

VII INTERNATIONAL CONFERENCE  
ON WELDING AND RELATED  
TECHNOLOGIES



**WRT 2024**

**PROGRAM**



**7-10 October 2024**  
**Yaremche, Ukraine**

## PROGRAM

### VII INTERNATIONAL CONFERENCE ON WELDING AND RELATED TECHNOLOGIES (WRT 2024)

#### Associated event



#### Organizers



#### Co-organizers



# WRTYS

non-governmental organization

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Igor KRIVTSUN (Ukraine)

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Igor VLADYMYRSKYI (Ukraine)

#### ORGANIZATION COMMITTEE

##### HEAD OF ORGANIZING COMMITTEE

Leonid LOBANOV

##### MEMBERS OF THE ORGANIZING COMMITTEE

(in alphabetic order)

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Maksym KHOKHLOV

Illia KLOCHKOV

Ganna POLISHKO

Mariia PRYZIHLEI

Iryna ROMANOVA

Serhiy SCHWAB

Roman SELIN

Oleksandr ZELNICHENKO

## 7 October 2024

*Eastern European Time  
(EET)*

- 10.00 - 18.00** Registration, meeting and accommodation of guests
- 19.00 - 21.00** **Welcome reception**

## 8 October 2024

*Eastern European Time  
(EET)*

- 09.30 - 10.00** Registration, meeting and accommodation of guests
- 10.00 - 10.20** Opening / Greetings to the conference participants  
Igor KRIVTSUN *WRT 2024 Chairman, Director of PWI,  
Ukraine*  
Thomas *IIW President, Germany*  
BOELLINGHAUS  
Chairman Serhiy MAKSYMOW
- 10.20 - 10.50** Invited Lecturer      Femtosecond lasers: unique performances  
Iaroslav  
GNILITSKYI,  
*Ukraine (in person)*
- 10.50 - 11.00** Ivan TRNKA,      SaZ s.r.o. and the E.O.Paton Institute  
*Czech Republic*      cooperation in the development of Road Rail  
*(in person)*      Welding complexes K922-1
- 11.00 - 11.20** Orest BILYY,      Effect of magnetic field applied during fusion  
*Mexico (online)*      welding of 2205 duplex stainless steel on  
resistance to fatigue corrosion cracking
- 11.20 - 11.40** Andrii MOMOT,      Charge and heat transfer from arc plasma to  
*Ukraine (in person)*      metal particle in GMA welding or PTA  
surfacing
- 11.40 - 12.00** **Coffee-break**
- 12.00 - 12.20** Oleksii SEMENOV,      Modelling of tungsten inert gas arc and its  
*Ukraine (in person)*      impact on the anode
- 12.20 - 12.40** Yevgen SBRODOV,      Periodically non-stationary properties of  
*Ukraine (online)*      vibrations for gas-turbine engine with  
unbalanced rotor

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<b>12.40 - 13.00</b>	Viktor SAVITSKY, <i>Ukraine (in person)</i>	Application of an unmanned aerial vehicle with an RTK module and photogrammetry method for remote determination of the verticality of the Kyiv TV tower
<b>13.00 - 14.00</b>	<b>Lunch</b>	
	<u>Chairman Iaroslav Gnilitskyi</u>	
<b>14.00 - 14.30</b>	Invited Lecturer Gerald Wilhelm, <i>Germany (online)</i>	Arc welding processes with flux-cored wire electrodes
<b>14.30 - 14.50</b>	Igor VLADYMYRSKYI, <i>Ukraine (in person)</i>	Diffusion formation of Fe(Co)-Pt ferromagnetic thin films
<b>14.50 - 15.10</b>	Rostyslav PODOLSKYI, <i>Ukraine (online)</i>	Study of the influence of manufacturing parameters on the mechanical properties of the LPBF-ALSi10Mg alloy
<b>15.10 - 15.30</b>	Mykola CHERVIAKOV, <i>Ukraine (in person)</i>	Comprehensive analysis of the microstructure and mechanical properties of deposited metal of nickel high-temperature alloy ZhS32
<b>15.30 - 15.50</b>	<b>Coffee-break</b>	
<b>15.50 - 16.10</b>	Maksym KHOKHLOV, <i>Ukraine (in person)</i>	Mg-Ga-Zn-Ca alloys as a promising material for the production of biodegradable implants
<b>16.10 - 16.30</b>	Artur NOVODRANOV, <i>Ukraine (online)</i>	Applying neural network technologies for quality control in robotic additive manufacturing
<b>16.30 - 16.50</b>	Andrii CHORNENKYI, <i>Ukraine (in person)</i>	Relationship between stress concentration and stress intensity factors in sharp or rounded V-notches in orthotropic plane
<b>16.50 - 17.10</b>	Ivan LAHODZINSKYI, <i>Ukraine (online)</i>	Analysis of the influence of CMT and Pulse GMAW surfacing methods and the chemical composition of the protective gas environment on the formation and metal structure of additively formed products from G3Si1 steel and CuSi3Mn1 alloy

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**17.10-17.30** Vladyslav Application of additive electron-beam  
MATVIICHUK, technologies  
*Ukraine (online)*

**9 October 2024**

*Eastern European Time  
(EET)*

Chairman Mykola Cherviakov

**09.30 - 10.00** Invited Lecturer Optimization of ultrasonic spot welding  
Shun TOKITA, parameters for Al/Al, Al/Cu, and Al/Ni similar  
*Japan (online)* and dissimilar joints

**10.00 - 10.20** Svitlana Brazing of titanium alloy TA15  
MAKSYMOVA,  
*Ukraine (in person)*

**10.20 - 10.40** Ash Abdibastami, Metallurgical challenges and solutions in  
*Australia (online)* repair welding of Cr-Co alloyed steels: a case  
study on gas turbine stator rings

**10.40 - 11.00** Oleksii KAGLYAK, Laser synthesis of CBN-contained abrasive  
*Ukraine (in person)* layers

**11.00 - 11.20** Anatoliy Mechanical properties of welded joints of  
ZAVDOVEEV, medium carbon alloyed steels heated to  
*Ukraine (online)* temperatures from 250 to 1200°C

**11.20 - 11.40** Vladyslav KHASKIN, Using spectral parameters of compressed arc  
*Ukraine (in person)* plasma to develop basic approaches to smart  
welding

**11.40 - 12.00** **Coffee-break**

**12.00 - 12.20** Serhiy The influence of the welding thermal cycle on  
MAKSYMOV, the distribution of alloying elements in the  
*Ukraine (in person)* structure of the heat-affected zone of a  
welded joint of duplex steel 2205

**12.20 - 12.40** Oleg MAKHNENKO, Calculation prediction of welding distortions  
*Ukraine (online)* of large-sized cylindrical structures

**12.40 - 13.00** Oleksandr Current state and prospects for development  
ROMANENKO, in the field of welding of biological tissues  
*Ukraine (in person)* with high-frequency power sources

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**13.00 - 14.00**

**Lunch**

Chairman Yuriy Kostetskyi

**14.00 - 14.30** Invited Lecturer      Laser welding using dynamic beam shape.  
Aleksey      Technology and practical applications  
KOVALEVSKY, *Israel*  
(*online*)

**14.30 - 14.50** Mykhailo VORON,      Effect of heat treatment on the structure of  
*Ukraine (in person)*      the Fe-28Mn-12Al-0.9Si-1.35C alloy,  
additionally doped by Ni 3.3, Cr 1, V 0.15  
(wt.%)

**14.50 - 15.10** Yuriy NIKITENKO,      Evolution of liquid-phase methods for  
*Ukraine (online)*      growing molybdenum single crystals

**15.10 - 15.30** Yevhen      Electroslag remelting of variable cross-  
PEDCHENKO,      section electrodes using a two-circuit  
*Ukraine (in person)*      scheme

**15.30 - 15.50**

**Coffee-break**

**15.50 - 16.10** Dmytro HAVRYLOV,      Synergizing melt pool geometry metrics and  
*Canada (online)*      acoustic analysis for enhanced defect  
detection in GMAW and WAAM

**16.10 - 16.30** Maksym VDOVIN,      Aluminothermal recovery of vanadium-  
*Ukraine (in person)*      containing waste in electroslag melting

**16.30 - 16.50** Andrii SEVERYN,      Production of heat-resistant titanium based  
*Ukraine (online)*      alloys by electron beam melting in Ukraine

**16.50 - 17.10** Volodymyr      New method for improving physical homogeneity  
BARABASH,      of steel ingots  
*Ukraine (online)*

**17.10 - 17.30** Serhiy HLUSHAK,      Workplace of a cosmonaut-welder for  
*Ukraine (online)*      performing manual electron beam welding of  
objects in open space

**19.00 - 23.00**

**Conference Dinner**

## 10 October 2024

*Eastern European Time  
(EET)*

Chairman Maksym Iurzhenko

- |                      |   |   |
|----------------------|---|---|
| <b>09.30 - 10.00</b> | Invited Lecturer<br>Dario CAVALLO,<br><i>Italy (online)</i> | Some factors affecting inter-layer weld strength in material extrusion 3D-printed amorphous and semicrystalline polymers              |
| <b>10.00 - 10.20</b> | Roman<br>KOLISNYK, <i>USA<br/>(online)</i>                  | Sustainable manufacturing of vertical carbon nanotube arrays inside insulating nanoporous membranes using nickel nanowires            |
| <b>10.20 - 10.40</b> | Viktoriia<br>TALANIUK<br><i>Poland (online)</i>             | PLA composites for functional application in additive manufacturing and welding of polymer constructions                              |
| <b>10.40 - 11.00</b> | Donghu ZENG,<br><i>Ukraine (online)</i>                     | An analytical mathematical model for melting layer thickness of HDPE pipes at thermal butt-fusion welding                             |
| <b>11.00 - 11.20</b> | Anastasiia<br>LYTVYN, <i>Ukraine<br/>(online)</i>           | Optimization of PET bottle recycling for filament production: a comprehensive study on 3D printing parameters and material properties |
| <b>11.20 - 11.40</b> | Illia SYTNYK,<br><i>Ukraine (online)</i>                    | Hydrogel materials based on polyvinyl alcohol and silver nanoparticles, cross-linked by electron beam irradiation                     |

**11.40 - 12.00**

**Coffee-break**

Chairman Viktor SAVITSKY

- |                      |  |   |
|----------------------|--|---|
| <b>12.00 - 12.20</b> | Ruslan HUBATIUK,<br><i>Ukraine<br/>(in person)</i>         | Mathematical modeling of heat and mass transfer processes of electron beam melting of ingots of high-strength titanium alloys       |
| <b>12.20 - 12.40</b> | Valerii<br>PEREMITKO,<br><i>Ukraine (online)</i>           | Changes in the structure and properties of high chromium cast iron soldered with carbide encapsulation in a charge of powdered wire |
| <b>12.40 - 13.00</b> | Oleksandr<br>BABACHENKO,<br><i>Ukraine<br/>(in person)</i> | Development of chemical composition and heat treatment of pearlite steel for high-strength railway rails                            |

**13.00 - 14.00**

**Lunch**

**14.00 - 15.00**

**Poster session**

**15.00 - 15.30**

**Closing ceremony**





