IIW Annual Assembly 2021

Agenda Commission XII
"Arc Welding Processes and Production Systems"
July 15 - 17, 2021
ON-LINE

Thursday 15 July 2021, 13:00 – 16:00 CEST @ Room 4

1. Opening

2. Agenda (Doc.XII-2486-2021)

3. Minutes of previous meeting (Doc. XII-2455-2020)

4. Brief report on Joint Intermediate ON-LINE Meeting on March 2021

5. Direction of C-XII
   - New C-XII Sub-Commission: Physics of Welding
   - Election of the Chair

6. Presentation of documents:

(Session chairman: Dr. Pan, Chairman of Sub-Comm. A)

   Weld pool Image Recognition and Welding wire Design for Automatic Penetration Bead Welding in Horizontal Position
   K. Ozaki, N. Furukawa, A. Okamoto, K. Ishizaki, Y. Kimura, T. Koike (Japan)
   Doc. XII-2471-2021

[2] 13:40-14:00
   Study on blow hole detection technology using image sensing method with deep learning
   KASANO Kazuki, OGINO Yosuke, SANO Tomokazu, ASAI Satoru (Japan)
   Doc. XII-2473-2021

[3] 14:00-14:20
   Qualification of GMAW thick-wire welding on fine grain structural steels
   M. Neumann, A. Hälsig, M. Kusch (Germany)
   Doc. XII-2470-2021

Coffee Break (14:20– 14:35)
(Session chairman: Dr. Egerland, Chairman of Sub-Comm. B)

Selection of welding conditions for achieving both high efficiency and low heat input on hot-wire GMAW
Keita Marumoto, Hajime Tamata, Akira Fujinga, Takeshi Takahashi, Hikaru Yamamoto, Jeong-Won Choi, Motomichi Yamamoto (Japan)
Doc. XII-2472-2021

WelDX – progress report on the welding data exchange format
Cagtay Fabry, Volker Hirthammer, Martin Scherer, Andreas Pittner, Michael Rethmeier (Germany)
Doc. XII-2476-2021

Friday 16 July 2021, 13:00 – 16:00 CEST @Room 4

(Session chairman: Dr.Hermans, Vice-chairman of Comm. XII)

Study of microstructure evolution during wire arc additive manufacturer HSLA steel
Oleg Panchenko, Dmitry Kurushkin, Kladov Ivan, Leonid Zhabrev, Eugeni Rylkov (Russia)
Doc. XII-2474-2021

Data-driven modelling of complex current-voltage waveform controlled gas metal arc based wire arc additive manufacturing processes
Pradeep N, Prakash S, Saravana Kumar G and Murugaiyan Amirthalingam (India)
Doc. XII-2475-2021

[8] 13:40-14:00
Development and implementation of a software for wire arc additive manufacturing pre-processing
Planning: Trajectory planning and machine code generation
Rafael Pereira Ferreira, Louriel Oliveira Vilarinho, Américo Scotti (Brasil)
Doc. XII-2481-2021

Coffee Break (14:00–14:15)

(Session chairman: Prof. Wu, Chairman of Sub-Comm. E)

14:15-14:30 Visit from the WitW Editors (Video)

[9] 14:30-14:50
Alloying Element Addition to the Titanium Aluminide fabricated using the Twin-Wire Plasma Arc Additive Manufacturing (TW-PAAM)
Chen Shen , Wenlu Zhou, Jianwen Xin, Lin Wang, Xueming Hua , Yuelong Zhang, Ting Zhang, Peilei Zhang (China)
Doc. XII-2477-2021

[10] 14:50-15:10
Analysis of Arc Characteristics in Oxide Active TIG Welding Based on Emission Spectroscopy Diagnostics
Gu Yufen , Li Chunkai , Ding Bin, Shi Yu (China)
Doc. XII-2483-2021
Numerical simulation of the pulsed-MAG welding process from the heat source properties to the weld pool formation
Yosuke Ogino, Satoru Asai, Tomokazu Sano (Japan)
Doc. XII-2482-2021

Effects of alkaline elements on the metal transfer behavior in metal cored arc welding
Ngoc Quang Trinh, Shinichi Tashiro, Keigo Tanaka, Tetsuo Suga, Tomonori Kakizaki, Kei Yamazaki, Tomozaku Morimoto, Hiroyuki Shimizu, Ackadech Lersvanichkool, Anthony B. Murphy, Hanh Van Bui, Manabu Tanaka (Japan)
Doc. XII-2479-2021,

A Numerical Analysis on the Effect of Zinc Evaporation at the Joint Interface in Hot-dip Galvanized Steel to Aluminum Alloy Joining by AC Pulse GMAW
Seong Min Hong, Shinichi Tashiro, Hee-Seon Bang, Manabu Tanaka (Japan)
Doc. XII-2481-2021

Effect of ultrasonic vibration on keyholing/penetrating capability in waveform-controlled plasma arc welding
Junnan Qiao, Shuoshuo Tian, ChuanSong Wu (China)
Doc. XII-2487-2021

The improvement of joint strength directional dependency on the Al-Fe FSW overlap joint through the tool probe shape driven hook shape control
Jin Young Yoon and Jason Cheon
Doc. XII-2485-2021

3D spectroscopic measurement of plasma temperature and metal vapor concentration in plasma-MIG hybrid welding process
Kazuya Ishida, Shinichi Tashiro, Kazufumi Nomura, Dongsheng Wu, Manabu Tanaka (Japan)
Doc. XII-2478-2021

7. Recommendation of submission to IIW Journal “Welding in the World”
8. Miscellaneous
9. Date and place of the next Annual Assembly (75th Annual Assembly, July 17-22, 2022, Tokyo, Japan)
10. Closure