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CONTENTS

SCIENTIFIC AND TECHNICAL

- Demchenko V.F., Boi U., Krivtsun I.V. and Shuba I.V.* Effective values of electrodynamic characteristics of the process of nonconsumable electrode welding with pulse modulation of arc current 2
- Maksymova S.V., Voronov V.V. and Kovalchuk P.V.* Brazing filler metal without boron and silicon for brazing of heat-resistant nickel alloy 12
- Haivoronskyi O.A., Poznyakov V.D., Markashova L.I., Shishkevich A.S., Yashchuk V.A. and Klapatyuk A.V.* Increase of brittle fracture resistance of metal of heat-affected zone in railway wheel surfacing 18
- Borisov Yu.S., Kuznetsov M.V., Tkachenko B.T., Volos A.V., Zadoya V.G., Kapitanchuk L.M., Gudymenko A.I. and Gorban V.F.* Investigation of process of formation of structure and properties in magnetron nanolayer FeAl-coatings 24

INDUSTRIAL

- Lobanov L.M. and Pashchin N.A.* Development of technology and equipment for reduction of residual stresses and straightening in welded structures applying electrodynamic treatment 30
- Kachinsky V.S. and Kuchuk-Yatsenko S.I.* Joint formation in magnetically-impelled arc butt welding of thick-walled pipes from high-strength steels 39
- Ryabtsev I.A., Babinets A.A., Korzhik V.N., Sitko A.I. and Zhan Yuipeng.* Equipment and technology of anticorrosion 46
- electroslag surfacing applying two strips
- Troitsky V.A., Mikhailov S.R. and Pastovensky R.O.* Current achievements in radiation testing (Review) 51

NEWS

- Meeting with Management of Ukrainian-Arab Business Council at PWI 56
- International Conference «Robotization and Automation of Welding Processes» 58

INFORMATION

- Paton Publishing House Activities 60

MEETING WITH MANAGEMENT OF UKRAINIAN-ARAB BUSINESS COUNCIL AT PWI

On July 10 negotiations of the management of Ukrainian-Arab Business Council (UABC) with PWI directorship and leading specialists were held at PWI. UABC delegation consisted of: Sheikh Imad Abu Al-Rub, UABC President; Abdullah Al-Dweik, Qatar representative; O. Berezyuk, UABC Vice-President; M. Oliferenko, Cand. of Sci. (Eng.), Chairman of UABC Expert Council; M. Strikha, Dr of Sci. (Eng.), Deputy Minister of MES of Ukraine; B. Bazilevsky, Extraordinary and Plenipotentiary Ambassador of Ukraine, V. Komarnitsky, Cand. of Phys.-Math. Sci., Chairman of UABC Expert Council; S. Oksner, Assistant-Consultant of UABC President; R. Nechaj, Representative of MFA of Ukraine, V. Frindak, translator.

Academician I.V. Krivtsun, PWI Deputy Director, on behalf of academician B.E. Paton, PWI Director, PWI scientists and specialists, welcomed UABC management, and expressed his desire to familiarize the guests with the range of the Institute's activities within the framework of the first introductory meeting. He noted that the Institute's scientists prepared presentations, which may be of interest for specialists from Arab countries, and at the same time, will provide information about PWI activities.

Then I.V. Krivtsun described the history of the Institute establishment (1934), its development paths, directions of activity, and priorities at different stages of the work. It was emphasized that the greatest part of the Institute's developments has found practical application in the national economy. Many of them were sold under license agreements to different countries. The range of research areas is quite broad — from creation of underwater welding technologies to development of technologies of joining in space, from engineering new functional materials to development of technology of connecting live tissues in medicine. The Institute constantly keeps active cooperation with foreign companies and specialists.

Sheikh Imad Abu Al-Rub spoke in reply on behalf of the Arab party. He thanked the Ukrainian party, PWI management and specialists, participating in the meeting, for the opportunity of familiarizing with the activity of such world-renowned materials science center as PWI. He expressed the desire of a number of Arab countries to establish mutually beneficial business contacts with Ukrainian scientists. In his opinion, science is the sphere of cooperation, which can

develop on a long-term basis. The established Council (UABC) will allow concentrating scientific-technical information provided by Ukrainian specialists, and bringing it through Arab country ambassadors to the respective structures in these countries. This will enable significantly speeding up organization of cooperation.

Other speakers were M. Strikha, O. Berezyuk, B. Bazilevsky, V. Komarnitsky, and M. Oliferenko. The following features were noted. At present the countries of the Arab world are poorly informed about Ukraine. They are interested in effective use of their available resources. Their objective is to become familiar with Ukraine's achievements as fully as possible, accumulate the information about successes in science, economy and private sector. They are interested in involving Ukrainian experts, in particular, from PWI, in UABC Expert Council. Today contacts with Kharkiv STU, Ivano-Frankivsk University and other organizations are also being established.

After studying Ukraine's proposals, it is intended to set up working groups in each field. The main purpose of the work is to obtain practical results.

It was noted that an Arab bank is now being established in Ukraine. This will allow ensuring timely funding of the work, improving confidence of the parties, and will speed up program fulfillment.

I.V. Krivtsun thanked UABC representatives for the provided information, and confirmed achievement of concrete results being an important component of cooperation. He noted that the presentations made today are just a small part of extensive range of subjects of the Institute's activity. We will have new meetings, participate in joint seminars and conferences, and find new topics for cooperation.

PWI publishes three scientific-technical journals — monthly «Avtomaticheskaya Svarka» (English version «The Paton Welding Journal») (subjects are welding and related technologies); quarterly «Tekhnicheskaya Diagnostika i Nerazrushayushchiy Kontrol», and «Sovremennaya Elektrometallurgiya». Familiarization with them will allow promptly receiving information about the most recent achievements of Ukrainian scientists in the field of welding, metallurgy, nondestructive testing and related technologies.

I.V. Kirvtsun introduced the topics of presentations and the presenters. Among them were:



In PWI exhibition hall

- welding and treatment of soft live tissues (G. Marinsky, Dr. of Sci. (Eng.), Department Head);
- innovative highly efficient methods and technologies of flash-butt welding of pipes for various applications and rails (I. Zyakhov, Cand. of Sci. (Eng.), Deputy Department Head);
- automated methods of underwater welding of metal structures (Yu. Maksimov, Dr. of Sci. (Eng.), Department Head);
- methods and technologies of welding lines for process power supply to electrolyzers in primary aluminium production plants (V. Kuzmenko, Lead. Eng.);
- technical diagnostics and monitoring of the state of critical welded structures (A. Nedoseka, Dr. of Sci. (Eng.), Department Head);
- welding of polymer pipes (M. Yurzhenko, Cand. of Phys.-Math. Sci., Department Head);
- training highly qualified welding operators in keeping with the requirements of European and International Standards (P. Protsenko, Director of International Educational-Certification Center).

Presentation subjects aroused a keen interest to the presenters. UABC specialists expressed a desire to receive electronic versions of brief resumes on each of the presented subjects.



Sheikh Imad Abu Al-Rub speaking during the discussion of cooperation prospects

Then I.V. Krivtsun invited meeting participants to PWI exhibition hall. A brief presentation on the subject of «Space activities» was made, when the visitors were familiarized with the exhibits earlier used in space: Vulcan equipment, «URI» hand tool for electron beam welding, «Universal» tool, «Ispartikel» unit, as well as exhibits illustrating the Institute's work on development of truss structures deployable in space.

Meeting participants expressed their gratitude for the intensive and constructive program and intent to actively promote Ukrainian-Arab cooperation.

Prof. V.N. Lipodaev

INTERNATIONAL CONFERENCE «ROBOTIZATION AND AUTOMATION OF WELDING PROCESSES»



Annual, traditional, summer International Conference took place at the E.O. Paton Electric Welding Institute on June 13–14, 2017. This year Conference was dedicated to robotization and automation of welding processes. The Conference was organized by the National Academy of Sciences of Ukraine, E.O. Paton Electric Welding Institute and International Association



During visit of demonstration hall of the E.O. Paton Electric Welding Institute with a group of reporters of Chinese Xinhua News Agency. Demonstration of machine vision system

«Welding». More than 120 specialists from Ukraine, China and Poland participated in the Conference.

Among the participants are the scientists and specialists from E.O. Paton Electric Welding Institute, LLC «Fronius Ukraine», LLC «Fanuc Ukraine», LLC «Binzel Ukraine», Poland Institute of Welding in Gliwice, JSC «Motor Sich», NTUU «Igor Sikorsky KPI», Guangdong Institute of Welding (PRC), «Weihan Science and Technology» (PRC) and others (in total more than 40 companies).

The Conference was opened by Prof. L.M. Lobanov, Deputy Director of the NAS of Ukraine (academician of the NAS of Ukraine). After welcoming the participants of the Conference, he in short review outlined the main directions of the presentations.

Around 30 presentations were made during plenary session of the Conference. Conditionally, they can be divided on the following directions by topics:

- tendencies of development and application of robotics;
- example of application of effective solutions in welding processes automation;
- means for geometry adjustment and monitoring in robotic arc welding;
- practice of implementation of robotic complexes.

A lot of the presentations sparked interest of the Conference participants and were accompanied by questions to the presenters.

A day before the Conference, on June 13, the participants had the possibility (optionally) to visit LLC «Fronius Ukraine» (Knyazhychi village, Brovary area, Kyiv region). A group of 40 people was divided and V. Bondarenko and V. Slyuta, the representatives of LLC «Fronius Ukraine», conducted a familiarization excursion around the company territory.

The visitors saw a laboratory of automation and robotization. It is equipped with welding systems for mechanized and automatic welding using one or two arcs, systems for orbital welding of pipe with pipe and pipe with tube plate, system for welding in different spatial positions, automatic systems with magnetic containment in flat and vertical positions, system for surfacing on cylinder bodies. Also MAG surfacing process and CMT process with pulsed arc were demonstrated. The participants were also familiarized with laboratory unit for dual arc welding of longitudinal extended welds.



Participants of the Conference before boat trip over Dnieper

Engineering service of LLC «Fronius Ukraine» has been working since 2006. It helps to generate an order together with the customer, ensures training of technologist-operators, and provides consultations and engineering support. All this guarantees «correct work». The engineering service has specially equipped class for training.

In the conclusion the visitors attended a presentation on «Examples of effective solutions of welding (surfacing) processes automation», including welding of longitudinal welds FLW, welding process TIME (2 arcs) of bracket-like columns, CMT surfacing of mining equipment (one-layer surfacing with portion of base metal in deposited ≤ 6 wt.%), surfacing of inner pipe surfaces of 6 and 9 m length, CMT surfacing of support bearings, operation of system for orbital welding of open and close type.

Familiarization with the developments of Fronius Company sparked lively interest of the visitors.

During the Conference the participants could visit a demonstration hall of the E.O. Paton Electric Welding Institute, where they could see welding robotic complex based on Fanuc robot and Fronius welding systems. The complex is equipped with machine vision system, developed at the E.O. Paton Electric Welding Institute by a team headed by Cand. of Tech. Sci. E.V. Shapovalov. «HORDA» wire from «Dizhka



Рас» package, courtesy of «Vitapolis» Company (Bo-yarka, Kyiv region), was used in the welding robotic complex.

Proceedings of the Conference were published in «Avtomaticheskaya Svarka» journal Nos. 5/6, 2017 and in English in «The Paton Welding Journal», Nos. 5/6, 2017.

The Conference had creative, friendly atmosphere and was traditionally closed by evening trip over Dnieper River on «Kashtan-5» motor ship, during which the participants admired of coastal landscapes with the churches, bridges over Dnieper as well as discussed in free atmosphere the perspectives of cooperation and directions of works in the field of welding processes robotization.

Dr. A. Zelnichenko and Prof. V. Lipodaev

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