We're ahead of the curves both in terms of hypersound and welding, too

On April 18 through 20, the Expoforum hosted the 21st Svarka/Welding International Exhibition. This year, the Exhibition was attended by 8,000 people from 18 countries, namely Russia, Belarus, Kazakhstan, Uzbekistan, Kyrgyzstan, Azerbaijan, China, South Korea, India, UAE, Iran, Pakistan, Italy, Turkey, Estonia, Latvia, Lithuania, and Poland. The convention program included 10 events and was participated by 60+ speakers and 800 delegates. At the Exhibition, 60 companies presented their latest projects and solutions for the welding industry.

The Exhibition was opened during the opening ceremony of several dedicated events by **Denis Kravchenko,** the Deputy Chairman of the State Duma Committee of the Economic Policy Board of the Federal Assembly of the Russian Federation, the Executive Secretary of the Bureau of the Supreme Council of the United Russia Party; **Evgeny Vyshemirsky,** Head of Senior Welder Section, Department of Gazprom PJSC; **Dmitry Kobitsky,** Secretary General of the Council of the CIS Interparliamentary Assembly; **Vladimir Katenev,** President of St. Petersburg Chamber of Commerce and Industry; **Dmitry Nikitin,** CEO of RESTEC Exhibition Company; as well as **Sergey Voronkov,** CEO of ExpoForum International.

'For three days, St. Petersburg became the capital of the Russian welding industry, and this is totally justified, as it was in this city that physicist Vasily Petrov had performed the world's first ever welding arc production experiments. Most of the existing welding methods were designed by the Russian scientists in the 1930–80s, in times of the iron curtain. Looks like sometimes we need to get a kick from the outside to start introducing some cutting-edge technology,' said **Evgeny Vyshemirsky.**

At the Exhibition, the visitors were presented Forsazh inverter welding machines for all kinds of electric arc welding, designed by **the State Ryazan Instrument Plant,** plasma arc cutting plants capable of making cuts up to 220 mm thick, dedicated CNC machines, as well as filter-ventilator units by **Inverter R&D Company,** induction and resistive heating equipment by **KATRAN LLC,** smart welding sources by **MEGMEET,** welding inverters by **Technotron R&P Company,** welding equipment by the Italian **Cebora,** laser cutting and metal refining equipment by **UNIMACH** along with many other projects in the field of welding and related technologies.

Every day, demonstration welding works were performed at the stands of Cebora, MegmitWelding, Ferro-M, VTP, Abrasive Expert, Morsvyazavtomatika Science & Production Company, FoxWeld, and SEKIRUS.

A collaborative stand was arranged at the Svarka/Welding Exhibition with 12 companies from the People's Republic of China presenting their projects, namely: Changzhou Cewoo Equipment Co., Ltd., Jiaxing MTB Machinery Co., Ltd., Beijing Essen Welding & Cutting Fair, Changzhou Aikesailunte Trading Co., Ltd., Qingdao Aitel Electronic and Technology Co., Ltd., Heron Intelligent Equipment Co., Ltd., etc. This stand was established by the Chinese Mechanical Engineering Society (CMES).

The fundamental event of the Svarka/Welding International Exhibition was the **THINKING AHEAD: CONSEQUENCES OF GLOBAL ECONOMIC SANCTIONS AND DEALING SCENARIOS. STRATEGIC OBJECTIVES IN THE WELDING INDUSTRY plenary session.**

During the plenary session, special focus was on staff education and training. According to **Sergey Petrov,** Head of Transport Welding Technologies Centre, affiliated with the Russian Transport University, on the average, the teachers working with welders-to-be are about 70 y. o.

'We used to have 3 welding specializations, but in 2009 on the order of the Russian Government, all the basic engineering specializations were merged to become 'Machine Engineering Technology.' Of course, there's a welding specialization, but if we check how we train students today, we'll see they're hardly taught 15 or 20% of what they used to get in the Soviet times. In that context, I can't assert that the engineers graduating from our universities are really ready to work. And if we don't have any engineers ready to work, there won't be anyone they can teach. This makes the future of our science questionable in general,' said **Sergey Petrov.**

Sergey Parshin, Director of the Russian-German Laser Technology Centre associated with the Peter the Great St. Petersburg Polytechnic University, outlined three courses that should be tended today, which are innovations, science, and education.

Svetlana Chuprak, member of Community Board of Rosstandart, Head of Technical Regulation and Standardization Department at National Welding Control Association SRO, member of TC 364 Welding and Similar Technologies, talked about why welding standardization procedures matter. She reminded the audience that they'd been working continuously since 2020 as regards to both materials and equipment.

At the **STATE-OF-THE-ART WELDING TECHNOLOGIES, EQUIPMENT, AND MATERIALS FOR CONSTRUCTION AND REPAIR OF MAJOR AND FIELD PIPELINES International Scientific-Practical Conference** the participants discussed the status of the industry in the conditions of sanction pressure and shared some innovations and experience of their introduction.

'We're under the sanction mode. However, the most groundbreaking discoveries in this and other fields were made by Russians in times when the country was in isolation, also known as 'the Iron Curtain.' It is the opportune time now. We aren't too dependent on the foreign suppliers in this field. There are some issues with welding materials but none that can't be dealt with. Gazprom has an ordeal to encounter: they have to build the Power of Siberia 2 Gas Pipeline in China. The most state-of-the-art Russian technologies will be used to implement this really daring project. Diameter of this pipeline will come to 1,420 mm with the working pressure of 14.7 MPa and the length of 8+ thousand kilometers,' said **Evgeny Vyshemirsky,** Head of Senior Welder Section, Department at Gazprom PJSC.

Nikita Lapshin, Director of the Welding and Nondestructive Control at Gazstroyprom JSC, outlined that the import substitution trend plays a major role for the Russian welding equipment manufacturers, as it sets the bar high for them.

'Our works are performed in severe climatic conditions: it's all about the north and temperatures down to minus 60 degrees centigrade. Not all of the equipment works well there. We continuously maintain a dialogue with Russian producers. We keep performing upgrades so that our equipment could work in any climatic zone,' the expert explained. He also added that today software engineers are working on a special AI at Innopolis University. This technology will be used to discover defects in welded joints. The AI will be self-learning and capable of processing extensive data arrays. The longer it will work, the more accurately it will reveal the defects. The scientists expect it to leave humans behind in terms of operation reliability and speed.

Another innovation was presented by **Olga Morozova,** CEO of UTS INTEGRATION R&P Company: a piece of equipment that is already being pilot tested. This company designed a portable plant for laser indirect orbital welding on pipelines. Currently, they are testing it at the Gazstroyproject's line. According to **Olga Morozova,** this technology has been patented in Russia and has no foreign equivalents.

'Things are always tough for trailblazers: you never know what challenges lie ahead. On the other hand, with the projects like this we are really entitled to say that we're ahead of the curves both in terms of hypersound and welding, too,' resumed **Evgeny Vyshemirsky.**

For the first time ever, the Svarka/Welding Exhibition hosted the Board meeting of senior welders from the United Shipbuilding Corporation companies. The participants discussed the most pressing matters of the shipbuilding welding. The event also included some **round-table discussions about certification and standardization activities in the welding sector.**

In the open presentation zone, the Alliance of Welders of St. Petersburg and North-West Region held the **SYSTEMS FOR MONITORING (CONTROL) OF WELDING EQUIPMENT AND PROCEDURES** workshop**.** The **MANAGEMENT TRANSFORMATION IN THE SITUATION OF UNCERTAINTY. VISION AND EXPERTISE THROUGH THE PRISM OF B2G / MAJOR B2B OPERATIONS** conference arranged by Craft Mind was held in the open conference room. The Steel Construction Development Association held their session named **WELDING QUALITY ENHANCEMENT AND ECONOMIC TAKE ON THE PROCEDURE.**

The Business Matchmaking Centre was operated during the event. 1,000+ meetings between suppliers and customers from the welding sector took place there. The event was participated by Abrasive Materials Production Company, DK Spetsstroy, INVACO Group, MASTI-K, SilTEK, Pigment Holding Company, EKM Holding, Industrial Service Technologies, and others.

Along with the Svarka/Welding Exhibition, the Expoforum hosted the Russian International Energy Forum, the Municipal Housing Complex of Russia International Exhibition and the Corrosion Protection International Exhibition and Congress.

The Svarka/Welding International Exhibition was powered by the Chamber of Commerce and Industry of the Russian Federation, the Alliance of Welders of St. Petersburg and the North-West Region, Gazprom, the National Welding Control Agency, the United Shipbuilding Corporation, the Kurchatov Institute National Research Center – Prometey Central Research Institute of Structural Materials, and the Steel Construction Development Association.

The strategic international partner of the Exhibition was the Chinese Mechanical Engineering Society (CMES).

The official web-site of the Svarka/Welding Exhibition: welding.expoforum.ru