



**Romanian Welding
Society**



**BABES-BOLYAI University
Faculty of Engineering Resita**

ASR International Conference "WELDING 2021"



IIW Associated Event

Circular 2

April 22-23, 2021



ASR is member of the European Welding
Federation and International Institute of Welding



The ASR International Conference "WELDING 2021", an IIW associated event, is organized in Reșița in the year in which 250 years of industrial activity are celebrated.

The conference is addressed to specialists in industry, research and higher education. It has a broad topic, including new developments in the field of welding in terms of processes, materials and applications. Special emphasis will be given to the following topics:

- Current status and trends in the development of welding and joining, including additive manufacturing
- Ecological welding - from design to recycling
- Digitization of education and training activities in the field of welding.

The official languages of the conference are English and Romanian.

Given the current COVID-19 pandemic, the conference will be organized in a hybrid way: on site (in Reșița) participation of a small number of attendees and online.

If the conjunctural pandemic situation in Romania will not allow a physical presence, the conference will take place exclusively online. A decision will be taken by the organizers by 10.04.2021.

Joint events

- Technical-commercial session
- "Welded Art" virtual exhibition

Organizing Committee

- Sorin David, Executive Director, POWER DESK SRL Reșița, Vice-president of ASR – Chairman of the Organizing Committee
- Răzvan Bătrînu, General Manager, Ductil SA Buzău, ASR President
- Petru Buzzi, President, Chamber of Commerce, Industry and Agriculture Caras-Severin
- Dorin Dehelean, Executive Director, ASR
- Gilbert-Rainer Gillich, Dean, Engineering Faculty Reșița of UBB
- Cosmin Ursoniu, General Manager, UCM Reșița
- Aurel Văduva, General Manager, PLASTOMET SA Reșița
- Marcel Bolovedea, PRODMEC SRL Reșița, Chairman ASR Reșița Branch
- Anamaria Feier, Technical Director, ASR
- Johann Hrachovy, Technical Counselor, PRODMEC SA Reșița
- Laura Vereșezan, ASR

International Scientific Committee

- Prof. dr. Radu Băncilă – Romania
- Prof. dr. Dieter Boehme – Germany
- Prof. dr. Petar Darjanov – Bulgaria
- Prof. dr. Dorin Dehelean – Romania
- Dr. Janos Dobranszky – Hungary
- Prof. dr. Gilbert-Rainer Gillich – Romania
- Dr. Vencislav Grabulov – Serbia
- Prof. dr. Radu Iovănaș – Romania
- Ing. Sorin Keller – Switzerland
- Prof. dr. Ionel Dănuț Savu – România
- Prof. dr. Americo Scotti, FIIW – Brazil
- Prof. dr. Elena Scutelnicu – Romania
- Prof. dr. Aleksandar Sedmak – Serbia
- Prof. dr. Viorel Aurel - Șerban – Romania
- Ing. Chris Smallbone FIIW – Australia

Conference Proceedings

The accepted papers will be published in the Conference Proceedings that will be distributed to the participants.

Selected papers will be published after the conference in the UBB journal "Studia Universitatis Babeş-Bolyai Engineering" or the ASR journal "SUDURA".

Venue

The onsite part of the conference will take place at the Faculty of Engineering, Reşiţa, Piaţa Traian Vuia, Nr. 1 – 4.



The municipality of Reşiţa, the residence of Caraş-Severin County, is located in southwestern Romania, in the northwestern part of the county, on the middle course of the Bârzava River.



For a long period of time Reşiţa has been considered one of the major industrial centers of Romania, with significant influences in the steel industry (cast iron, steel, laminate), machine building (electrical and diesel, oil, steel and chemical equipment, rolling stock), chemical (wood chemicalization, coke). Reşiţa is the oldest steel center in Romania, the first factories being established 250 years ago in 1771. Here was produced in 1872 the first steam locomotive in Central and Eastern Europe. In 1937, the first welded bridge in Romania, and the second welded bridge in Europe was built in Resita.



Today Reşiţa is proud with a locomotive museum that contains 14 steam locomotives manufactured in the Resita plant and which can be visited by the conference participants.

Accommodation

Conference participants can book (booking code "Sudura 2021") at the Rogge Reşiţa Hotel (<https://www.hotelrogge.ro/>), located at approx. 300 m from the conference venue.

Online participation

Participants wishing to attend the conference online should connect to CISCO WebEx platform. The connection can be made from a PC, laptop, tablet or phone. Prior to connection, the download of the WebEx app (<https://www.webex.com/downloads.html>) is necessary.

The connection credentials will be transmitted to the participants by the Conference Secretariat after their registration.

Time

Romania is in the Eastern European Time Zone, and is using the Eastern European Summer Time between 28.03.2021 and 31.10.2021 (3 hours ahead of Greenwich Mean Time, UTC+3).

Programme overview

Thursday, 22.04.2021

09:30 – 11:20 Opening Ceremony + Session 1

11:40 – 13:20 Session 2

14:30 – 16:30 Session 3

16:50 – 19:00 Session 4

Friday, 23.04.2021

09:00 - 11:00 Session 5

11:20 - 13:00 Session 6

13:00 - 14:00 Technical-commercial Session

15:00 – 16:30 Session 7

16:50 - 18:10 Session 8

18:10 - 18:30 "Welded Art" Virtual Exhibition

Preliminary Programme

Thursday, 22.04.2021

09:30 – 11:20 Opening Ceremony + Session 1

- Opening Ceremony

- S. David (Romania) - 250 years of industrial activities in Reșița

- L. Costa (Italy) - IIW: Assisting industry in following the key trends in welding and allied processes (*Keynote Paper*)

- C. Smallbone (Australia) - Your country's National Welding Capability and its significance to the UN Sustainable Development Goals (SDGs) (*Keynote Paper*)

- S. Keller (Switzerland) - Experience in the weld-related production and repair of rotors for gas and steam turbines (*Keynote Paper*)

11:20-11:40 Coffee Break

11:40 – 13:20 Session 2

- S. Amancio Filho (Austria) - Using additive manufacturing to enable high-performance metal-composite hybrid structures (*Keynote Paper*)

- A. Paradowska (Australia) - Application of neutron scattering to assess welding and additive manufacturing components (*Keynote Paper*)

- A. Sedmak (Serbia) - How to deal with cracked welded structure – Application of fracture mechanics parameters to structural integrity assessment (*Keynote Paper*)

- R. Băncilă (Romania) - Brief history of welded bridges in Romania, from the first welded bridge in 1937 to the present day (*Keynote Paper*)

13:20-14:30 Lunch Break

14:30 – 16:30 Session 3

- A. Scotti (Brazil) - Thermodynamic representation of innovation to understand the struggle for wire arc additive manufacturing maturity (*Keynote Paper*)

- N. Markocsan (Sweden) - Liquid feedstock plasma spraying for emerging applications (*Keynote Paper*)

- J. Dobranszky, S. Uzonyi, S. Tamas (Hungary) - Application of wire arc additive manufacturing to meet industrial needs (*Keynote Paper*)
- A. Joni, V. Birdeanu (Romania)– Development of wire arc additive manufacturing process for aeronautic structure
- A B. Lopez, F. Barros (Portugal) - International additive manufacturing qualification system (IAMQS)

16:30-16:50 Coffee Break

16:50 – 19:00 Session 4

- Z. Burzić, M. Butzić (Serbia), S. Perković (Bosnia Hercegovina , D. Gačo, V. Grabulov (Serbia),) - Influence of fatigue load on behaviour of welded joint on X20 high alloyed steel
- M. Burzic (Serbia), M. Manjgo (Bosnia Hercegovina), Z. Burzic, (Serbia) - Predicting the remaining life of structures in exploitation
- R. L. Păun, G. R. Gillich, D. Nedelcu, A. Bostan (Romania) - Analysis of the effect of mass addition due to welding on the natural frequencies of elastic beams
- D. Dobraš, M. Marković, S. Savić (Bosnia Hercegovina) - Structural analysis of a welded joint of a flexible pipe for a flange
- S. Avdić, N. Džibrić N, D. Dobraš (Bosnia Hercegovina) - Reliability of the numerical simulation method for predicting the occurrence of residual stresses and deformations in welding
- M. Marić, D. Bajić (Montenegro), T. Vuherer (Slovenia) - Welding of duplex stainless steel 1.4462 with MAG welding process
- Mirza Manjgo (Bosnia Hercegovina), T. Vuherer (Slovenia), D. Bajić (Montenegro), Mersida Manjgo (Bosnia Hercegovina)- - Residual stresses in MAG welded joints of S960QL steel
- D. Nikolovski (Macedonia) - Welding document management system at Microsoft Sharepoint

Friday, 23.04.2021

09:00 - 11:00 Session 5

- R. Băncilă, A. Feier, E. Petzek, F.Tusz (Romania)- Fatigue assessment problems and particularities in the design and execution of modern welded steel highway bridges according to Eurocodes standards
- A. Bostan, G.R Gillich, L. R. Păun, D. Nedelcu, Z. I. Korca (Romania) - Detection of inhomogeneous regions due to welding in structural components by vibration-based techniques
- C. Codrean, D.Buzdugan, P.Hididis, M. Nicolaescu, I. Vida Simiti, V-A.Șerban (Romania) - Comparative study between Solid State Welding and Radiant Energy Welding processes for joining amorphous ribbons
- P. Dorcea, A. F. Badea (Romania) – In situ reconditioning of bronze propellers for ships
- E. Frici, R. Molnar (Romania) – Optimization of welding of a highly deformable welded structure
- A. Joni, A. Știr (Romania) - New kinematic structures for better performance of robotic systems for electric arc welding
- I. Cuda (Romania) - Management of resources for welded manufacturing - guide with examples

11:00-11:20 Coffee Break

11:20 -13:00 Session 6

- M. Bodea (Romania) - Implementation of artificial intelligence in welding technologies (20')
- L. R. Mistodie C. C Rusu, E. Scutelnicu (Romania) - Augmented reality methods used in 3D inspection of naval structures

- L. R. Mistodie C. C Rusu, P. M. Ivanov (Romania) - Virtual reality technologies applied in „Metal art”
- A. Feier, O.Chivu, A. Țăpîrdea, A. Firu, A. Becheru (Romania) - Use of additive manufacturing processes in the automotive field in Romania
- I. D. Savu, M. Ciornei, S. Savu (Romania) – Deposition interface in metal FDM process
- P. Dorcea, A. F. Badea (Romania) – Thermal spraying- an option for extending the life of ships

13:00 -14:00 Technical-commercial session

14:00 - 15:00 Lunch Break

15:00 - 16:30 Session 7

- D. Landon (USA) - A triple pass of the torch: Technology, Heroism, and Mentorship (*Keynote Paper*)
- M. Beloev, P. Darjanov, P. Popgeorgiev (Bulgaria) - On the challenges BWS faces to raise the training quality level of welding-oriented personnel in Bulgaria
- D. Dehelean, A. Feier (Romania) - Perspectives on the education of welding workforce as a result of the lockdown imposed by the COVID-19 pandemic and the global induced recession
- M. Bodea, R. Molnar (Romania) - Training of personnel working in environments with a high risk of fire and explosion due to oxygen

16:30-16:50 Coffee Break

16:50 - 18:10 Session 8

- R. Vidas (Croatia), M. Santoro (Switzerland), D. Garcia Nunes (Portugal), E. Margeta, M.Szügyi, Z. Habek (Croatia) - Framework European curricula for education of arc welders
- M. Szügyi, E. Margeta (Croatia), K. Sydekum (Germany), T. Rosado (Portugal), A. König (Elvetia), J. Kreindl (Austria), M. Ćorluka, Z. Habek (Croatia) - Lifelong education of welders based on the innovative Skill - Knowledge –Stability system
- I. D. Savu (România), S. Nogueira (Portugalia), M. Szügy (Croatia) - Guideline for the training of trainers in welding
- S. Nogueira (Portugalia), E. Margeta (Croatia), Z. Habek (Croatia) - Competence Matrix in professional development of welding teachers/trainers

18:10-18:30 “Welded Art” Virtual Exhibition

Participation fees

Participation fees are as follow:

- onsite participation (in Reșița): 60 euro
- online participation: 30 euro

The online participation of students is free.

The attending of the conference is permitted after submitting the attached Registration form to the conference secretariat (asr@asr.ro), and payment of the participation fee (if applicable).

The participation fee should be paid in the ASR bank account:

RO45 RNCB 0249 0320 4358 0015 or, in case of onsite participation, at the Conference secretariat.

Contact and information:

The conference secretariat is accessible by email at asr@asr.ro or by phone: +40 742 026 121. The conference secretariat will function at the conference venue, according to the following schedule:

- Wednesday, 21.04.2021, 16:00-19:00
- Thursday, 22.04.2021, 08:30-19:00
- Friday, 23.04.2021, 08:30-19:00.