

**UT DIARY**  
**UKRAINE**

**March 21:** A round-table conference on condition of winter crops and a forecast of their production this year will be held in the city of Kharkov.

**March 25:** The general meeting of shareholders of the open joint-stock company Nauka will convene in the city of Poltava.

**AZERBAIJAN**

**April 4:** The 12th international exhibition Tourism & Travel will take place in Baku, until April 7.

**RUSSIA**



**April 9:** The conference entitled “Wealth Management & Private Banking: Russia and CIS” will open in Moscow, until April

12.

**April 15:** The 3rd annual conference entitled “Russian Arctic Oil & Gas” will open in Moscow, until April 17.

**UNITED STATES**

**April 18:** The G20 Finance Ministers & Central Bank Governors’ Meeting will be held in Washington (until April 20).

**UKRAINE**

**April 25:** The exhibition and fair Orchard-Vegetable Garden-Harvest will begin at the Expocenter in Kiev, until April 28.

**April 26:** The exhibition and festival Easter Egg will start at the Expocenter in Kiev, until April 28.

**RUSSIA**

**May 15:** The 3rd annual conference and exhibition entitled “Airport Development: Russia & CIS” will open in Moscow, until May 17.

**UKRAINE**

**May 18:** The Ukrainian Translation Industry Conference (UTIC) will be held at the hotel Rus in Kiev, until May 20.

**CFA Ukraine organizes Ukrainian stage of global CFA Institute Research Challenge**



THE UKRAINIAN SOCIETY of investment professionals CFA Society Ukraine held the Ukrainian lap of a global student competition for the investment analysis CFA Institute Research Challenge whose local final took place in Kiev on February 21.

This year more than 3,500 students from 750 universities in 55 countries are participating in the Challenge. The main idea of the competition is a totally practical work on investment research in one of the publicly traded companies. Students had an opportunity to make the investment analysis of one of the leaders of agricultural market, namely Kernel Holding.

Although it was only the third year of such competition in Ukraine, 25 teams of leading universities from 16 regions participated in the Challenge, compared with seven teams two years ago. With such a strong interest among local institutions of higher learning, Ukraine stepped into the second place in the world, together with Texas, as India topped the league by the number of participating universities.

After two-stage presentations, two winning teams have been selected this year: the Kiev School of Economics and the Taras Shevchenko National University of Kiev. They will represent Ukraine in the Regional Final in London among 27 teams from all over Europe, Middle East and Africa.

According to president of CFA Society Ukraine Andrei Bespyatov, despite the lack of state support of the educational projects, which are in keeping with the best world educational practice of training investment analysts, all leading universities in Ukraine take a keen interest in this Challenge. In a very short period of time the students of these universities absorb a huge amount of knowledge and skills that have a practical direction.

**Aggregate capacity of Ukrainian WPP to reach 500-550 MW**

LAST YEAR INSTALLED WIND CAPACITY in Ukraine increased by 150.7 megawatts to 301.8 MW toward the end of 2012, including 276.8 MW connected to the national electricity grid. By comparison, the installed capacity of the Ukrainian wind energy sector totaled 151.1 MW by the end of 2011.

In 2012 all Ukrainian wind power plants (WPP) generated about 246,000 megawatt hours and provided about 1.24% of total electricity supply in this country.

Up to now Ukraine has been an undisputed leader among all CIS countries in development of the wind power sector. Moreover, Ukraine is the only country in the entire CIS community with the established wind industry and functioning system of “green” tariffs. The successful implementation of wind power projects is largely dependent on the ability of Ukraine to attract foreign investments in the national wind energy sector.

Based on the survey conducted by UWEA and data from operating wind power plants in Ukraine, experts of UWEA expect an increase in the wind energy capacity by 200-250 MW in 2013. In that case the aggregate installed capacity of Ukrainian wind power plants could reach about 500-550 MW by this year-end.

**THE UKRAINIAN TIMES UPDATE**  
(ISSN 1816-1464)

*The Ukrainian Times* offers foreign readers reliable information about Ukraine's business life, publicizes Ukrainian producers and promotes foreign investment opportunities in this country. The newsletter is published Tuesdays. News items are specially selected to interest international organizations, corporations, banks and investors, among others. There are many more articles since 1993 available at *The Ukrainian Times*.

Publisher and Founding  
Editor-in-Chief:  
**Vladimir V. Sytin**

Advertising Sales and Business  
Manager:  
**Svetlana Sytina**

*The Ukrainian Times* welcomes letters to the editor, story ideas and query letters.

Please address *The Ukrainian Times* at:

P.O. Box 127,  
Kiev, 04211, Ukraine,  
Tel.: +380 44 418-8423  
M.: +380 50 217-0339  
E-mail: ukrtimes@yandex.ru

twitter.com/ukrainiantimes  
facebook.com/ukrainiantimes

© 2013 *The Ukrainian Times*.  
All rights reserved. Extracts may be reproduced for individual use without permission, provided credit is given to *The Ukrainian Times*. Reproduction for reprinting purposes requires written permission from *The Ukrainian Times*.

## SEEMO welcomes Serbian commission on investigation into murders of journalists

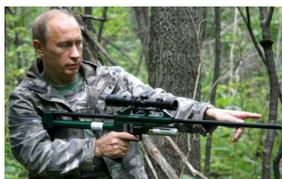
THE Vienna-based South East Europe Media Organization (SEEMO), affiliate of the International Press Institute (IPI), supports the establishment and work of a commission an investigation into the murders of journalists Radislava Dada Vujasinovic, Slavko Curuvija and Milan Pantic in Serbia.

The decision to establish the commission came into force on February 2. The goal of the commission is to determine the agenda and time frame for fact-finding and ascertaining other circumstances related to the investigations into the murder of the journalists, thus establishing cooperation with the bodies authorized to conduct investigations. Based on gathered information and circumstances related to the ongoing investigations, the commission will prepare a review of the current course of the investigations, including preparing its opinion about the effective ways of conducting the investigations that could result in further progress, and offering concrete measures to be taken in that respect.

SEEMO Secretary General Oliver Vujovic said: "SEEMO supports the work of the commission established with the aim of resolving the murders of journalists Radislava Dada Vujasinovic, Slavko Curuvija and Milan Pantic. It is notable that the commission's establishment was initiated by journalists, and that they successfully exerted pressure on the Government of the Republic of Serbia to make this initiative official. Up till now, there have been several initiatives and investigations, but never has such a strong front been formed by the united forces of journalists and representatives of authorized institutions. The advantage of a commission established in such a manner lies in its diverse character. Due to their personal relations with the journalists in question, journalist-members of the commission will most certainly make the work of the commission more effective that will, in turn, contribute to its achieving expected results. We call on international institutions and experts to contribute their experience and professional practice to the work of the commission."

The SEEMO will offer all its existing resources in order to support the commission and its activities.

## Putin approves national defense plan



RECENTLY, Russian president Vladimir Putin (pictured) has approved a national defense plan. It must be noted that 49 ministries and departments took part in the elaboration of this document.

Russian military analysts have cited several threats to the modern Russia. If U.S. troops are pulled out of Afghanistan, Uzbekistan and Tajikistan bordering Russia will become inadvertent sanctuaries for Islamist radicals who foment hatred, terrorist violence and serious criminal activity. In addition, Japan has groundless territorial claims on the Russian Federation while Turkey becomes politically radical.

## Peat to replace gas in Sumy region

TWO INVESTMENT PROJECTS of converting the Sumy and Shostka central heating and power plants from natural gas to peat will be implemented in the Sumy region this year. Importantly, the Sumy oblast lies on nearly 90 huge peat deposits whose area totals 23,500 hectares. In the past more than one million tons of peat were annually produced in the region.

Thanks to the use of alternative fuel, local enterprises succeeded in saving about 10% of natural gas last year, compared with 2011.

## UkrZaliznytsia in locomotive deal

THE state rail transportation administration UkrZaliznytsia has given an order to Russian partners for 350 electric locomotives. The deal is estimated at up to \$2.2 billion. At the same time, Russia is going to buy 350 diesel locomotives from the company LuganskTeplovoz.

Russian stock markets (03/07): MICEX 1491.35 ▼0.01%

NEWS

## Ukraine's one of the world's top five exporters of grain

TO DATE, Ukraine has brought 7.3 million tons of corn and about two million tons of barley of its 2012 crop to foreign markets. Overall, Ukrainian farmers exported more than 15.5 million tons of grain. It is important to note that this country is one of the world's top five exporters of grain.

## Azerbaijan achieves high socioeconomic indices

A TRADE TURNOVER between Ukraine and Azerbaijan has increased to \$1.5 billion. As far as competitive capacity is concerned, Azerbaijan took first place in the Commonwealth of Independent States and 46th place in the world.

Over the course of nine months last year \$16 billion have been invested in the Azerbaijani an economy. Today monthly wages average \$500 in this Transcaucasian republic.

## Ukraine must become integrated into Customs Union

BY VLADIMIR V. SYTIN  
THE UKRAINIAN TIMES

RECENTLY, Russian president Vladimir Putin has approved the concept of foreign policy. In particular, the document gives Russian diplomats the task of promoting Ukraine's attachment to integration processes within the framework of the Commonwealth of Independent States (CIS). The concept defines Ukraine as a priority partner in the CIS.

Oh, can you imagine the wailing, the weeping, the gnashing of teeth. You can imagine the howls of protest. To most citizens of Ukraine, on the other hand, the Ukrainian ultra-nationalists and Eurocrats' whines would be a pleasant sound, like listening to a Russian lullaby.

Alla Aleksandrovskaya, member of the Ukraine's Communist party, said Ukraine should break off talks about the association agreement with the European Union that needs this country as a trade appendage to it. Ukraine must integrate into the Customs Union of Kazakhstan, Byelorussia and Russia, which is the main market for Ukrainian exports. According to Vladimir Cherevan, Doctor of Economic Sciences, the entry of this country into the Customs Union would bring the additional \$9 billion to the national budget every year while Ukraine's GDP could increase by 20% in a short time.

Observers, including *The Ukrainian Times*, think that today the EU is less absorbent like communist-era toilet paper. With euro-zone turmoil often in the news, the EU is a sclerotic, ageing, debt-crippled dead-end and Ukraine could be shackled to a "corpse".

Moreover, analysts agree that the EU has morphed into the undemocratic behemoth whose actions are causing violence, factions and misery throughout Europe. The saddest thing about the EU is its inability to change.

## Kharkov airport to initiate direct flights to Baku, St. Petersburg

THE KHARKOV AIRPORT will start a direct flight to Baku in mid March. Also, plans are afoot to initiate direct flights to St. Petersburg starting June 2. Negotiations for air services between Kharkov and Athens are now in full swing.

It must be noted that the Kharkov airport handled more than 0.5 million passengers last year, compared with 308,700 in 2011.

## Classifieds

### SERVICES

The company **Ortex** offers appliances and more:

- maintenance work;
- repairs of office appliances;
- warranty on services;
- filling of cartridges with toner;
- sale of various office appliances and expend-able materials.

**Please contact us at:**

**35-A Reitarskaya St.,**

**Tel.: +380 44 272-2984,**

**E-mail: alex@reprotex.kiev.ua**



### UKRAINIAN PRESS DISTRIBUTION

Wholesale, subscription & hand delivery of the international press.

More than 15 international dailies and over 50 weekly and monthly magazines delivered to your store, office or home on the date of the issue.

For information and orders please call

**Tel./fax: +380 44 200-8204**

### BUSINESS OPPORTUNITIES

A CONSTRUCTION COMPANY seeks investors to implement real-estate projects in Kiev and the Crimea. In particular, Kiev projects provide for construction and a long lease of offices on the Independence Square as well as hotels and residential houses. Crimean projects include construction of hotels, residential houses and customs warehouses in the port city of Kerch. The area of land parcels exceeds three hectares. Terms of land property relations guarantee the 100% opportunity to become the owner of the above structures.

**Contact: ukrtimes@yandex.ru**

## Cargo turnover with Turkey may rise by 30% via Ilyicheovsk port

RECENTLY, THE ILYICHEOVSK PORT has handled the ferryboat Lazio belonging to the company Stena SeaLine. As expected, Lazio will be going on a voyage to Turkey twice a week. The Ilyicheovsk port established cooperation with Stena SeaLine in 2011.

According to experts' estimates, a cargo turnover between Ukraine and Turkey via the Ilyicheovsk port may well increase by some 30%. Last year the port handled about 122,000 means of transportation that is 13,700 more than in 2011.

## Chinese investors to pump \$600 million in Odessa oblast

THE OFFICIAL DELEGATION OF CHINA has visited the municipal council of the town of Kotovsk, Odessa region, of late to offer suggestions about a modern enterprise for processing of agricultural produce. The plant will be built by Ukrainian workers.

Overall, Chinese investors are expected to pump some \$600 million in the Odessa oblast. The investment agreement will be signed by September.

In addition, eight foreign firms intend to invest in the Odessa region.

## Prospecting for oil, gas in Volyn region

A 497.3-HECTARE AREA in the Volyn region will be explored for oil and natural gas. According to experts of the state energy group Neftegaz Ukrainy, production at this area is estimated at from 2,500 to 20,000 tons of fuel per square kilometer.

As expected, reserves of natural gas at the area will amount to 490 million cubic meters. According to preliminary calculations, oil and natural gas will last perhaps 20 years there.

## Fighting against criminal activities in Northern Caucasia

ACCORDING TO THE RUSSIAN MINISTRY OF INTERIOR, there are 40 gangs in the North Caucasian region today, their number totaling some 600 bandits. Most of them are engaged in criminal activities in the territories of Dagestan and Chechnya. Last year 391 Islamic militants were killed in the region.

## \$10 million plan to produce cardboard boxes

THE PONINKA CARDBOARD AND PAPER FACTORY, which is based in the Khmelnytsky region, plans to install equipment for producing corrugated cardboard boxes. Reportedly, the investment project is valued at a total of \$10 million. The technical modernization of production will allow the factory to create 300 new jobs.

## Kiev Mini Phone Directory

### BARS/CAFES

#### Massandra

tel.: +380 44 416 50 86,  
19/21 Naberezhno-Kreschatitskaya  
Street

### EMBASSIES

#### Finland

tel.: +380 44 278 70 49,  
14 Streletskaia Street

#### Indonesia

tel.: +380 44 244 62 88

#### Lithuania

tel.: +380 44 254 09 31,  
fax: +380 44 254 09 28,  
21 Buslovskaya Street

#### Russia

tel.: +380 44 244 09 67,  
Vozdukhoflotsky Prospekt 27

### United Kingdom

tel.: +380 44 462 00 11

### HOTELS

#### InterContinental Kiev

tel: +380 (44) 219 19 19  
fax: +380 (44) 219 19 29  
2A Bolshaya Zhitomirskaya Street  
[www.intercontinental.com](http://www.intercontinental.com)

### MUSEUMS

#### Museum of Russian Art

tel.: +380 44 234 62 18  
9 Tereshchenkivska Street

### THEATERS

#### National Opera House

tel.: +380 44 426 13 68  
50 Vladimirskaia Street

#### Russian Drama Theater

tel.: +380 44 224 90 63  
5 Bogdana Khmelnytskogo Street

## INVESTMENT OPPORTUNITIES

### Development of high technologies of directional, horizontal drilling to produce methane, shale gas

UKRAINIAN SCIENTISTS have developed the high technologies of directional and horizontal drilling of wells in coal-bearing and shale rocks, as well as in shelf zones of the seas. The technologies, which are now offered to drilling companies, provide for the simulation of processes of operation in consideration of disclosed shortcomings of the trajectory and characteristics of drilling.

**Further developments require investments in the amount of \$200,000.**

The investment project envisages the creation of a mathematical model to describe mechanical behavior of a drill-rod in the shaft of the well that has the complex geometric structure; drafting of methodological recommendations to select the technological conditions of drilling in consideration of exposed imperfections of the trajectory of a well; methodological recommendations to select the trajectory and design of a well; methods for selecting the optimum mixtures of drilling solutions and their treatment; methodological recommendations to forecast complications and breakdowns during the construction of a well, and to select technological measures for their prevention and elimination; technologies of the initial opening of productive beds, their development, intensification of the influx of fluid and an increase in the yield of a well.

Mathematical programs are to be additionally drawn up in order to conceive new drilling projects and test the existent ones at all stages with the help of computer simulation, thereby avoiding breakdowns.

The advantage of the technologies, which will be created within the framework of the investment project, lies in the fact that they are unique in comparison with world techniques with expected characteristics.

The foreign companies, which are distinguished for the high level of drilling, build their approach to designing of oil and gas wells upon the accumulated experience. However, this approach is ineffective during drilling of the deep and extended, curved wells of recent design for lack of a large amount of experience to develop them.

**Additional information: [sytnasv@mail.ru](mailto:sytinasv@mail.ru)**

*P.S. Three crucial things to look for when you invest:*

- 1) *Flexibility.*
- 2) *Emerging-market focus. Currently, multinationals and giant businesses are making hay while the sun shines over the Commonwealth of Independent States.*
- 3) *Small is beautiful. The smaller the business, the quicker it gets off the mark and the more likely it is to be innovative.*

### Research and production enterprise needs investments to expand production of BAS from marine organisms, plants

THE PRIVATE RESEARCH AND PRODUCTION ENTERPRISE, which is the implementator of innovation projects of the National Academy of Sciences of Ukraine, seeks an investor to build and operate a biofactory in the city of Sevastopol. The project is expected to be implemented within the period from three to five years. **Total investments volume amounts to 12 million euros.**

Specialists of the enterprise have developed the technologies of making bioactive substances (BAS) from marine organisms (mussels, oysters, whelks, microalgae and small marketable fish) that enables the manufacture of original products: biopreparations, drugs, medical goods, veterinary preparations, cosmetic components, dietary additives, ingredients for the food processing industry, feed additives, organic fertilizers and culture media for the microbiological industry, among others.

In 2009 the enterprise built a biotechnical module within the framework of a pilot project to fine-tune the technological processes of a main project. To date, the enterprise has mastered the manufacture of the following products:

- the dietary additive (raw material for its production is the valuable proteins of marine mollusks);
- the antiseptic made on the basis of nanoparticles of silver and marine biopolymers;
- the veterinary preparation made from the hydrolyzate of mollusks' protein tissues;
- organic fertilizers (the technology of making liquid fertilizer from hydrolyzed fish).

Finished products are registered or they undergo official registration in accordance with the procedure established by Ukraine's legislation. The finished products are not included in the list of the marine goods on which export restrictions are placed.

To take up full-fledged industrial activity, plans are in hand to install 12 modules, each operating as a complete production cycle. One module is installed over the course of 6-12 months depending on the complicacy of a structure, and it costs about EUR1 million. There are the requisite premises with supply lines for the first five technological modules designed to make albuminous hydrolyzates from mollusks, flour from mollusk shells, carotenoids, nanocomposites and albuminous hydrolyzates from fish.

The profitability of production is estimated at no less than 50%, and output will range from 50,000 to 150,000 kilograms per year. The raw materials, namely the marine organisms found in the Black Sea and the Sea of Azov, are sufficient for production.

Economic expediency of the project lies in dynamic market development. For instance, the Ukraine's pharmaceutical market shows an annual increase of up to 30% and growing tendency towards consumption of preparations made from natural raw products.

**Additional information: [ukrtimes@yandex.ru](mailto:ukrtimes@yandex.ru)**

## Ukrainian institute invites investors to participate in evolvement of new method of controlled binary therapy of malignant tumors

WORLD STATISTICS indicate that the incidence of malignant new growths tends to a continuous increase. Indicators of lethality owing to oncological pathology have the same tendency. Clinical studies show that despite the development and improvement of existent therapies their efficacy accounts for no more than 50%. The problem of resistance of malignant tumors to chemotherapeutic means and the low selectiveness of their action is equally as vital. In this connection the top-priority task of research is the adaptation of new technologies for elaboration of safe and highly efficacious therapies for oncological patients at the present stage of development of experimental and clinical oncology.

In consideration of existent notions about the molecular-biological nature of changes in malignant cells the modern strategy of solving the problem should build upon the utilization of new technologies of diagnostics and target therapy. Such approach can be ensured by the application of innovation nanotechnologies.

At present, one of the Ukrainian institutes develops the technology of creating the nanocomposite that contains the nanoparticles of ferric oxide  $\text{Fe}_2\text{O}_3/\text{Fe}_3\text{O}_4$ , which have been obtained by means of a chemical synthesis and quantum-ray technologies:

- methods of control over the physicochemical properties of components of the nanocomposite have been selected at the every stage of its creation;
- various methods for obtaining liposome complexes of antitumor drugs with ferric oxides have been approved;
- a series of experiments have been made, and it is established that the obtained nanocomposite demonstrates high cytotoxic activity aimed at transformed cells, compared with the free form of a chemodrug;
- dependence of a mass of accumulated particles of magnetite in capillaries on the velocity of magnetic liquid and duration of the action of a permanent magnetic field upon it has been established;
- the time, which is required for concentration of magnetic nanoparticles in capillaries of a model system when the velocity of the flow of liquid is steady, has been specified;
- calculation of the configuration of the permanent magnetic field, which is used to accumulate magnetic nanoparticles in tumors of animals, has been done with the help of a special program drawn up in conjunction with researchers of the Institute of Electrodynamics under the National Academy of Sciences of Ukraine.

A new method of the controlled binary therapy of malignant tumors is being developed by the Institute with the participation of 12 institutes under Academies of Sciences. As expected, research will be financed at the expense of governmental and nongovernmental funds. To boost the evolvement of the method, the Institute requires capital funding in the first rounds. The investments are needed for development of a new dosage form on the basis of nanocomposites and for preclinical research into its efficacy as well as for the creation of the complex of equipment for concentration of magnet-guided particles. There are the possibilities for repaying investments in the course of research that include joint patents on the technologies, which are being developed, and the sale of relevant licenses.

The management of the Institute herewith informs interested partner(s)-investors that they are open to discuss and receive venture capital participation through its representative, the investor relations agency *Ukrainian Times*. The target for the first rounds is an amount between seven million and 10 million euros. If you are interested in participation, please send your e-mail detailing your scope of interest to [ukrtimes@yandex.ru](mailto:ukrtimes@yandex.ru) for the attention of Svetlana Sytina, director of the IR agency *Ukrainian Times*.

## Ukrainian women need help

THE INNOVATION PROJECT of creating the center of prevention of cancer of the women's reproductive system has been drawn up at the Kiev-based National Institute of Cancer. The purpose of the project is to preserve the reproductive health of a woman through the development and introduction of diagnostics, organizational and methodological measures.

In particular, the project provides for the evolvement of new methods for diagnosing and curing the precancer pathology of organs of the women's reproductive system, coordination of management programs at medicoprophylactic institutions, as well as elaboration of records of monitoring oncogynecologic patients after treatment along organosaving programs in conjunction with reproduction centers including the cryoconservation of ovarian tissue of oncologic patients with a view to participating in reproductive technologies. Besides, the project envisages the organization of mobile teams that will examine Ukrainian women for the purpose of preventing malignant tumors in the gynecologic sphere and breast cancer.

Prof. Lyudmila Vorobyova, head of the oncogynecologic department under the National Institute of Cancer, and Prof. Ivan Smolanka, head of the department of tumors of the mammary gland and its reconstructive surgery, take an active part in the organization of the center and have long been tackling the above problem. In 2012 the Institute of Cancer published two Vorobyova's monographs entitled "Practical Oncogynecology" and "Cytological Screening of Cancer of the Neck of the Womb" as foreign colleagues take a keen interest in the experience accumulated by Lyudmila Vorobyova, chief oncogynecologist of the Ministry of Public Health. According to many experts and particularly Vasily Chekhun, director of the R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology, today Prof. Vorobyova is seen as the best expert in her sphere and charismatic surgeon who saved hundreds of patients' lives.

Although the chief oncogynecologist and her colleagues are taking first steps in the implementation of the project, budgetary limitations slow down the process. Importantly, the creation of the center of prevention of cancer of the women's reproductive system is laid down in a state program for a fight against oncologic diseases for the period ending in 2016. The center requires an ultrasonic diagnostic apparatus, colposcope, mammography, hysteroscope, magnetoresonance and computerized tomographs.

**Additional information:** [ludmilavorobyova@yandex.ru](mailto:ludmilavorobyova@yandex.ru), [ukrtimes@yandex.ru](mailto:ukrtimes@yandex.ru)

## Technology developed by Ukrainian scientists to help purify air

THE TECHNOLOGY of manufacturing catalytic neutralizers on ceramic block matrices has been developed at the L.V. Pisarzhevsky Institute of Physical Chemistry ([www.inphyschem-nas.kiev.ua](http://www.inphyschem-nas.kiev.ua)). The catalysts are designed to purify exhaust gases of internal-combustion and diesel engines from toxic components of carbon monoxide, nitrogen oxides and hydrocarbons, among others.

According to experts' estimates, the share of exhausts of carbon monoxide from motor vehicles accounts for 60-80% of its total amount, which is discharged in the air in large cities. The imposition of rigid restrictions on the toxic content of exhaust gases discharged from motor transportation in the United States and European countries requires the improvement of existent materials and technologies as well as the creation of new ones to make more efficient purifiers of the exhaust gases of internal combustion.

Tests of the Ukrainian catalytic neutralizers, which were carried out at a combustion laboratory of the Pennsylvania State University and engine stands of the Kharkov-based Malyshev plant, showed that the catalysts are capable of purifying exhaust gases from 92-95% of carbon monoxide, 80-90% of hydrocarbons and 95-98% of nitrogen oxides. It has been established by comparative methods of investigation that the Ukrainian catalytic neutralizers surpass their foreign counterparts made by such firms as Walker of Germany and Linda Gobex of Poland in a number of characteristics including activity and efficiency.

The technology developed in the Institute enables 25-50% saving of platinum group metals consumption during the manufacture of catalysts without a decrease in the efficiency of purification and operating life of catalytic neutralizers. According to calculations done by Ukrainian experts, the catalytic neutralizers, which are designed for engines with the effective volume of 1.2-2.0 liters, may cost between 500 and 800 hryvnias.

Other worthwhile spheres of use of the catalytic neutralizers on ceramic block matrices could be purification of waste gases discharged by industrial enterprises and from the stationary engines of diesel electric plants. In addition, the catalytic neutralizers could be used in the high-temperature processes of producing catalysis, for instance, in the catalytic conversion of methane gas in the course of production of synthetic ammonia. Currently, experimental tests of the developed catalysts are being carried out at several chemical industry enterprises.

## Scientists of ISP NASU create unique crystals of optical germanium

DURING SEVERAL DECADES optical germanium in the form of bulk single crystals and polycrystals has been one of the basic materials for producing optical elements of infrared devices - lenses, windows, etc. In recent years, however, in connection with the creation of complex infrared optical devices and systems (multiple-lens objectives, modern thermal-imaging systems, etc.), the commercial optical germanium has not always met the higher requirements for this material.

A team of the V. Lashkarev Institute of Semiconductor Physics under the National Academy of Sciences of Ukraine (ISP NASU) came to a conclusion that many shortcomings of the existent optical germanium are due to the fact that this material is doped with impurities replacing atoms of germanium in the crystal lattice (mainly by antimony). Scientists of the Institute proposed to use sodium as an impurity, whose atoms occupy interstices in germanium crystals, not lattice points. Previously, no one succeeded in creating germanium crystals doped with sodium. Moreover, it was regarded as the impossible. Nevertheless such material was developed and patented by the ISP NASU team.

A complete technological line for growing germanium crystals was set up at the ISP NASU, which is the only manufacturer of crystalline germanium in Ukraine today. In the past decade, more than a thousand kilograms of the new kind of optical germanium have been grown and delivered to the United States, Germany, Russia, Switzerland and other countries.

At present, the above-mentioned team of ISP NASU is working on the project that combines two original developments, namely development of a new kind of optical germanium (crystals doped with intersticed sodium) and the evolution of a modernized method of directive solidification of germanium. The implementation of this project will make it possible to grow large plates of sodium-doped optical germanium with the area of 600 square centimeters, weighing up to 25 kg. The optical systems that include elements made from those crystals will have improved optical characteristics and particularly enhanced resolution.

## Looking to do your business in Ukraine?

The news and investor relations agency Ukrainian Times is ready to help investors at no expense to find promising partners in any industry in Ukraine. In particular, the country has viable investment projects in the sphere of high technologies, nanotechnologies and the pharmaceutical industry.

To give an order for a search for a partner  
email: [ukrtimes@yandex.ru](mailto:ukrtimes@yandex.ru), tel.: +380 50 217-0339, +380 97 207-3122.

---

## INVESTMENT OPPORTUNITIES

---

### Ukrainian compact biosensor opens up new horizons in medicine

THE NEW METHODS of medical research, which are based on such optical effect as surface plasma resonance (SPR) in metal films, have appeared of late. The SPR enables direct registration of the surface interactions of biomolecules and cells without use of a radioactive marker or enzyme marker. Undoubtedly, this opens up new horizons in the application of immunologic methods and creation of novel equipment.

Scientists of the V. Lashkareov Institute of Semiconductor Physics under the National Academy of Sciences of Ukraine conduct experimental research into applied aspects of the creation of biosensors on the basis of SPR. The operating prototype of a device, which has been developed by experts of the Institute, is used as a biosensor for scientific research, laboratory analyses and the diagnosis of diseases. By comparison with traditional methods, the main advantages of this device are the possibilities for getting rapidly information, doing the direct and noncontact examination of biological liquids, analyzing the dynamics of the disease process and the effectiveness of therapy, as well as for dispensing with the necessity of using expensive reagents.

In particular, SPR can be used to diagnose the glioma of the brain. Marker methods of the early diagnosis of cancer for this disease have not been discovered yet. Preliminary research done in cooperation with the A. Romodanov Institute of Neurosurgery under the Academy of Medical Sciences of Ukraine has pointed out the possibility for detecting the glioma at various stages of malignancy with the help of the above prototype of the device. In addition, the research proved viability of the device for determining the effectiveness of therapy of the disease and its relapses if any.

The device, which is called Plasmon, can be used to analyze a state of the immune system, genetically determined diseases and the processes of aging. The experts of the Institute have already accumulated positive experience of the use of Plasmon in veterinary medicine, particularly in the diagnosis of leukemia (a saliva test). Also, the device can be employed in pharmacology and the food industry, as well as in controlling potable water pollution and other spheres.

**Additional information:** [ukrtimes@yandex.ru](mailto:ukrtimes@yandex.ru)

---

### Ukrainian scientists work on project of creating space-based solar power satellites

ONE OF THE POSSIBLE PATHS of development of power engineering is the creation of space-based solar power satellites (SBSPS). An inflow of solar energy into the Earth exceeds the needs of mankind for it by 10,000 times.

However, this energy is rather dissipated: a daily level averages 0.243 kilowatt per square meter. At the same time, a stream of solar energy is continuous and it amounts to 1.36 kw./sq.m. in circumterrestrial space. Placing converters of solar energy in orbits of the Earth would enable a considerable increase in possibilities of the concentration and distribution of energy to consumers on the Earth's surface and in space. Also, the prospective trend of use of the SBSPS is the organization of production in space, particularly remelting of the last stages of carrier rockets for the purpose of processing aluminum.

At present, research on SBSPS is done by space agencies of the United States, Japan, Russia and Ukraine. France, Germany and Canada study the possibility for building such stations as well. Such companies and institutions as Boeing Aerospace Corp., Lockheed Martin Corp., Grumman Aerospace Corp., Rockwell Inc., EADS Astrium, Ontario Power Generation, Space Energy Inc. and the Lavochkin design office take a keen interest in space power engineering. Despite a considerable number of published works on various aspects of the construction of solar power stations, research on the development of attitude control algorithms of such objects is virtually absent.

The purpose of the project, which employees of the S.P. Timoshenko Institute of Mechanics under the National Academy of Sciences of Ukraine work upon in conjunction with the Institute of Technical Mechanics, the State Space Agency of Ukraine and the state design office Yuzhnoe, is the creation and development of mathematical models, methods for the analysis of dynamics as well as SBSPS attitude and configuration control algorithms. It is expedient to use the results of the project for designing of the control systems of SBSPS and other spacecraft. In particular, economic advantages and reliability of such systems would enable a considerable cutdown in SBSPS building time.

It is worth noting too that the market for the geostationary satellites – that hang in a high orbit above the equator – is set to skyrocket by 10-20%. Experts value the commercial satellite market at \$52.7 billion in the next 10 years.

**Additional information:** [alex.zakr@mail.ru](mailto:alex.zakr@mail.ru)

## INVESTMENT OPPORTUNITIES

### Team of British, Ukrainian and Turkish scientists is ready to include first investors in applications for international grants for innovation project in the field of medicine

THE PRESENCE of pathogens (viruses, the simplest microbes) in human blood plasma plays an important role in development of many serious diseases including HIV, hepatitis C, sepsis and a number of other dangerous infections.

As is known, virtually all pathogens of a man contain nucleic acids. If certain chemicals called photosensitizers are added to the pathogen-containing medium, say, human blood plasma, and this mix is irradiated by visible light or soft ultraviolet, these photosensitizers are irreversibly bound with nucleic acids and they stop the replication of pathogens.

At present, this principle is applied to guaranteed elimination of viruses from donor's blood plasma. However, this process takes several hours.

The international team of scientists has evolved the one-minute method of deactivation of pathogens found in human blood plasma. The basic element of this method is the original sorbent whose application enables an increase in photosensitizer concentration and, therefore, a decrease in the time of plasma photoprocessing. After this, the photosensitizer is completely removed from the fluid, and live pathogens decrease in number by 1,000 to 100,000 times.

Previously, these sorbents were widely used in therapy of hepatic, kidney and multiple organic insufficiencies in Ukraine, Russia and Uzbekistan as well as during treatment given to Chernobyl victims.

The proposed concept and device can be used in bioprotection to cure victims of terrorist attacks made by means of the natural and genetically modified pathogens, which are not sensitive to conventional antibiotics treatment.

This method may be the vital element of comprehensive treatment for the hepatitis C (300 million victims in the world) and AIDS (more than 50 million victims) because it will lessen a body viral load and bring about positive changes in body immune defenses. For instance, the 12-month program of treatment for the hepatitis C that costs \$23,000 on the average can become a six-month program owing to only one photodynamic seance before treatment. There are good grounds to think it is feasible to cut the incidence of the hepatitis C, which is resistant to modern therapy, that is equal to 40-50% of the total number of diseases today.

In addition, the method can be used in treatment for the relapsing infections whose reliable therapies have not been developed yet.

#### CAPITAL REQUIREMENTS

The proposed project has a solid scientific and technological basis formed by Ukrainian, British and Turkish scientists. A period of preclinical trials of the method, including tests of the unique device designed for the extracorporeal "sterilization" of human blood plasma, will range from three to four years. The work is valued at five million euros. The research, which is expected to start in 2011, will be financed at the expense of international grants, support of charitable foundations and the medical industry.

#### POSSIBILITIES FOR REPAYMENT OF INVESTMENTS

1. Inclusion of an investor in applications for international grants.
2. Issue of joint patents.
3. Sale of licenses of the technologies, which are being developed.
4. Manufacture of equipment for treatment according to the method.
5. Opening of the clinics that will employ the method.

The Brighton University (UK) has been defined as a business partner in charge of financial matters of the project.

Authors of the project herewith inform interested partner(s)-investors that they are open to discuss and receive venture capital participation through their representative, the investor relations agency *Ukrainian Times*.

If you are interested in participation, please fill in the form hereunder or send your e-mail to [ukrtimes@yandex.ru](mailto:ukrtimes@yandex.ru) for the attention of Svetlana Sytina, director of the IR agency *Ukrainian Times* that represents the interests of the Company.

#### NOTIFICATION OF INTEREST

Company .....

Country: .....

Address: .....

E-mail: .....

Contact: .....

..... informs the authors of the project of their interest to further evaluate and discuss the financial equity participation. The scope of financial participation is between: ..... and ..... Euro. We kindly request you to contact us in order to have discussion related to the subject.

## INVESTMENT OPPORTUNITIES

### Company seeks investor to organize manufacture of solar photoelectric transducers in Crimea

THE MAIN IDEA OF THE PROJECT of organizing the manufacture of photoelectric transducers is an opportunity to develop the exportable product that will have a competitive price on the world market and create a stable demand. Plans are in hand not only to introduce local engineering developments into production, but to carry out contracts with outside customers.



#### ESSENTIAL PRECONDITIONS FOR THE IMPLEMENTATION OF THE PROJECT OF MANUFACTURING PHOTOELECTRIC TRANSDUCERS

1. Opportunity to form a joint venture on favorable terms.
2. Availability of the vacant industrial premises, which are designed to make microelectronic products.

3. Availability of electric power capacities.

4. Availability of the requisite special industrial equipment.

5. Possibility for enlisting experts, above all industrial engineers, in the field of microelectronics.

6. Prospects for the manufacture of more elaborate microelectronic products with the high level of profitability.

**THE AMOUNT OF REQUIRED INVESTMENTS totals US\$1.05565 million** including \$705,650 to do repairs and perfect the technological process as well as \$350,000 worth of a cash flow. If there are the above funds, the organization of the manufacture of photoelectric transducers will take between six and eight months.

#### PROFITABILITY OF THE MANUFACTURE OF PHOTOELECTRIC TRANSDUCERS (PER PLATE)

Cost of the procurement of monocrystalline silicon — \$3.

Raw products, materials and energy sources — \$1.8.

Salary — \$1.2.

Cost of the product — \$6.

Selling price — \$8.

Profit margin — \$2.

It is projected that the cost will decrease in the course of perfection of the technological process.

Production potentialities of the first phase of the project are estimated at from 63,000 to 96,000 photoelectric transducers per month or from 756,000 to 1.152 million photoelectric transducers per year, their generated capacity ranging from 1,512 to 2,300 kilowatts. Given the manufacture of 50,000 photoelectric transducers per month, a gross margin will amount to \$100,000 a month.

If you are interested in participation, please send your e-mail to [ukrntimes@yandex.ru](mailto:ukrntimes@yandex.ru) for the attention of Svetlana Sytina, director of the investor relations agency *Ukrainian Times* that represents the interests of the Company.

### Solar power engineering to become profitable business

IN THE FUTURE solar power engineering will become profitable business. According to the company Q-Cells, the large producer of semiconductor photoelectric transducers, parity of prices is expected in Germany in 2014. The cost of energy generated by a solar module and that of the power grid will be equal.

This has become possible, thanks to adoption of legislation designed to support the use of solar power units. For instance, every citizen of Germany is entitled to receive an interest-free loan from a bank to buy solar batteries with a capacity of three-five kilowatts. In addition, the German government encourages the owners of solar batteries who supply electricity to the municipal power grid, paying for each kilowatt.

### UAH21 billion invested in energy efficiency, renewables

PLANS ARE IN HAND to put new solar and wind power capacities totaling 600 megawatts into operation in Ukraine this year. Over the last two years 21 billion hryvnias have been invested in the sphere of energy efficiency and renewable energy.

Within the framework of the state special-purpose economic program for energy efficiency and development of the sphere of production of energy supplies from renewable sources of energy and alternative fuel for the period ending in 2015, the power-intensity of production of 123 goods was decreased and about 4.4 billion cubic meters of natural gas saved.

As one expert put it, when the wind of change is blowing the fools build walls while the wise build wind turbines. In any event, this country needs a “fire brigade” approach to renewables.