing the obtained results, statistically significant differences were found ($p < 0.05$) in the feeling of people addicted to boosters in relation to healthy people.

CONCLUSIONS

The use of synthetic drugs disturbs superficial feelings and sensory discrimination in the upper limbs. The research confirms the toxic influence of the boosters on the nervous system.

**Keywords:**

synthetic drugs, discrimination, feeling, touch, upper limbs

# FREQUENCY OF BACK PAIN IN PHARMACISTS IN THE ŚLĄSKIE VOIVODESHIP

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**A few words about the author:**

The issue of human health is very interesting to me. I want to share my passion with health sciences with people.

**Abstract:**

Spinal pain is one of the most common dysfunctions causing limitation of activity, whether professional or everyday. However, pharmacists are also a professional group exposed to back pain. The research group consisted of 75 women working in a pharmacy. People work in various pharmacies of the Silesian Voivodeship. During their work, they perform a variety of activities that can cause or worsen spinal pain. After the analysis of the questionnaire, it was shown that work in a pharmacy can promote the occurrence of pain in the spine. Most of the respondents stated that the pain was discriminated against by the standing position of 71%, and the seating position was marked by 11%. Carrying contributes to pain in 35% of the respondents. Work in a pharmacy predisposes to the formation of back pain syndromes. All measures should be taken to introduce more control over the ergonomics of the pharmacist's workplace to avoid multiplying the number of patients.

**Keywords:**

back pain, long standing position, spine, discrimination pain, spine diseases

# ASSESSMENT OF THE KNOWLEDGE OF OBESE PEOPLE, ABOUT THE PROPER NUTRITION AND BENEFITS OF PHYSICAL ACTIVITY

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**A few words about the author:**

In Poland,61 procent of men and 50 procent of woman surfer from overweight and obesity[1].

**Abstract:**

The aim of the study was to examine the knowledge of obese people about the proper nutrtion and the impact of physical altivity on the fight against obesity[2].
The research material was collected among patients of the Clinic of Proper Nutrishing and Weight Loss in Zwoleń and among parttime students who constituted a group of 30 respondents. Due to the nature of the work, the method of the diagnostic survey was used, the survey techniquewas used, for which the orginal questionnaire was created.
The analyses show that 95% of respondents are overweight, 4% of them are obese and 1% suffer from pathological obesity. Among the studied group very low knowledge about proper nutrition was obeserved, which results in permanent obesity. The conclusions drawn from the conducted studies show that the influence of nutritional habits is important in maintaining a healthy body mass, and the observed low physical activity among the respondents contributes to the lack of effects of the therapy[3].

**Literature:**

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# NATURAL SCIENCES

# CAFFEINE IN THE DIET DUE TO THE NEED FOR GENETIC RESEARCH

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**A few words about the author:**

Students of biotechnology, passionates of biology, biochemistry and molecular biology.

**Abstract:**

Caffeine is a plant alkaloid which is a central nervous system (CNS) stimulant of the methylxanthine class. It is the world's most common element of human diet, because it is a component of coffee, chocolate, tea, drugs and common sweet drinks. Global consumption of this stimulant has been estimated at 120,000 tones per year. Caffeine's main mechanism of action is as an antagonist of adenosine receptors in the brain, which consequently prevents the onset of drowsiness induced by this nucleoside. In opposite to many other psychoactive substances, it is legal and unregulated in nearly all parts of the world. Caffeine is metabolised in the liver via the cytochrome P450 oxidase enzyme system, by the CYP1A2 isozyme. High consumption of caffeine may increase risk of blood system disease and can be harmful for women in pregnancy.

**Keywords:**

caffeine, CYP1A2, cytochrome P450, diet, genetic research

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# THE INFLUENCE OF BIOSTYMULATOR ASAHI SL AND A KIND OF GROWTH SUBSTRATE ON GROWTH PARAMETERS OF AGERATUM HOUSTONIANUM SUBJECTED TO PERIODICAL DROUGHT

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**A few words about the author:**

I am a student of Horticulture at Warsaw University of Life Sciences. I am interested in ornamental plants, annual bedding plants as well as cut flowers and floristics. Currently I am at Msc. course of Horticulture.

**Abstract:**

Ageratum houstonianum is a common bedding plant, often used in seasonal flowerbeds or planted in the containers which may suffer from abiotic stress, such as water deficit. Under stressful conditions it is very important to protect them properly. On purpose, ageratum plants were subjected to spraying with 0,5% Asahi SL to decrease negative drought effects.
The aim of current experiment was to define the effectiveness of above treatments on the ageratum to alleviate negative drought effects. The experiment was carried in the growing season of 2017 in the greenhouse of the Department of Ornamental Plants at WULS in Warsaw. During the experiment the factors such as biostimulant application and the substrate type were tested which may effect on plants reaction on drought.
After two months of the experiment, plant height, number of leaves and flowers were measured as well as soluble protein content, hydrogen peroxide content and catalase activity were tested. Asahi SL did not affect growth parameters in ageratum. In regularly watered plants, the growing substrate type did not affect their growth parameters. In periodically stressed ageratums, these growing in standard substrate were more decorative (characterized by higher number of leaves), but higher catalase activity was observed in plant growing in the substrate with 20% wood fibers. This may point at positive effect of wood fibers addition to the peat substrate on activity of defense system in plants.

**Keywords:**

periodical drought, bedding plants, biostimulants

# CONSTRUCTION OF LUCIFERASE-BASED REPORTER YERSINIA ENTEROCOLITICA O:3 STRAINS FOR MONITORING GENE EXPRESSION IN VIVO

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**A few words about the author:**

PhD student in microbiology

**Abstract:**

In vitro conditions cannot mimic real gene expression levels that take place during the bacterial infection. Advanced and highly sensitive in vivo imaging systems are used to monitor subsequent stages of host colonization. In this study two reporter systems of Y. enterocolitica O:3 were compared. In the first strain luciferase luxCDABE genes were separated into CDE (for luciferase substrate) located downstream to constitutive promoter and AB (for luciferase) under investigated promoter. Such arrangement was expected to emit the light of the strength dependent only on the luciferase abundance that reflects the promoter activity. In the second strain, entire lux operon was controlled by the examined promoter. The study showed that the systems differed in terms of luminescence when the same promoters were tested. Although RNA-seq data indicated high enough strength of the CDE promoter in the first system, substrate amount seemed to be the light emission limiting factor making this variant less reliable.

**Keywords:**

reporter system, Yersinia, luciferase

# DIFFERENCES BETWEEN IN VITRO AND IN VIVO PROPAGATED VACCINIUM CORYMBOSUM L. PLANTS

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**A few words about the author:**

Marzena Mazurek is employed on the position research assistant in the Department of Plant Biotechnology and Physiology. My scientific interest are focused on the somaclonal variation in the context of propagation method of Vaccinium plants.

**Abstract:**

Highbush blueberry is the most commonly cultivated, commercially important and biologically valuable plant because of high content of vitamins, anthocyanins and other bioactive organic substances. In recent years, there has been an increased propagation Vaccinium plants with using in vitro method. However, the tissue culture process does not always corresponds to obtain clones, and often results in numerous morphological changes of regenerated plants which are undesirable by growers. The aim of presented work was to estimate the effect of propagation methods on chlorophyll content, fluorescence parameters and morphological characters (growth and development rate) as well as rooting efficiency and molecular differences in Vaccinium plants, propagated in vitro and in vivo. The research was performed on Vaccinium 'Brygitta Blue' cultivar. The plants were propagated differentially: in vitro with axillary explants; in vitro with adventitious explants; traditionally and in vitro at first and traditionally subsequently. The result of analysis indicated the differences for chlorophyll and absorbance level and the morphology of growth around the epigenotypes of Vaccinium plants differentially originated. Molecular markers MSAP showed also a different profile of methylation between analyzed epigenotypes. Summarizing, Vaccinium plants propagated with using different methods (in vitro and in vivo) vary on the molecular, physiological and morphological level.

**Keywords:**

blueberry, micropropagation,

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# GOLD AND SILVER NANOPARTICLES IN IN VITRO STREPTOCARPUS REGENERATION

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**A few words about the author:**

I am a graduate of engineering studies in the field of nanobioengineering at the UTP University of Science and Technology in Bydgoszcz, I am currently studying chemical technology. I am a member of SKN ExPlant which deals with plant micropropagation.

**Abstract:**

Micropropagation by adventitious shoots proliferatrion in plants with easy regeneration of adventitious shoots is a very efficient propagation method. Due to the dynamic development of nanotechnology, the environment is constantly exposed to contact with nanoparticles. The purpose of the research in this work was to evaluate the effect of nanosilver and nanogold at various concentrations on the regeneration of adventitious shoots in the Streptocarpus × hybrida. The starting material for the experiments was the in vitro culture of Streptocarpus × hybrida. Single, 2-3 cm long leaves (phyllomorphs) were inoculated horizontally on MS medium supplemented with 0.5 μM NAA. One ml of a suitable silver or gold nanocolloid with a concentration of 10 or 30 ppm was instilled per each explant. Explants not treated with nanoparticles were control. Reproduction was carried out in 5 repetitions, for 12 weeks in a growth room. The number of single rosettes, the average number of leaves regenerated on one explant and the number of leaves with a length of less than 0.5 cm; 0.5 ≥ 2 cm; 2 ≥ 4 cm; above 4 cm were determined. The analysis showed that 10 ppm nanogold promotes regeneration on leaf explants. Nanosilver at 30 ppm concentration and nanogold at 10 and 30 ppm accelerates the regeneration process of the Streptocarpus × hybrida for one week compared to the control. The third and fourth week is a breakthrough in the regeneration of the Streptocarpus × hybrida.

**Keywords:**

streptocarpus, micropropagation, nanogold, nanosilver, in vitro

# THE INFLUENCE OF THE REPRODUCTION METHOD (CONVENTIONAL, ORGANIC) FOR THE QUALITY OF SEED OF SELECTED VEGETABLES

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**A few words about the author:**

I am a first-year Master's student in the field of ecological engineering at the Faculty of Agriculture and Biology of WULS. My scientific interests are seed science and ecology. Besides, I am interested in music and decorative plants.

**Abstract:**

The aim of the study was to compare the sowing value of organic seeds of different types of vegetables with conventional seeds. The tests were carried out with lettuce seeds (Królowa Majowych variety), cucumber (Soplica variety), spinach (Greta variety) and beetroot (Czerwona Kula variety) from PlantiCo (Zielonki, Poland). In the experiment, seeds were sown in the ground to observe plant growth, in the laboratory in containers lined with blotting paper, and on Petri dishes to observe the germination process. In addition, the weight of thousand seeds of each species and genus was estimated, to determine the price to seeds amount ratio in the package. In general, conventional seeds had higher sowing value and thousand seed weight, compared to their organic counterparts. Differences in quality depended on the species. Quality of organic lettuce seeds was the lowest. High percentage of damage to organic cucumber (10%) was observed.

**Keywords:**

organic seeds, lettuce, spinach, cucumber, beetroot

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# THE STUDY OF ELASTIC PROPERTIES AND CHEMICAL COMPOSITION OF SELECTED ROCKS

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**A few words about the author:**

My name is Sandra Herber, I am a student of Geophysics Studies at University of Silesia. I am in my third year. My interests are: application of geophysical methods in environmental surveys and natural radioactivity.

**Abstract:**

The aim of the investigation was to study the elastic properties and chemical composition of rock samples based on laboratory measurements. Three cuboid samples of diabase, granite and quartz were tested under laboratory conditions. The shape of samples is a cuboid with dimensions 0.1 x 0.05 x 0.05 m and the measurements were made in three directions. The Pundit Lab+ equipment was used for tests. The signal frequency value was 250 kHz. The propagation times of P- and S-waves were designated that allows to determine the elastic dynamic moduli values. The Japanese JEOL USA Scanning Electron Microscope was also used for tests. The chemical composition of rocks were determined by characteristic X-rays analysis. Obtained results show that the ultrasonic measurements and SEM are useful tools to assign properties of rocks. This knowledge makes easier recognition in preliminary stages during engineering study. Obtained results show that the ultrasonic measurements are useful tool to assign elastic modulus of rocks. The study of the elastic properties measured in the laboratory conditions provides an additional information about the physical properties of rocks. These kinds of measurements may be used as supplement or calibration of the geophysical results and/or also have importance for solving stability problems of engineering projects.

**Keywords:**

ultrasonic measurement, elastic dynamic moduli, chemical composition, characteristic X-rays analysis

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# REPRODUCTION CROSSBREEDING CATTLE PHF & SR AND PUREBREED PHF

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**A few words about the author:**

PhD student at the Faculty of Animal Sciences at WULS

**Abstract:**

Dairy farming is one of the most important branches of agricultural production. It owes its high level to consistently conducted breeding work in the field of milk characteristics and type and structure characteristics. This would not be possible without the development of artificial insemination, whereby its huge advantage, is that the semen of the best fertilising bulls, after prior assessment of its genetic value, can be used on a large scale. Unfortunately, apart from the positive effects of breeding work (eg high productivity), negative ones connected with low-functional features are also becoming more and more frequent. These include deterioration of the cow's health as well as resistance to mastitis, fertility and longevity. Both the global and national population of the Holstein breed is becoming more and more inbred, which in turn translates into an increase in inbreeding depression. This is due to a decrease in genetic diversity within the entire population and an increase in relatedness, which is largely due to the excessive use of semen from the best fertilising bulls. An excellent solution to this situation is the use of interracial crossbreeding, which eliminates problems typical of inbreeding. It is a phenomenon contrary to inbreeding depression and affects not only functional features, but also production features. The aim of the study was to assess the impact of breeding dairy cattle between dairy breeds on the results of reproduction.

**Keywords:**

inbreeding, crossbreeding, reproduction

# PRODUCTION PUREBREED CATTLE PHF AND CROSSBREED PHF & SRB

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**A few words about the author:**

PhD student at the Faculty of Animal Sciences at WULS

**Abstract:**

High production of HF is due to the systematic and consistent genetic improvement towards milk production as well as wide use in AI of dairy bull semen only the most genetically outstanding males. Unfortunately, besides significant improvement of cows' milk yield, the use of a small number of bulls was a "bottleneck" of the breeding program which to decrease heterozygosity and in consequence increase the inbreeding level and caused inbreeding depression in many countries. Inbreeding depression caused health problems, deteriorating both the production and reproduction results and increased frequency of the lethal genes. The genetic tool which can be used to limit inbreeding and to improve the low inheritable functional traits is crossbreeding. That is why for last several years, an increased interest of dairy farmers to implement this method has been observed. Besides the inbreeding limitation, this method produces beneficial heterosis effect, which is due to a favorable combination of genes. The heterosis effect is more noticeable as a result of increasing the genetic distance between crossed breeds. An additional advantage of crossbreeding is the acceleration of genetic improvement milk production and milk composition. The aim of this study was to compare the results of milk performance of purebred Polish Holstein-Friesian (PHF) cows and their crossbreeds (PHF & SR).

**Keywords:**

crossbreeding, heterosis, milk production, milk composition

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# ANALYSIS OF TREE STAND LOSS BASED ON PHOTOGRAMMETRIC DATA FOR THE WILANÓW DISTRICT OF WARSAW

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**A few words about the author:**

I am 4th year student at the Faculty of Geodesy and Cartography. My interest are focused on using new photogrammetric methods for vegetation and terrain research, in particular on the detection of changes in stands and changes in terrain.

**Abstract:**

The aim of the work is to analyze tree stands changes for the area of the Wilanów district, developed based on photogrammetric data. Using different photogrammetric techniques, the source data was processed, which enabled the five-year analysis of changes that allowed to receive information on the range and occurrence of trees. The overriding work problem was to answer the question of how large changes in the range and height of forest stands occurred over five years and what is the state of trees occurrence in 2017. The data from aerial laser scanning and digital aerial photographs were used to implement the work.
The analysis of changes showed the degree of defect in stands and in which places the loss is the largest. In addition, the results obtained from altitude models were correlated with the determined GRVI index. Thanks to this, it was possible to verify the correctness of the analysis performed, based on two independent methods

**Keywords:**

aerial laser scanning, digital photos, point clouds, numerical height models, analysis of stand changes

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# THE INFLUENCE OF THE PARASITE ON THE BEHAVIOUR AND FUNCTIONING OF THE HOST

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**A few words about the author:**

2nd year student of medical analytics.

**Abstract:**

Parasitism is an occurrence which depends on the interaction of two organisms, one of which benefits at the expense of the other. Unusual examples of parasitism are Cymothoa exigua, Dicrocoelium dendriticum and Toxoplasma gondii.
Cymothoa exigua is a small shellfish. It gets into the fish's mouth through its gills. Parasite sucks blood from the fish tongue by using the claws on the front legs. When it reaches a bigger size, the organ is completely reduced because of cessation the blood flow into the tongue. C. exigua attaches itself to the muscles of the tongue and begins to perform its function, without causing additional damage to the fish's body.
Another example is Toxoplasma gondii is protozoan and has the ability to infect many animals, including mice. Parasite gets into the animal's body by ingestion, and along with the blood moves to the brain. It begins to control the activities of the central nervous system, causing that mouse, rather than being afraid of a predator cat, treating him like a potential sexual partner.
In turn, Dicrocoelium dendriticum is a flukes whose intermediate host is an ant from the Formica genus. After ingesting the invasive form of the parasite- it goes to the nervous system. Presence of cercaria in the nervous system of the ant affects the dysregulation. of the its daily cycle - it force the ant to enter the top of the plants during the day, attach itself with jaws and await for ingestion by the final host of the Dicrocoelium.

**Keywords:**

parasite, host

# SERIOUS EPIDEMIOLOGICAL PROBLEM AS A CONSEQUENCE OF ECHINOCOCCUS SPP. INVASION IN EUROPE

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**A few words about the author:**

Second year student of medical analytics

**Abstract:**

There are several species of echinococcus tapeworms in the world, but only two of them occur in the Europe - E. granulosus and E. multilocularis. According to WHO, more than 1 million people all over the world are infected The infection is a consequence of ingestion of unwashed food covered with tapeworm's eggs.

E. granulossus causes cystic echinococcosis, which progress with forming a single echinococcus blister and is covered with meninges, created by the host. Symptoms are largely dependent on affected area. In the liver growing cyst obstructs the biliary system, and can cause inflammation or cholestatic jaundice. Additional symptoms are nausea, vomiting, indigestion and weight loss. The pulmonary form is manifested through chest pain, cough, and haemoptysis.

In the case of E. multilocularis there are also nonspecific, incidental hosts, whose organisms do not allow any development of protoscolices. This type of hosts are mammals such as human. Echinococcus multilocularis causes alveolar echinococcosis and frequently develops in the liver, causing abdominal pain and biliary obstruction It is possible to spread the larvae with blood and lymph.

The methods of choice in diagnosis of echinococcosis are imaging techniques such as ultrasonography, computer tomography and magnetic resonance imaging. There is possibility to mistake parasite for tumour. Disease is confirmed by founding protoscolecses in biopsy material or with serological methods e.g. ELISA.

**Keywords:**

echinococcus, tapeworm

# THE ROLE OF IAA-ASPARTATE IN PATHOGENESIS IN PLANT CELLS

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**A few words about the author:**

I'm biotechnology student. I'm interested in biochemical processes and carcinogenesis.

**Abstract:**

Auxin conjugates are derivatives of phytohormones that arise as a result of a covalent bond between a carboxyl group (-COOH) auxin and an amino group (-NH 2) of an amino acid or a hydroxyl group (-OH) of sugar (e.g. glucose) or alcohol (myoinositol). Conjugates usually do not show biological activity, and their synthesis enables, among others, reversible inactivation of phytohormones. We divide the conjugates into two ester groups, which occur most often in monocot plants, i.e. maize and amides usually found in dicotyledonous plants, e.g. pea
An example of an amide conjugate is indolyl-3-acetyl-aspartate (IAA-aspartate), which is not a source of free auxin, but is involved in the degradation of this hormone. This suggests its role in the response of plants to various types of stress.
Studies indicate that plant pathogens affect auxin metabolism by increasing the concentration of IAA-Asp. Moreover, IAA-Asp probably promotes the disease process by regulating the virulence gene transcription.

**Keywords:**

auxin, IAA-Asp, conjugates, pathogens, biochemistry

# PERSPECTIVES OF PLANT STRESS TOLERANCE – PHYTOHORMONES ENGINEERING

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**A few words about the author:**

I am a MSc Biotechnology student at the Faculty of Biology and Environmental Protection (Department of Microbiology), NCU. My research interests include analysis of plants-microorganisms symbiotic interactions involving phytohormones activity.

**Abstract:**

Plant hormones, called phytohormones, are small molecules produced in extremely low concentrations, able to regulate whole plant metabolism through a variety of processes on the cellular level. Coordinating many signaling crosstalks, they play crucial role in plant growth and development. They are determining plant responsiveness to abiotic stresses, such as drought, salinity, excessive watering, radiation, cold and heat. Limited agricultural lands and increasing human population with growing demand on food supply are putting pressure on modern agriculture. Farmers have to primarily aim for reducing crop losses, resulting, among others, from plants' sensitivity to the constantly changing, stress-imposing environment. Metabolic engineering of phytohormones may provide new solutions to this challenging issue, as our knowledge of signal-transduction pathways extends, along with genomic technology progression.

**Keywords:**

phytohormones, plant physiology, metabolic engineering, stress tolerance

# THE SCPL FAMILY ACYLTRANSFERASE – AN ENZYME OF IAA ESTER CONJUGATES BIOSYNTHESIS PATHWAY IN MONOCOTYLEDONOUS PLANTS

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**A few words about the author:**

I'm a first year student of biotechnology postgraduate studies in Nicolaus Copernicus University and a member of scientific circle 'Biotechnologia thoruniensis'. My researches are related to role of auxin conjugates in plants' growth and development.

**Abstract:**

Auxins belong to a group of phytohormones, which regulates many growth and developmental processes in plants, such as stimulation of root growth or elongation increase. Free acid is an activated form of auxins, while auxins conjugates are thought to be inactive, overbalanced in plant cell form of that hormone. Auxin conjugation is a formation of covalent bond between an auxine's carboxyl group and some other organic compound. If an ester bond is formed between an auxine and hydroxyl group of alcohol or sugar, ester conjugates are formed. If an amide bond is formed between an auxine and amine group of aminoacids, peptides or proteins, amide conjugates are formed. Ester conjugates are tend to occur mostly in monocotyledonous plants. Two enzymes are involved in IAA ester conjugates biosynthesis pathway such like IAA-glucose synthase (IAGlc synthase) and IAA-myo-inositol transferase (IAInos synthase). So far, IAInos synthase has been found only in maize and rice. This enzyme catalyses a reaction of transfer of IAA-moiety group from IAA-glucose to myo-inositol. Ester conjugates have an important role in maintaining hormonal homeostase in plant.

**Keywords:**

phytohormones, auxin conjugates, ester conjugates, serine carboxypeptidase-like acyltransferase

# CASEIN KINASE II AND ITS ROLE IN TUMORIGENESIS

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**A few words about the author:**

Biotechnology student at the Catholic University of Lublin interested in molecular biology, especially in the protein kinase family.

**Abstract:**

Day by day cancer becomes more of a problem for humanity. So far researchers could not find a way to create an effective drug to fight it. An opportunity to find a solution to the problem arises in studies on casein kinase II (CK2). This kinase is known for being a highly conserved protein kinase that is ubiquitously distributed in eukaryotes, typically appears as a tetramer of two α and two β subunits. CK2 is constitutively active, has a role in multiple cellular functions and phosphorylates substrates in various pathways within a cell. It is also called the suppressor of apoptosis which means it inhibits the natural process of programmed cell death. The aim of the work was to show the connection between the apoptosis regulated by casein kinase II and the development of cancer cells.

**Keywords:**

apoptosis, cancer, CK2, tumorigenesis

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# COMPARATIVE ANALYSIS OF THE QUALITY OF EGGS FROM DIFFERENT SYSTEMS OF BREEDING (ORGANIC AND NON-ORGANIC)

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**A few words about the author:**

Alicja Ponder, PhD student from WULS-SGGW, Faculty of Human Nutrition and Consumer Sciences, Department of Functional, Organic Food and Commodities

**Abstract:**

The purpose of this study is a comparative analysis of the quality of eggs from different systems of breeding (organic and non-organic). Organic poultry farming is conducted in accordance with the requirements set out in legal regulations. These regulations impose restrictions on possible breeding, feeding and treatment techniques for birds and have been expanded to include the need to select native breeds and carry out farm repairs to ensure appropriate conditions. When running organic farms, rules on animal welfare should be followed. In organic feeding of poultry, plant feed and feed produced in accordance with the principles of organic farming should be used. In organic farming, it is forbidden to use feed from GMO. Scientific research shows that organic eggs have a higher content of omega-3 fatty acids and minerals than non-organic eggs. Organic eggs usually have a smaller weight than conventional eggs. The type of production affects the protein and yolk content in eggs.

**Keywords:**

organic eggs, organic farming, omega-3 fatty acids, minerals, yolk

# THE ROLE AND TASK OF ZOOLOGICAL GARDENS

**Maciej Miąsko* (1), Joanna Gruszczyńska (1), Patrycja Florczuk-Kołomyja (1), Arkadiusz Matuszewski (2)**

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**Abstract:**

In Poland their activity conduct 24 zoological gardens. On every garden are imposed specyfic obligations, resulted from national law and law which is connected with affiliation to EAZA and WAZA. The main role of zoological garden is conduct of animal raising of endangered species. The conditions made artificially by human, should correspond to their needs of life. The aim of breeding ex situ is conceiveing of population within species protection programmes, which will be implemented again or enriches the population of animals living in situ. In this branch, zoological gardens closely collaborate with scientific units, carrying out common researches in the natural environment and ex situ in their establishment. The connection of architecture and vegetation in the animals' exhibitions makes zoological gardens attractive places of rest and leisure. Zoological gardens attract the children and the youth, whose education about the natural environment and importance of particular species, is assisted by zoo. This education fixes on extending of knowledge about animals, their needs and ecosystem in which they live. Gaining that knowledge may contribute to change of awareness not only amongst the children and the youth, but also amongst adults. Unfortunately, despite many efforts from animal protection services, smuggling and animal trade, especially those which are protected by CITES is still continuing. Centres CITES at zoological gardens, are a rescue for confiscated animals.

**Keywords:**

zoo, animal breeding, CITES

# MECHANICAL STRESS INDUCTION IN PLANTS IN VITRO CULTURES

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**A few words about the author:**

I am nanobioengineer and student of biotechnology (currently). Besides, I'm member ExPlant Students Scientific Association and BioX Students Scientific Association. I like help and to progress. Therefore I'm volunteer in NANONET Foundation.

**Abstract:**

Micropropagation is characterized by the high efficiency and speed of multiplication, there's often a problem with the storage of the plants for a longer period in in vitro germplasm banks. Various methods to slow growth are applied, mainly focusing on media composition and temperature lowering. In agriculture and horticulture it's well known, that plants vulnerable to mechanical stress grow slower. The aim of our study was to investigate the effect of induction of mechanical stress in plants under in vitro conditions. Explants of Chrysanthemum×grandiflorum 'Polka', Streptocarpus×hybridus, Lilium L., representing a group of Asian hybrids, and Solanum tuberosum were cultured on MS medium without plant growth regulators for 12 weeks. Tested cultures in jars were placed in a laboratory shaker, a horizontal rotation with an amplitude of 6, 160 rpm was applied. Mechanical factor didn't affect significantly the growth and development of potato and chrysanthemum explants, thus the application of this factor isn't justified in these species to inhibit growth rates in in vitro germplasm banks. Surprisingly, the mechanical factor treated explants of Streptocarpus produced higher number of medium- and large-sized leaves as well as whole rosettes. Similarly, lily bulbs and scales regeneration was increased as affected by rotation. Thus, mechanical stress induction can be applied to laboratory plant production to enhance the multiplication rates of plants regenerating adventitious organs.

**Keywords:**

tissue culture, mechanical stress, growth, regeneration

# RESPONSE OF BLADDER CANCER CELLS TO ELEVATED OXYGEN LEVELS

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**A few words about the author:**

I am 1st year masters students of biotechnology at Cracow University of Technology Faculty of Chemical Engineering and Technology. This work was done in cooperation with Institute of Nuclear Physics, Polish Academy of Sciences, in Cracow.

**Abstract:**

Human urinary bladder cancer cells (HTB5) were exposed to increased oxygen levels for various periods of time up to 72 h. HCV29 non-malignant urothelial cells were used as the reference. The oxygen concentration was varied by decreasing CO2 amount from its optimum level of 5% down to 0.1% in the atmosphere for cell culture. Additionally, the cells were actively aerated by bubbling the test atmosphere directly into the PBS buffer. It was found that the cell surface area decreases under increasing oxygen levels, particularly after longer exposition time. The cellular elasticity was measured with the use of Atomic Force Microscopy by determining the Young's modulus. It appeared that HTB5 cancer cells had higher stiffness than the non-malignant HCV29 cells under elevated oxygen levels. The use of a fluorescent dye, able to specifically show the presence of Reactive Oxygen Species (ROS) in mitochondria, demonstrated that it is the HCV29 cells that produce more of ROS upon increasing the oxygen level. It is known from the literature that ROS cause DNA mutation that starts with guanine oxidation. In healthy cells, after oxidative stress has been stopped, 8-oxoguanine resulting from this oxidation, is replaced for guanine and 8-oxoguanine is ejected from the cell. Hence, the next step of the project will be checking for the presence of 8-oxoguanine in the culture media after exposing the cells to elevated levels of oxygen. This will be done by an electrochemical method.

**Keywords:**

Reactive Oxygen Species, oxidative stress, bladder cancer cells, AFM, 8-oxoguanine electroanalysis

# TECHNICAL SCIENCES

# ELECTROPOLISHING OF TITANIUM ALLOYS

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**A few words about the author:**

I am a PhD student in Materials Engineering at the Lodz University of Technology. My interests are involved with texturing and surface modifications by plasma methods, in order to improve material's properties for biomedical applications.

**Abstract:**

Currently, titanium alloys belong to group of metallic biomaterials, which are in demand, because of their high corrosion resistance, low density, mechanical strength and high biocompatibility in contact with living tissues of human organism. Moreover, the useable properties of these alloys can be further improved and modified by adequate operations of surface treatment. State of element's surface affects the implant- biosystem interaction. One of the parameters that have a significant impact on the connection quality of the titanium element with the surrounding tissues is the roughness, the level of which can be controlled, for example by electropolishing. This process is based on the electrolysis phenomenon and accompanying electrode processes. Unlike other surface treatments, it allows to obtain excellent anticorrosion properties, remove micro-stress, clean the surface, and enables polishing of areas inaccessible to mechanical methods. Material smoothing, by dissolving tops of micro-irregularities, occurs due to the presence of a "viscous layer" between the electrolyte and the passive part, which indicates much higher electrical resistance and viscosity. The effectiveness of electropolishing is conditioned by appropriate selection of parameters, including electrolyte composition, current density, temperature and duration of the process. According to literature review, satisfying results are obtained with mixtures based mainly on sulfuric and hydrofluoric acids.

**Keywords:**

electropolishing, titanium, titanium alloys, viscous layer, electrolyte

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# EVALUATION OF CHANGE IN ACCESS TO PARKING SPOTS IN VULNERABLE AREA IN CITY CENTER

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**A few words about the author:**

I am a doctoral student at Cracow University of Technology. My specialty is urban transport, parking policy and mobility.

**Abstract:**

Results of research made by foreign academics lead that increasing of parking spots in city center may result in a positive or negative way on traffic flow that is observed in an adjacent street network. Additional parking spots that in the beginning are empty may generate "induced traffic" - additional journeys which wouldn't have occurred with the lack of parking spaces. On the other hand, additional parking spots reduce the flow of cars which cruise in the network looking for an available parking spot - which occur overcrowding the adjacent street network. This speech will contain a description of methodology and results from research about consequences of change in access to parking spots in big cities downtown where occur a problem with the lack of parking places. Results of this research should give a response for a question: Which parking policy should be implemented in cities which face the problem with the lack of parking spaces – should they create new parking spaces or reduce traffic flow generated by journeys to the city center?

**Keywords:**

parking policy, cruising for parking, traffic flow

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# INTERNET WEBSITES PROVIDING SPATIAL INFORMATION FOR GEODESY AND CARTOGRAPHY

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**A few words about the author:**

I am a student of the second year of spatial planning. I develop my scientific passion in the Geo Gis Scientific Circle. I am interested in new technologies, such as GIS systems.

**Abstract:**

Spatial information has always accompanied people and is associated with the location of objects in the area. GIS systems allow for the presentation of various types of phenomena in the form of readable maps. Geoportals in which spatial information is published using an internet browser are very popular in recent years. In this type of websites, among others, WMS browsing service (standard for raster map sharing) and WFS download service (data download standard). Thanks to this possibility, the user selects interesting layers and analyzes selected issues in one place, which is a huge convenience. There are many geoportals that contain data on geodesy and cartography. In each site the number of metadata is varied, and access to them is available to any user with access to the Internet. The portals are also used by officials and investors planning investments. Geoportals are additionally equipped with many tools to improve data analysis.

During the paper the basic concepts of spatial information systems and geoportals that present information on geodesy and cartography will be discussed. In addition, desktop software will be presented, in which it is possible to view spatial information from the discussed geoportals. It is worth introducing new technologies, such as GIS systems, to environmental research. Thanks to this type of software, you can perform a variety of different analyzes that give a different view of the studied phenomenon.

**Keywords:**

geoportal, WMS, geodesy and cartography, GIS

# THE SCREEPS APPLICATION – THE USE OF GAMIFICATION IN LEARNING JAVASCRIPT PROGRAMMING LANGUAGE

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**A few words about the author:**

I'm the chairwomen of scientific circle Reset ATH on University of Bielsko-Biala. I study computer science. My scientific interests are pedagogics, computer graphics, educational games and programming learning. My profession is graphic designer.

**Abstract:**

My lecture is about the open source MMO RTS sandbox for people who want to learn programming as well as professional programmers. The game was released in 2016. As a player, you control your creeps colony by writing code in JavaScript. You have access to the game 24 hours a day, 7 days a week. In the world of Screeps, you meet other players who are equal to you. In my presentation, I will refer to the phenomenon of gamification and use it for educational purposes. In the case of Screeps, this will be programming. The use of gamification in everyday activities allows to obtain much better results and maintain a high level of motivation.

**Keywords:**

programming, gamification, game, JavaScript

# FUNCTIONAL PROGRAMMING PARADIGM

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**A few words about the author:**

I am studying Computer Science at Łódź University of Technology. I am working as a JavaScript developer I'm keen looking forward to finding the best solutions to different problems.

**Abstract:**

This presentation informs about the functional programming paradigm, its assets and shortcomings. It also briefly touches the real-world problems which happen to be easily and perfectly solved by this pattern.
As innovative as it is, there are also few shortcomings in this concept as well, hence the presentation depicts those as well.

**Keywords:**

programming, JavaScript

# 3D SCANNING

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**A few words about the author:**

I study computer science on University of Bielsko-Biala, my science area is Artificial Intelligence. Also, I work as .Net Developer in Evatronix S.A, where I create desktop application for scanning and calibration scanner 3D.

**Abstract:**

My lectures is about converting real object to virtual model 3D using of process known as scanning 3D. This process is based on structural light and stereo camera, also many computers' algorithm to image processing. In effect, we can get very detailed computer model. The use of these 3D models is various - reverse engineering, measurement, printing 3D etc. Home user model 3D can visualise sold object for better overview.

**Keywords:**

ccanning 3D, transofrmation, triangulation, structural light

# INFLUENCE OF AN ALUMINISING ON THE AMOUNT OF RETAINED AUSTENITE IN THE LAYER AFTER A LOW PRESSURE CARBURIZING

**Paulina Kowalczyk*, Bartłomiej Januszewicz**

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**A few words about the author:**

Paulina Kowalczyk – graduated from the Lodz University of Technology. Currently, a PhD student at the Faculty of Mechanical Engineering, major in Materials Science. Specializes in the field of the surface engineering.

**Abstract:**

Final martensitic transformation temperature has crucial impact on the amount of the retained austenite, which depends on the alloying elements in a steel and an amount of carbon. Some elements, including carbon content above 0.6%, lower final temperature of the martensitic transformation below 0°C, result in an increased contribution of the maintained austenite. Enrichment of the surface layer in aluminum allows to raise the end temperature of the martensite transformation to the higher values and reduce the amount of austenite in structure. Results include control of the diffusion layers produced due to the aluminum content and the presence of precipitates in the structure as well as the mechanical properties of the layers.

**Keywords:**

low pressure carburizing, retained austenite, aluminising

# DIFFUSION LAYER WITH INCREASED CORROSION RESISTANCE PRODUCED USING THE LOW PRESSURE CARBURIZING AND CHROME PLATING

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**A few words about the author:**

Paulina Kowalczyk – graduated from the Lodz University of Technology. Currently, a PhD student at the Faculty of Mechanical Engineering, major in Materials Science. Specializes in the field of the surface engineering.

**Abstract:**

Carburized layers have many advantages, including high fatigue resistance, high abrasion resistance and hardness while maintaining a ductile core. Low pressure carburizing is characterized by high purity and very good efficiency. However, when process is finished, the smaller elements have a very active surface that quickly corrodes under atmospheric conditions. Following studies include a beneficial effect on the improvement of the corrosive properties during austenite enrichment with chromium, combined with the low pressure carburizing while preventing the formation of precipitates. Presented results of the research include an effect of the chrome plating on anticorrosion properties as well as the control of the carburized layer in terms of morphology and mechanical properties.

**Keywords:**

low pressure carburizing, chrome plating, corrosion resistance

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# MATHEMATICAL MODELLING OF THE ANTI-SURGE SYSTEM OPERATION

**Andrzej Jaeschke**

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**A few words about the author:**

PhD student at Institute of Turbomachinery. Interested in numerical analysis, anti-surge systems, shape optimization

**Abstract:**

Radial compressors are widely used in many branches of industry. Their failure can be a cause of serious financial losses. The occurrence of the surge phenomenon i one of reasons that can lead to failure of compressor. Therefore the prevention against them is indispensable. A variety of anti-surge systems were proposed. Due to high costs of experimental validation of their operation a proper simulation techniques had to be developed. This paper presents an overview of available simulation techniques that can be used for this validation together with an example of application of one of the to the Greitzer model based quick response valve anti-surge system is presented.

**Keywords:**

numerical analysis, surge, Greitzer model, radial compressors

# EMULSION TRANSPORTATION IN POROUS BED

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**A few words about the author:**

Chemical Engineer interested in Environmental Protection, Cosmetic Industry and Emulsion Breaking and Formation

**Abstract:**

Dispersed systems can be in form of gas, liquid or solid and they are always distributed in a continuous phase. This study focused on liquid-liquid system called emulsion. Emulsions can either be water-in-oil (W/O) or oil-in-water(O/W) systems depending on which phase is dispersed.
Emulsions transportation in porous media appear in many industrial areas including bioremediation and enhanced oil recovery (EOR). As an example, emulsification of edible oil prior to injection into groundwater as a substrate for enhanced bioremediation improves spatial distribution in contaminated zone. Generally knowledge of emulsion behaviour during flow through porous media can influence on reduction of cost connected with remediation of soils.
In literature not very many positions focus on modeling of emulsion flow through porous media, therefore there is a need for experiments explaining transport phenomena of oil-in-water emulsions in porous media.
The experiments conducted covered over-pressure process of emulsion and water flow in porous media. In study we used microspheres, tap water and emulsifier Rokacet obtained from PCC Rokita S.A. Porous bed length varied from 0.3[m]. The O/W emulsions based on edible oil hed concentration of 10%. In the study, we tried to examine the influence of the fraction size as well as migration process history on permeability of porous bed.

**Keywords:**

emulsion, flow in porous media, modelling

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# BREAKING OF CUTTING OIL EMULSION WITH DIFFERENT DEMULSIFIERS

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**A few words about the author:**

Chemical Engineer, interested in Environmental Protection. He is pursuing PhD at the Lodz University of Technology in area of Environmental Engineering.

**Abstract:**

Metalworking fluids (MWF) are engineering materials that are being used in metal working processes. In manufacturing activities MWF used for material removal processes are known as cutting fluids. The most popular MWF are oil-in-water emulsions.
After being used these fluids become less effective because of their thermal degradation and contamination by various substances. Therefore they must be replaced periodically, generating a waste stream called "spent cutting oil".
It is desirable then to separate phases in this stream, in order to minimize the disposal costs and negative impact of fluid disposal on the environment. Spent metal cutting fluids are considered as hazardous wastes and must be collected by special companies that are allowed to utilize tham.
The environmental impact of metal working wastes may be severe. Heavy metals, acids, surfactants and oils are all highly toxic to environment. Major water life degradation may results from the direct discharge of insufficiently treated metalworking fluid wastes.
In the presented work we describe the efficiency of treatment of cutting emulsions with chemical demulsification with usage of different demulsifiers. The emulsion was prepared with Emulgol-ES12 self-emulsyfing oil delivered by Orlen S.A. In research we checked the feasibility of demulsifiers with usage of TurbiscanLab® apparatus that is turbidimetric device.

**Keywords:**

demulsification, cutting oil emulsion, MWFs

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# METHODOLOGY OF PREPARATION OF POWDER COMPOSITE LaNi5-TYPE HYDRIDE ELECTRODES

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**A few words about the author:**

I graduated from Łodź Univesity, Faculty of Chemistry. I am a PhD student in Częstochowa University of Technology. I am interested in electrochemistry, hydride electrode and high entropy alloys.

**Abstract:**

The very important technological problem of hydride electrode is to provide them satisfactory porosity and particle cohesion during long- lasting charge/discharge tests. One of undesirable consequences of long lasting charge/discharge processes is progressive corrosion degradation of electrode material, consisting in irreversible oxidation of lanthanum, particles pulverization and worsening of electrical contact between particles. The mentioned phenomena deteriorate the functional properties of hydride electrodes. In this work, commercially available hydrogen storage LaNi4.5Co0.5 alloy was used as the active material. Small pieces of mechanically crushed active material were ground in the ball mill, then sieved to separate 20-50 μm fraction. Each hydride composite electrode contained about 30 mg of active material (weighed with an accuracy of ±0.02 mg), representing 85% of its mass. In order to ensure good plasticity, conductivity and optimal porosity of the electrode, 5 mass % of porous graphite and 10 mass % of PVDF were thoroughly mixed with the active material and some addition of acetone. After homogenization and acetone evaporation the components were pressed monoaxially at a pressure of 50 bar. Finally, obtained pellets were heated in Ar atmosphere at 105°C during 1 hour. To prepare electrodes for long lasting charge/discharge tests, the pellet sides were isolated with epoxy resin, whereas silver glue mixed with Ni-powder (1:1) was applied as current collector.

**Keywords:**

hydride electrode, hydrogen storage alloy, porous active material

# THE INFLUENCE OF AIR HUMIDITY ON CONVECTIVE COOLING CONDITIONS OF ELECTRONIC DEVICES

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**A few words about the author:**

I am PhD student at the Lodz University of Technology in Faculty of Electrical, Electronic, Computer and Control Engineering. My scientific interest are nondestructive testing using thermography and simulation of heat transfer processes.

**Abstract:**

The aim of this presentation is to show the impact of ambient air humidity on the efficiency of heat sink operation. It was observed that increased air humidity enabled higher power dissipation in a transistor used as a test device, without increasing its junction temperature. The presentation contains theoretical and practical aspect.

**Keywords:**

heat dissipation, air humidity, convection cooling, infrared camera

# MEASUREMENTS OF INDUSTRIAL PIPELINES

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I am PhD student at the Lodz University of Technology in Faculty of Electrical, Electronic, Computer and Control Engineering. My scientific interest are nondestructive testing using thermography and simulation of heat transfer processes.

**Abstract:**

The aim of this presentation is to show selected methods available in the literature used for detection of abraded walls in industrial pipelines. The author's work was also presented during presentation.

**Keywords:**

pipeline, defect detection, infrared thermography

# NANOIMPACT – MACROEFFECT. WITHOUT FEAR ABOUT SUPERPARAMAGNETIC IRON (II, III) OXIDE NANOPARTICLES

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**A few words about the author:**

Zuzanna Świrska is a PhD student of the Materials Engineering (LUT Poland). Her future is associating to the passion for chemistry and nanotechnology. All experiences and findings from the journeys have been made her new vision of the science.

**Abstract:**

Current works on SPIONs synthesis, modyfication and functionalization methods are taken under consideration by many worldwide research centres. Received particles might be widely used for bio- medical area in case of their superparamagnetic features which show up below size of 20 nm. According this, they play crucial role for the bio- separation, diagnosis, drug delivery and cancer treatment patterns. Properly modyfied NPs indicate high and safe affinity to human cells.

**Keywords:**

superparamagnetism, magnetic nanoparticles, modification, bio- medicine

# THE IDEA OF NEW URBANISM IN CREATING TRANSPORTATION SYSTEMS IN PROCESS OF RESTORATION AND REVITALIZATION OF URBAN AREAS

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**A few words about the author:**

PhD candidate at Cracow University of Technology. Interests: urban planning, public transport, graphic design.

**Abstract:**

The introduction shows the importance of transport for cities and their residents and a gradual change in the approach to shaping the urban transport system. The authors refer here to the postmodern idea of New Urbanism. This trend is characterized by a return to the traditional, historic composition of cities with the priority treatment of non-motorized members of the movement while marginalizing passenger cars. The implementation of the New Urbanism is shown on examples of revitalized urban areas. An example of the implementation of the idea of New Urbanism in shaping the spatial structure and transport system of the urban area which was revitalize is Dresden. An important part of the presentation is the project of restoration and the concept of changes in transport services on Retoryka street and Kossaka square in Krakow.

**Keywords:**

restoration, revitalization, New Urbanism, old town

]

# POSTERS

# A REVIEW OF THE APPLICATIONS OF OXIDISED AND REDUCED GRAPHENE AS ELEMENTS OF SENSORS

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**A few words about the author:**

I am a Ph.D. student in the third year. I investigate the surface properties of graphene derivatives by inverse gas chromatography.

**Abstract:**

In this work, on the basis of information available in the literature, we made detailed characteristics of the properties of graphene derivatives and the applications of these materials as elements of sensors.
The unique properties of oxidised and reduced graphene cause a great interest in the use of these materials, especially in electrochemistry. The most important of these properties are the large surface area (about 2600 m2/g), high mobility of electrons and the possibility of surface functionalization. Therefore, oxidized and reduced graphene can be applied to the construction of electrochemiluminescence sensors, electrochemical sensors with a surface acoustic wave and biosensors.

**Keywords:**

oxidised graphene, reduced graphene, sensors

# CCR5-Δ32 GENE POLYMORPHISM AND THEIR POSSIBLE ASSOCIATION WITH BREAST CANCER – PRELIMINARY REPORT

**Patryk Rosa* (1), Martyna Jankowiak* (1), Agata Maciejewska (1), Maciej Jankowski (1), Anna Dobrzańska (1), Bartosz Słomiński (2), Maria Skrzypkowska (2), Janusz Siebert (3), Jacek Zieliński (4)**

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*(2) Department of Immunology, Faculty of Medicine*
*(3) Department of Family Medicine, Faculty of Medicine*
*(4) Department of Oncologic Surgery, Faculty of Medicine,*
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**A few words about the author:**

SKN przy Zakładzie Immunologii is the student special interest group at Medical University of Gdańsk.

**Abstract:**

BACKGROUND AND AIMS:

Chemokines play a crucial role in breast cancer tumorigenesis and progression. Several studies have addressed the potential contributions of the CCR5-Δ32 polymorphism to breast cancer (BC) susceptibility but association is still unknown. In the present study we examined the association between the CCR5-Δ32 polymorphism and the risk of BC.

METHODS:

We examined 120 Caucasoid patients with BC and 120 healthy age- and sex-matched controls. The analysis concerned CCR5-Δ32 polymorphism as well as concentrations of serum pro-inflammatory marker (CRP) and pro-angiogenic factors (VEGF, angiogenin).

RESULTS:

The Δ32 allele frequency was significantly higher among BC patients in comparison with healthy individuals (0.200 vs. 0.112). In order to assess the hypothesis that the Δ32 allele is a marker of increased risk of BC, the odds ratio (OR) was calculated: Δ32 versus non-Δ32, OR = 2.09 (1.17 – 3.71), p = 0.01, which was significant. We also found that Δ32 carriers had increased serum concentrations of CRP (p = 0.04) than holders bearing wild type genotype. Moreover, Δ32 bearing patients had also increased serum concentrations of pro-angiogenic factors, however these associations were not significant.

CONCLUSIONS:

The findings of our studies suggest that the CCR5-Δ32 polymorphism is associated with BC and the Δ32 allele may affect the risk of BC. Further studies on a larger sample size are needed to confirm our findings.

**Keywords:**

breast cancer, CCR5-Δ32 polymorphism

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# NEUROBIOLOGICAL SUBSTRATES OF ANXIETY – GASTROINTESTINAL DISORDERS, AND MENTAL DISORDERS, THE MUTUAL CORRELATION

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**A few words about the author:**

I am a clinical dietitian. Currently I am a PhD student. I am interested in Hashimoto's disease and the food compound with the intestines.

**Abstract:**

Gastrointestinal disorders often coexist with mental disorders such as reduced mood, reduced motivation, impaired cognitive functions, but also anxiety, depression and ADHD. The reason for this association may be the condition of the intestinal microbiome and the gut-brain axis, the connector of which is the vagus nerve. Dysbiosis or inflammation within the intestines causes the transport of pro-inflammatory cytokines or neuroendocrine signals through the intestinal nervous system (ENS). On the other hand, exposure to severe stress, anxiety or trauma is manifested by physiological symptoms, especially disorders of digestive system, bowel function and its microbiome. This indicates a two-way, common path between visceral organs, and the brain and central nervous system. A review of the scientific literature emphasizes the impact of microbial manipulation on the activity of neuroendocrine anxiety pathways.

**Keywords:**

gut-brain axis, microbiome, anxiety, depression, intestinal disorders

# RALSTONIA SOLANACEARUM – RALSTONIA SOLANACEARUM – CRUCIAL DANGER FOR POTATO CULTIVATION IN POLAND

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**A few words about the author:**

I'm the student of Biotechnology on Nicolaus Copernicus University. I'm very fascinated about the cell biology. Currently I'm taking part in some research which concern the role of nuclear retention in the regulation of gene expression.

**Abstract:**

Ralstonia solanacearum is a quarantine bacteria, which contributes to the disease formation of potato. For the first time the presence of this bacteria in Poland was reported in the autumn of 2014. This phytopathogen probably came to Poland from the tropical regions, where this bacteria is common. R.sol. represent crucial danger for the agriculture in our country, because it attacks potato cultivation. Over recent years, there has been a decline in the number of potato crops in Poland. Despite this, potato crops still occupy the third place in the crop structure, and thus constitute large part of modern agriculture. This bacteria may be transmitted with infected seedlings or soil. It also spreads during irrigation with water from drainage channels. Therefore, it is extremely important to constantly monitor the waters and other potential vectors for the presence of this pathogen. In the case of ignoring these activities, this pathogenic bacteria could rapidly develop, which consequently would translate into huge losses in agriculture. The National Inspection of Plant and Seed Protection (PIORiN) conducts research on samples of potato bulbs being farmed material, potato bulbs dedicated for export, as well as commodity potatoes. In addition, surface water samples and samples from sewage farm are analyzed. In order to identify this pathogen, a strictly defined procedure is used. This procedure includes several methods of identifying this pathogen for its reliable assessment.

**Keywords:**

phytopathogenic bacteria, potato crops, quarantine organism, identification methods,

# PREPARATION AND CHARACTERISATION OF ERNARY AL2O3-NI-CU COMPOSITE SYSTEMS

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**A few words about the author:**

Student of Master's Studies at Warsaw University of Technology, interested in composite materials

**Abstract:**

Ceramic – metal composites are the group of materials that have properties of both ceramic and metal. In recent years we observe the increasing interest of this group of materials and its application possibilities. Hybrid composites seem to be the promising group of the cermets . They contain more than one reinforcing phase. Furthermore, final phase structure could be formed as a result of the reaction between components. One of the methods of forming ceramic – metal composites is slip casting. This method involves preparing the slurry from ceramic and metallic powders with solvent and plasticizers. The slurry is cast to the porous mold and then compacting due to the capillary forces.
In this study ternary Al2O3 – Ni – Cu composites samples were formed using slip casting method. The obtained samples were characterized.
Samples were sintered. Types of phases in the material were identified by XRD analysis. Theoretical density of the samples was measured via Helium pycnometer and relative density was measured using Archimedes method (according to the norm PN-76/6-06307). The composites obtained were characterized by macro and microstructural examination. Microstructures of the samples were studied using the scanning electron microscope (SEM). There were no visible defects on the surface of the samples. Microstructural observation showed homogenous phase distribution in the material.

**Keywords:**

hybrid composites, ternary Al2O3 – Ni – Cu system, slip casting

# THE USE OF GIS TOOLS FOR CREATING TOURIST MAPS

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**A few words about the author:**

I am a student of the first year of spatial planning. I develop my scientific passion in the Geo Gis Student Research Group.

**Abstract:**

GIS tools allow us to create tourist maps in interesting way. Recently, it is becoming more and more popular to put tourist maps on websites. Such maps help potential tourists find interesting places in the area which are worth visiting as well as to read a brief description of them.
During the presentation of the poster, the results of the creation of an interactive tourist map using the GIS tools will be presented. Geographic information systems have found many uses and they are an essential tools for many professional groups. They facilitate data storage and quick access to them. They also allow us to quickly perform multivariate analysis of spatial data and their graphic presentations. However, they can play an equally important role in promoting Polish tourism and more. The Internet, in fact gives the opportunity to reach a broader and more diverse audience than using traditional advertising methods. The numerical tourist map provides the potential tourist with a lot of information, can help him find places that meet his expectations, and also allows him to book and purchase accommodation and other tourist services via the Internet. The currently offered GIS used in interactive maps is usually not a single package since it contains many solutions. GIS not only enables us to carry out various types of spatial, quantitative and qualitative analysis, but in conjunction with the Internet can also be a source of effective advertising of tourist services.

**Keywords:**

tourism, GIS, maps

# MICROSCOPIC, SEROLOGICAL AND MOLECULAR TECHNIQUES USED IN DIAGNOSIS OF MALARIA

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**A few words about the author:**

2nd year student of medical analytics

**Abstract:**

Malaria is one of the most severe parasitic diseases in the world. According to Centers for Disease Control and Prevention, in 2016 an estimated 216 million cases of malaria occurred worldwide and 445 000 people died. In Poland, up to several dozen cases of imported infection are reported yearly. In humans, malaria is caused by protozoans belonging to Plasmodium genus: P. falciparum, P. vivax, P. ovale, P. malariae and P. knowlesi. The disease is transmitted by female mosquitoes, including Anopheles species. An invasive stage is a sporozoite, injected with the mosquito's saliva into the blood of the next host.
Plasmodium is found primarily in red blood cells. It is detected by examining thick or thin blood smears. These tests enable Plasmodium species recognition and invasion intensity evaluation. Additionally, there has been a quick, immunochromatographic strip test developed. The test includes detecting parasites antigens from drawn blood lysate with monoclonal antibodies placed on the strip. There are also molecular methods used, such as PCR, in order to detect Plasmodium DNA. Under polish conditions one should suspect malaria in every feverish person, which has resided in an area with high risk of infection.

**Keywords:**

malaria

# TUNGA PENETRANS-MORPHOLOGY AND CLINICAL PICTURE

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**A few words about the author:**

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**Abstract:**

Tunga penetrans belongs to the order of fleas from the family Hectopsyllidae. It's belongs to the smallest representatives of this order and the length doesn't exceed 1.3 millimeters. Only female is parasites for human. Male is free living form.
Tunga penetrans occurs in America, Africa, India and China. It occurs mainly in the sand of coastal beaches, stables and other utility rooms.
It attacks human skin, mostly hands and feet (near the nails). Tunga penetrans penetrates the skin, at the same time it increases its size. It settles in granular layer of the epidermis, leaving the abdomen outside. It causes a disease called tungiasis.
Along with the growth of the parasite, it comes to occur an inflammation and thrust on tissues, what causes increasing pain In limb. In extreme cases it could cause necrosis and necessity of amputation of fingers. In the place of invasion on the skin, can appear sore and oedema. Moreover skin In that place is exposed on mechanical damage and secondary infection. Another threat it is a fact that Tunga penetrans could be carrying pathogens such as pest and tetanus.
Parasite that is found in the skin, remove with the aid of needle, forceps or using surgical procedur es. In cases of secondary bacterial infections should be also used antibiotic therapy.

**Keywords:**

flea, Tunga Penetrans

# THE POSSIBILITY OF USING PMCT IN CPR-RELATED INJURIES

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**A few words about the author:**

I am a 4th year medicine student and the president of Forensic Medicine Academic Circle

**Abstract:**

Cardiopulmonary resuscitation (CPR) is the basic emergency procedure in life-threatening situations, but nonetheless carries the risk of a number of injuries. The most common are chest injuries, including multiple rib and sternum fractures. Their occurrence after resuscitation depends on number of factors, such as: age, sex, experience of the person conducting CPR and the duration of CPR. In addition, internal organs may be damaged, including the heart, lungs or liver with the presence of pericardial, pleural or peritoneal haemorrhage. This type of injury can significantly hinder the determination of the cause of death. To determine it with greater accuracy it is possible to use post-mortem computed tomography (PMCT) as a supplementary method to autopsy. However, low tissue resolution and limitations in imaging of soft tissues makes it impossible to use PMCT as the only research method. The purpose of this poster is to present typical injuries resulting from CPR, determine their frequency and contributing factors as well as the possibility of using PMCT to display them.

**Keywords:**

CPR, chest injury, post-mortem computed tomography, PMCT, rib fracture

# VERTICALLY TRANSMITTED PARASITIC INFECTIONS

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**A few words about the author:**

Student of the second year of medical analytics.

**Abstract:**

Most of known parasites are associated with infection through gastrointestinal tract, circulation or skin. However there are another possible ways of transmission, like fetal infection during pregnancy, through placenta.
Parasitic infection may pose threat to pregnant woman, but might also affect fetus health and maintenance of pregnancy. Transmission from mother to fetus may occur in case of infection with Trypanosoma genus. It leads to the occurrence of congenital Chagas disease. The disease is manifested by low birth weight, defects of neurological system and heart, caused by trypanosomiasis and may lead to death in short time after labour.
Different disease, dangerous for child is caused by invasion of Plasmodium genus. Mother's infection may cause damage of placenta and as a consequence lead to fetal death or preterm labor. Furthermore, children can be born with congenital malaria.
There is possibility of fetus infection with tachyzoites of Toxoplasma gondii. Parasites get into child's circulation with mother's blood through the placenta. Disease may include neurological system, organs of sight and hearing. In case of pregnant woman contagion, there is a risk of miscarriage.
In view of the above, prophylaxis and quick diagnostic is important during pregnancy, especially in case of occurrence of alarming symptoms, promptly taken treatment can lower the risk of child's illness.

**Keywords:**

parasitic infections, vertical transmission, Plasmodium spp., Toxoplasma gondii, Trypanosoma spp.

# MICRORNA IN DIAGNOSTICS AND THERAPY OF MELANOM

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**A few words about the author:**

I am a student of biology and biotechnology. I am study at the Department of Biology and Environmental Protection of the Nicolaus Copernicus University in Toruń.

**Abstract:**

MicroRNAs are short, non-coding RNAs that have very different functions in cells. Their expression occurs both in unchanged cells, where it is responsible for the course of physiological processes, as well as malignant cells. During the development of tumors was observed abnormal microRNA expression. Tests on tissues and cell lines indicate significant changes in the expression of miRNAs in development of various cancers. MicroRNAs affect the mRNA and the amount of protein produced in the cell. In studies that check the expression of microRNAs in different stages of melanoma development examine the possible placement of the particular miRNA. The microRNA acts on important signaling pathways in cells and through changes in the level of expression can be a suppressor or oncogene of cancer cells. The precise knowledge of the mechanism of action of microRNAs in the development of melanoma, and the effects of these molecules on the formation of this cancer in the future could allow the use of the miRNA targeted therapy. Unfortunately, current studies indicate only possible therapeutic potential of these molecules. The use of RNA expression profiles in the future could be used to determine the severity of the disease and to more easily diagnose difficult skin changes.

**Keywords:**

microRNA, melanoma, epigenetic, targeted therapy, regulation of gene expression

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# CHEMICAL COMPOSITION OF EDIBLE POTATO TUBERS DEPENDING ON FERTILIZATION

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**A few words about the author:**

I have graduated from Wroclaw University Of Environmental and Life Sciences in 2015 with master engineer degree. I began 3rd degree study in 2016. I specialize in potato fertilization.

**Abstract:**

Potato intended for edible purposes should be characterized by a good yield with the best qualitative features. The quality of tubers is influenced by their chemical composition, which varies depending on the genotype of varieties, the impact of environmental and agrotechnical conditions during vegetation. These factors affect the metabolism of the plant, which shapes the chemical composition of tubers. The purpose of the work was to determine the effect of foliar nutrition with magnesium and boron sulfate on the content of the chemical composition of the Vivaldi variety. Potato cultivation was located on the soil of bonitation class IIIa of the good wheat complex. In spring, NPK "Polifoska 6" was fertilized in an amount of 300 kg•ha-1 and "Mocznik" in a dose of 150 kg•ha-1. Foliar fertilization was applied during flowering and two weeks after the first treatment. The factor was two doses of foliar fertilizers applied twice during the growing season. Foliar fertilization significantly reduced the content of dry matter and starch in tubers. Fertilization with magnesium sulphate and boron, regardless of the applied dose, increased the nitrogen content in tubers and leaves, whereas the content of phosphorus, potassium, boron, magnesium, calcium and sodium in the effect tubers was not fertilized with foliar fertilization.

**Keywords:**

potato, foliar fertilization

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# THE SIZE OF TUBERS DEPENDING ON NATURAL AND MINERAL FERTILIZATION

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**A few words about the author:**

I have graduated from Wroclaw University Of Environmental and Life Sciences in 2015 with master engineer degree. I began 3rd degree study in 2016. I specialize in potato fertilization.

**Abstract:**

The size of tubers and their shape is important for each potato market, no matter if you are talking about edible potatoes, seed potatoes or for processing. Everything a farmer can do to extend the period of maintenance of a healthy green leaf on potato bushes will increase the average size of tubers. Properly balanced fertilization is an important way to increase the size of potato tubers. Nitrogen, phosphorus, potassium, calcium, magnesium and manganese have a significant effect on the size of tubers. The aim of the study was to determine the effect of natural and natural fertilization in combination with the mineral on the structure of tubers of the edible and starch variety. A two-factorial field experiment was established on soil IIIa characterized by average nutrient abundance. The research revealed a significant influence of the genotype of varieties and the applied fertilization on the size of tubers.

**Keywords:**

potato, fertilization, size of tubers

# EFFECT OF FERTILIZATION ON POTATO YIELDING

**Małgorzata Cieciura-Olczyk**

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**A few words about the author:**

I have graduated from Wroclaw University Of Environmental and Life Sciences in 2015 with master engineer degree. I began 3rd degree study in 2016. I specialize in potato fertilization.

**Abstract:**

The natural source of ingredients is a mineral and organic substance of soil. Another source that enriches the soil with macro- and micronutrients are natural, organic and mineral fertilizers, and their use should take into account soil fertility, expected yield level and varietal requirements. In the conducting experiment, the effect of fertilizing with manure (15 t•ha-1) and manure in combination with the minerals of edible potatoes - Tajfun, starch - Kuras was analyzed. The research revealed a significant influence of the genotype of cultivars and the applied fertilization on yielding. Higher yield has developed the Tajfun variety compared to the Kuras variety. The yield was also modified by the fertilization applied. Both varieties cultivated on natural fertilizers combined with mineral fertilization developed higher crops by about 8 t•ha-1 compared to natural fertilization.

**Keywords:**

potato, mineral fertilization, natural fertilization

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# CRYPTOSPORIDIUM PARVUM-ONTOGENESIS, PATHOGENESIS, CLINICAL MANIFESTATION AND DIAGNOSTICS

**Anna Kamińska*, Kamila Kędzior, Natalia Krzyżanowska, Małgorzata Florek, Joanna Koszyczek**

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**A few words about the author:**

2nd year student of medical analytics

**Abstract:**

Cryptosporidium parvum is a protozoan present in humans and in animals. It parasitizes in the small intestine, but it has also been found in the cells of the alveolar epithelium, bile ducts and conjunctiva. Trophozoites of C. parvum adhere to enterocytes creating a characteristic vacuole by fusion of the outer microvillar membrane and the epithelial plasma membrane, where the parasite lives and undergoes multiplication. In 1999, the CDC included C. parvum in category B on the list of biological agents that can be used to make biological weapons.
C. parvum, during the invasion, causes atrophy of the intestinal villi and overgrowth of crypts as a result of destroying enterocytes, thereby causing a disease called cryptosporidiosis. The most frequent clinical symptom is watery diarrhoea and sometimes nausea, vomiting, abdominal pain and fever. In immunocompetent people, the disease is asymptomatic or with little intensity. In immunocompromised patients, the course of the disease is much more serious and can lead to death. Cryptosporidiosis is more common in the children, the elderly, people with congenital or acquired immune deficiencies and subjected to immunosuppressive therapy. In the diagnosis of C. parvum, microscopic techniques are used, where oocysts are sought in specimen of stool, sputum or bile. It is necessary to use acid-resistant dyes. Furthermore, ELISAs tests with antibodies against the sporozoite antigens and immunofluorescence microscopy are used.

**Keywords:**

cryptosporidium parvum, parasite

# NETWORKING AS A WAY TO EXCHANGE KNOWLEDGE ON THE EXAMPLE OF BESKID IT ACADEMIC DAY 2018 CONFERENCE

**Anna Gałuszka**

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**A few words about the author:**

I'm the chairwomen of scientific circle Reset ATH on University of Bielsko-Biala. I study computer science. My scientific interests are pedagogics, computer graphics, educational games and programming learning. My profession is graphic designer.

**Abstract:**

In recent years networking is very popular, especially among IT employees. It is a process of knowledge exchange, mutual support and sharing of good practices, most often in an informal atmosphere. On my poster I will present the advantages and disadvantages of networking on the example of Beskid IT Academic Day 2018. It is a nationwide conference gathering both experts and newbies from the IT industry. Over 600 participants took part in the 2018 edition. The event takes place at the University of Bielsko-Biala and is organized by the scientific circle ATH Reset. During the presentation, the results of the survey conducted among the participants of this event will be presented.

**Keywords:**

networking, conference, IT industry, knowledge exchange

# BIO-BUILDING – TECHNOLOGY OF STRAW BALE WITH CLAY AND PERCH

**Robert Skarzyński**

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**A few words about the author:**

I'm a student. I'm interested in new solutions that are often unpopular. I try to find solutions to various problems in such a way to minimize interference in the natural environment.

**Abstract:**

The poster covers the problem of ecological construction - technology of straw bale with clay and perch. The technology of straw bale with clay and perch originates from the tradition of clay buildings and it is its contemporary development. The use of pressed straw cubes occurred at the end of the 19th century in Nebraska in the USA - due to the lack of structural timber. This form of construction recurred only in the last twenty years in the USA and Europe, mainly due to the increasing need to protect the environment and energy crisis. Additionally, modern technical solutions have been introduced, which make the buildings built in this technology comfortable to live in, safe and most importantly friendly for both people and the environment. More information about this technology is on the poster.

**Keywords:**

bio-building straw bale clay perch

# NEURONAL CORRELATES OF FALSE MEMORIES IN PEOPLE WITH DIFFERENT CHRONOTYPES – ONE-CASE FMRI STUDY

**Anna Ceglarek* (1), Jeremi Ochab (2), Magdalena Fąfrowicz (1), Tadeusz Marek (1)**

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**A few words about the author:**

I am a Master's student in neurobiology. I'm interested in the processes of decision-making and emotions in the human's brain.

**Abstract:**

The circadian rhythm influences human's behavior. Many previous studies have shown that performance of cognitive tasks can change according to the time of a day. False memories are understood in terms of mistakenly recalling and recognizing stimuli, that were not presented during the memorizing phase of the task. Neural correlates of memory processing in people with different chronotypes were invastigated. We choose three participants with the most extreme morning and evening chronotype according to the Chronotype Questionnaire and polymorphism of Per3, one of the clock genes, using machine-learning.The working memory task based on the the DRM (Deese–Roediger–McDermott) paradigm was performed. During retrieval of lure stimuli is observed increased activation of posterior cingulate and superior part of the orbitofrontal cortex in participants with morning chronotype and increased activation of precuneus and medial part of the orbitofrontal cortex in participants with evening chronotype, what might explain different memory processing in this two research groups.

The project is supported from the National Science Center (NCN) - 2013/08/M/HS6/00042.

**Keywords:**

false memories, chronotype, machine-learning, fMRI

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# RESTORATION AND THE CONCEPT OF CHANGES IN TRANSPORT SERVICES ON RETORYKA STREET AND KOSSAKA SQUARE IN KRAKOW

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**A few words about the author:**

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**Abstract:**

The introduction shows the importance of transport for cities and their residents and a gradual change in the approach to shaping the urban transport system. The authors refer here to the postmodern idea of New Urbanism. This trend is characterized by a return to the traditional, historic composition of cities with the priority treatment of non-motorized members of the movement while marginalizing passenger cars. The implementation of the New Urbanism is shown on examples of revitalized urban areas. An example of the implementation of the idea of New Urbanism in shaping the spatial structure and transport system of the urban area which was revitalize is Dresden. An important part of the presentation is the project of restoration and the concept of changes in transport services on Retoryka street and Kossaka square in Krakow.

**Keywords:**

restoration, revitalization, New Urbanism, old town

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