



INTERNATIONAL INSTITUTE OF WELDING
A world of joining experience



ANNUAL REPORT

2019-2020

MESSAGE FROM THE PRESIDENT



MR. DOUGLAS R. LUCIANI

President, International
Institute of Welding (2017-2020)
Toronto, Canada

This is my third and final Annual Report message as your President and when I look back over the last year and in fact the last three years of my term, it has been very gratifying to see what we have collectively accomplished together.

The IIW now has a new 5-year Strategic Plan with both aligned and more detailed Operational and Marketing/Communication Plans. This now allows the IIW to ensure it effectively executes on the new IIW Vision embedded in this plan, to be **'The leading global community linking industry, research and education to the advancement of welding and joining for a safer and sustainable world'**. This will be accomplished by achieving the five 'Must Win Battles' of the new Strategic Plan. This new strategy was based on tremendous input from several IIW member stakeholder surveys and was presented to all IIW members in a series of webinars over the last two years.

In addition, to ensure we effectively achieve our plans, the IIW took the opportunity to ask all IIW Member Societies for expressions of interest in offering the IIW General Secretariat services going forward, focused on the implementation of the new Strategic Plan. After reviewing the excellent proposals received from several organisations, the IIW made the difficult decision to shift the management of the IIW to the Italian Welding Institute (IIS Group), under the leadership of Dr Luca Costa for the next five years. As a result, we thanked Dr Cecile Mayer and the IS Group team for the tremendous support that they provided the IIW for so many years as the IIW General Secretariat and began the move of the IIW organisation formally from France to Italy. To date, we have already seen the tremendous support that Luca and his team are providing to all IIW members as they execute against the new Strategic Plan and I know that this will only increase and be enhanced in the months and years ahead.

Regarding the International Authorisation Board (IAB) side of the IIW, we have now finalized our new 5-year IAB Secretariat agreement with the European Welding Federation (EWF) to ensure the IIW Authorised Nominated Bodies (ANBs) and Authorised Nominated Bodies for Company Certification (ANBCCs) continue to receive the excellent service that they have become accustomed to in the delivery of the world-class IIW Education, Training, Qualification and Certification (ETQ&C) products and services.

With the culmination of these new agreements and plans the IIW is definitely set to grow into the future. Additionally, with the support and continued dedication of all the IIW members, I have the utmost confidence that under the leadership of our new President, David Landon from the USA, this will indeed come to fruition.

Lastly, as we all know, any good plan must be fluid and flexible to adjust to unforeseen circumstances, and there is no better example of that than what we are all currently dealing with under the global COVID-19 Pandemic. In response, I have seen firsthand the amazing work of your IIW Board, not only throughout this worldwide crisis but over the last three years. The recent decision by the IIW Board to implement the upcoming online Annual Assembly this July 2020 is no better example of this. By making this difficult decision it allows the IIW to continue its great work but in the safest possible manner. This decision is also consistent with the new Strategic Plan (i.e. Must Win Battle #5) where it outlines the effective use of technology to allow the IIW to be more efficient and effective in its work while allowing the IIW to expose more welding professionals globally to the great work of the organisation. My only regret is that we are not going to be able to see each other face-to-face to experience the networking and enjoyable interaction that a usual Annual Assembly provides all of us, as we saw at last year's very successful Bratislava, Slovakia meetings.

In closing, it has been my honour to serve not only the IIW, but all of you as the President for the last three years and I cannot thank you all enough for your continued support, passion and commitment towards me and the IIW.

I hope that you and your families remain safe and healthy as we continue to emerge from the COVID-19 Pandemic and I look forward to seeing everyone virtually at our upcoming online Annual Assembly!

OUR PEOPLE

IIW Board of Directors 2019/2020
IIW and IAB Secretariats



4

2019 TREASURER'S REPORT



6

SHARING WITH PEERS

Scientific and Technical Activities
Spotlight on an Incoming Chair
IIW Working Units



8

LEARNING

Education, Training, Qualification and Certification



12

2019/20 IIW AND ASSOCIATED EVENTS



14

INFLUENCING

IIW Journal



15

RECOGNITION

2019 IIW Annual Assembly and Awards
Focus on Welding Innovation: Slovakia hosts 72nd IIW Annual Assembly
A Network of Members
Networking Events
Young Professionals
International Conference
2019 IIW Annual Awards



17

COLLABORATING

IIW Member Societies



30

OUR PEOPLE

IIW Board of Directors 2019/2020



IIW and IAB Secretariats

After a decision taken by the IIW General Assembly during the last IIW Annual Assembly in Bratislava, the IIW General Secretariat services have been assigned to the Italian Institute of Welding (IIS – Istituto Italiano della Saldatura). A renewed team started supporting the IIW and the members of the international welding community from 01 January 2020, after a five-month transition to ensure adequate continuity in the level of services offered. The IIW is thankful to the former CEO Dr Cecile Mayer and her staff for their commitment to making the IIW as successful as it is now. 2019 also saw the retirement of Mrs Olga Teixeira and Prof. Luisa Coutinho from the IAB management team, which they actively supported since its institution in 1999, with an enormous contribution to its international impact. The IIW Secretariat and the IAB management team will continue to concentrate on the IIW Vision to be 'The leading global community linking industry, research and education to the advancement of welding and joining for a safer and sustainable world.'

IIW GENERAL SECRETARIAT



MRS NOËLLE FAURIOL
Database and
Technical Advisor
(ending 31/12/2019)



**MRS LEYLANY
BENARD-DELECOMBE**
Member Services & Administration
(ending 31/12/2019)



MRS. FABIENNE DA SILVA
Document Centre Support
(ending 31/12/2019)



MS ANNE RORKE
IIW Communications Support
(ending 31/12/2019)



DR ENG. CÉCILE MAYER
CEO
(ending 31/12/2019)



DR ENG. LUCA COSTA
CEO
(starting 01/01/2020)



DR ENG. ROSARIO RUSSO
Administrative and
Communication Specialist
(starting 01/01/2020)



**DR ENG. ELISABETTA
SCIACCALUGA**
Technical Manager
(starting 01/01/2020)



MR ANDREW DAVIS
Standards Officer



MRS ERDMUTHE RAUFELDER
Editorial Office Manager

IAB MANAGEMENT TEAM



ENG. RUTE FERRAZ
IAB Chief Executive



DR. EURICO ASSUNÇÃO
IAB Deputy Chief Executive



ENG. ITALO FERNANDES
IAB System Manager



PROF. LUISA COUTINHO
IAB Consultant
(ending 31/12/2019)



ENG. TOBIAS ROSADO
Deputy IAB System Manager



ENG. PEDRO CATARINO
IAB Technical Officer
(starting 01/01/2020)



MRS. OLGA MARIA TEIXEIRA
IAB Administration and
Finance Assistant
(ending 31/01/2020)



MS. MARIA FLORES
IAB Projects and
Administrative Assistant
(starting 01/01/2020)

2019 TREASURER'S REPORT

The IIW ended 2019 with a financial result after taxes of € -67,671. The major factor for this deficit is that four Member Societies were not able to pay their yearly membership fees for a total bad debt inventory of € -51,187. During the 2019 General Assembly, the memberships of two of these societies were terminated. The status of the other two societies will be discussed during the 2020 online General Assembly.

In follow up to the decision of the General Assembly in Bratislava, the IIW began to the process of transitioning the IIW Secretariat from France to Italy including moving the country of incorporation. During 2019 this involved extraordinary expenses of € 61,929. This was not included in the 2019 budget, which the General Assembly approved in Bali in July 2018 and was long before this transition was being considered.

Even though these transition costs were not included in the 2019 budget, they were known at the time of the decision to move the Secretariat to its new location. Once the decision to move the IIW Secretariat was made, the IIW President gave instructions to review and, where possible, reduce other expenses.

Approximately € 35,000 of other expenses were eliminated so that the net operating result (before including bad debts) was € 16,484.



Going forward, the IIW Board of Directors and CEO have started exploring new sources of revenue as the IIW provides increased valued services to new and existing stakeholders.

Through the Marketing and Communications Plan, we also seek to strengthen the finances of our Member Societies. The largest single expense of the IIW is the cost of its secretariat services. As a result of the move to Italy, this yearly cost will decrease by about 5% while simultaneously providing more services to IIW Member Societies and Working Units.

ITEM	REALIZED 31/12/2018	2019 BUDGET	REALISED 31/12/2019	Δ (%) 2018-19
INCOME				
Membership fees	466.136	470.798	467.730	0,3
Fees from IIW events (A.A.+ Congress)	107.520	104.145	109.109	1,5
Other incomes	7.011	8.500	1.542	-78,0
Welding in the World	50.670	55.000	50.261	-0,8
Interest from bank accounts	1.565	2.000	1.164	-25,6
TOTAL	636.363	640.443	629.807	-1,0
EXPENDITURE				
Secretariat	487.040	495.261	500.434	2,8
Travelling expenses	29.717	35.000	21.053	-29,2
Direct costs for meetings and prizes	2.564	2.000	2.733	6,6
Office supplies and computer maintenance	790	1.000	263	-66,8
Postage and telephone	816	1.500	55	-93,3
Promotion, communication	14.358	35.000	11.545	-19,6
IIW website (hosting & maintenance)	9.600	10.000	14.893	55,1
Audit fees and legal fees	33.067	30.000	23.503	-28,9
Bank charges	1.979	2.000	1.852	-6,4
Straight-line method of depreciation	4.310	4.272	4.321	0,3
Insurance	2.427	3.000	2.707	11,5
Business Tax	12.320	1.050	1.000	-91,9
Other charges	474		2	-99,6
Extraordinary costs: transfer Secretariat to Italy	-		61.929	-
TOTAL	599.462	620.083	646.290	7,8
OPERATING RESULT	36.901	20.360	-16.484	-144,7
BAD DEBTS INVENTORY				
Bad debts recovered	42.800			-100,0
Provision for doubtful account	-27.575		-41.380	50,1
Irrecoverable debt	-51.846		-9.807	-81,1
TOTAL	-36.621		-51.187	39,8
NET RESULT BEFORE TAX	280		-67.671	
Tax result				
RESULT AFTER TAX	280		-67.671	



DR. STEPHAN EGERLAND
(Austria)
Technical Management
Board Chair

Scientific and Technical Activities

2019 - a year, characterised by a considerable number of changes and challenges within IIW and certainly remembered as the year preceding COVID-19 and the first On-line Annual Assembly in the IIW's history. First and foremost, however, 2019 was another year where we enjoyed another impressive IIW Annual Assembly. Perfectly arranged and hosted by our Slovakian friends in Bratislava, the professional meeting environment which was provided allowed the IIW Technical Working Units (WUs) to add profound value again to international welding research, industry and education.

At this juncture, allow me to share a quite personal insight. Despite the distinct privilege granted by being asked to chair the IIW Technical Management Board (TMB), what I am so heavily missing is being able to join WU sessions during an IIW Annual Assembly. Unfortunately Bratislava was no exception in this respect and extensive administrative requirements prevented me from participating much in WU meetings. Those few that I had the pleasure to attend, however, were - as always - overwhelming in both technical quality and collegiality.

As one representative example take IIW Commission-VI (Terminology). Passionately chaired by Dr Glenn Ziegenfuss (USA) and an undisputed part of the IIW backbone, it regularly collects some of the most remarkable individuals in the international welding world around the table. To be part of these 'second to none' discussions among its members is a unique experience in itself; always focused on providing the international welding community with unambiguous, meaningful and thus, helpful welding terminology. Like C-VI, the members of all of the IIW WUs give their best in deriving and sharing state-of-the-art results in order to reach one of the IIW goals; producing and providing best practice documents for the use of IIW members and the welding industries around the world.

In 2019 all IIW WUs thoroughly revised their Terms of Reference (ToR) to reflect their strategic aims and how to achieve them. That not only helps the WUs and their Chairs to keep track of their goals, but also proves particular benefit to the IIW TMB. Consequently, with the cornerstones approved by the IIW Board of Directors, as TMB Chair it is my vision to transform the TMB into a strong, more strategically focused unit, precisely assisting the WUs in their work towards reaching their goals. Amongst other things, at present the TMB ToR are therefore subject to purposeful revision so that they too will provide clarity and guidance future steps and necessary decisions.

One final word. We all are going through unprecedented times, hence the IIW Board of Directors has decided to move forward to the IIW's first On-line Annual Assembly. Excellently managed by the IIW General Secretariat, highly professional efforts are currently devoted to make this first-of-its-kind event a full success for the benefit of all IIW members. On behalf of the members of the IIW TMB I can assure you that we fully support to the endeavours being undertaken and with that being said, I look very much forward to meeting all of you very soon again, virtually indeed, but nonetheless as wholeheartedly welcome as always in joining the IIW 2020 On-line Annual Assembly.

HUMAN FACTORS

Terminology /
Health, Safety and Environment /
Education and Training /
Research, Strategy and Collaboration /
Welding Management



INDUSTRIAL APPLICATIONS

Pressure Vessels, Boilers and Pipelines /
Automotive and Road Transport /
Shipbuilding / Aircraft Engineering /
Microjoining / Additive Manufacturing /
Civil Engineering /
Oil & Gas, Petrochemicals

Spotlight on an Incoming Chair

Through their leadership the chairs of IIW Working Units voluntarily share their knowledge, experience and resources to make excellent contributions to the vibrancy and productivity of the Working Units, the progress of IIW and the promotion of welding around the world.



DR. MARIA ASUNCION VALIENTE

STUDY GROUP - Welding Research Strategy and Collaboration (SG-RES)

Dr Maria Asuncion Valiente graduated from the University of Barcelona, Spain with a Master's Degree in Welding in 2000 and a PhD in Materials Science and Metallurgical Engineering in 2010. She also holds a diploma of International Welding Engineer (IWE), accredited by the International Institute of Welding (IIW). She was awarded an IIW Henry Granjon Prize in 2012 for her research paper on the experimental results obtained when analysing the effect of alloy level on the transition between solidification modes in austenitic stainless steel weld metals. Upon completing her doctoral degree, she was the principal researcher for a grant from the Knowledge Foundation in Sweden for three years. She has successfully participated in research funding and grants since then. Maria Asuncion Valiente has been affiliated to University West in Sweden since 2013 and currently she is employed as senior lecturer and researcher in the field of metallurgy of welding and additive manufacturing. She has more than 20 scientific publications. In 2014 she was appointed as Vice-chair of IIW Sub-Commission IX-H (Welding of Stainless Steels and Nickel-base alloys) and since 2019 she has chaired SG-RES which promotes international collaboration in welding research and networking especially for young professionals.



SHARING WITH PEERS - IIW WORKING UNITS



**C-I / ADDITIVE
MANUFACTURING,
SURFACING, AND
THERMAL CUTTING**
Ing. Doug Kautz



**C-II / ARC WELDING
AND FILLER METALS**
Dr Gerhard Posch



**C-III / RESISTANCE
WELDING, SOLID
STATE WELDING AND
ALLIED JOINING
PROCESS**
Dr Ing. Jorge dos Santos



**C-IV / POWER BEAM
PROCESSES**
Dr Herbert Staufer



**C-V / NDT AND
QUALITY ASSURANCE
OF WELDED
PRODUCTS**
Dr Marc Kreuzbruck



C-VI / TERMINOLOGY
Dr Glenn Ziegenfuss



**C-VII / MICROJOINING
AND NANOJOINING**
Prof. Akio Hirose



**C-VIII / HEALTH,
SAFETY AND
ENVIRONMENT**
Eur. Ing. Geoff Melton



**C-IX / BEHAVIOUR OF
METALS SUBJECTED
TO WELDING**
Dr Hee Jin Kim



**C-X / STRUCTURAL
PERFORMANCES OF
WELDED JOINTS -
FRACTURE
AVOIDANCE**
Prof. Dr Eng.
Fumiyoshi Minami



**C-XI / PRESSURE
VESSELS, BOILERS
AND PIPELINES**
Mrs Teresa Melfi



**C-XII / ARC WELDING
PROCESSES AND
PRODUCTION
SYSTEMS**
Prof. Satoru Asai



**C-XIII / FATIGUE OF
WELDED
COMPONENTS AND
STRUCTURES**
Prof. Kenneth MacDonald



**C-XIV / EDUCATION
AND TRAINING**
Mr Carl Peters



**C-XV / DESIGN,
ANALYSIS, AND
FABRICATION OF
WELDED STRUCTURES**
Dr Eng. Stefano Botta



**C-XVI / POLYMER
JOINING AND
ADHESIVE
TECHNOLOGY**
Prof David Grewell



**C-XVII / BRAZING,
SOLDERING AND
DIFFUSION BONDING**
Dr Huaping Xiong



**C- / QUALITY
MANAGEMENT IN
WELDING AND ALLIED
PROCESSES**
Mr Robert Shaw



**SG-212 / THE PHYSICS
OF WELDING**
Prof. Manabu Tanaka



**SG-RES / WELDING
RESEARCH STRATEGY
AND COLLABORATION**
Dr Maria Asuncion
Valiente Bermejo

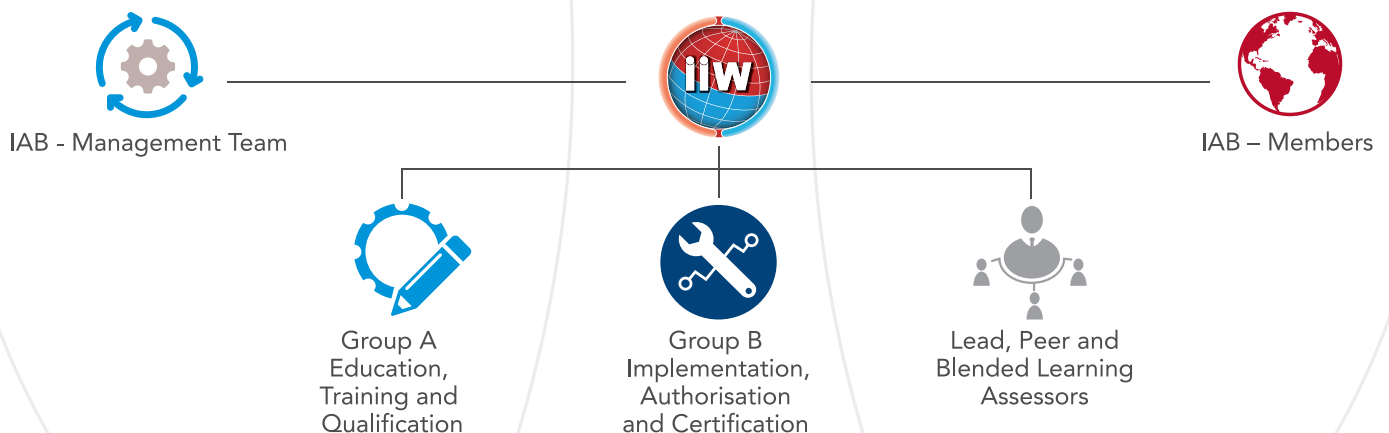


**JWG / JOINT
WORKING GROUP
XIII-XV**
Prof. Adolf
F. Hobbacher

Education, Training, Qualification and Certification

GOAL: TO IDENTIFY, DEVELOP AND IMPLEMENT THE IIW EDUCATION, TRAINING, QUALIFICATION AND CERTIFICATION PROGRAMMES ON A GLOBAL BASIS

International Authorisation Board (IAB) a three-fold orientation: personnel, companies and the international welding community. The IAB is constantly working to develop the systems it manages: the harmonised qualification and certification system for personnel and the certification system for companies, and adapt them both to technological advances and market needs. The IAB works continuously towards the interests of the international welding community and its development, via its members worldwide. By providing certified welding personnel to undertake coordination responsibilities and qualified and skilled personnel at all levels, and by developing a harmonised system for company quality certification according to ISO 3834, the IAB responds to industry needs.



THE MESSAGE OF THE IAB CHAIR AND CEO

In a fast-moving and evolving industry, the IAB continued to make progress towards an effective system to support the welding industry in education and training of its workforce. Our goal is to bring to industry the necessary knowledge and skills for personnel and companies.

In 2019 the implementation of the IAB strategy moved forward with optimised organization of IAB meetings and a better cooperation with IIW Working Units. We strongly believe that the actions being taken will reinforce the IAB's contribution to a competitive industry by offering an harmonised, up-to-date education, training and certification system for welding personnel and companies worldwide.



MR. CHRISTIAN AHRENS
IIV-IAB Chair (Germany)



MRS. RUTE FERRAZ
IIV-IAB CEO (Portugal)

ROLES AND RESPONSIBILITIES: WHO IS DOING WHAT

Group A 'Education, Training and Qualification' is responsible to develop and revise Curriculum Guidelines, Alternative Route Guidelines and to deal with Blended Learning Programmes.
Technical approval of the IAB Guidelines is the responsibility of Group A.

Group B 'Implementation, Authorisation and Certification' is responsible to:

- develop, maintain and revise the Rules and Operational Procedures for implementing the Guidelines and the Certification Schemes;
- grant and confirm authorisations of Authorised Nominated Bodies (ANBs) and Authorised Nominated Bodies for Company Certification (ANBCCs);
- approve Access Conditions, Transition Arrangements, Distance Learning Programmes;
- to appoint Assessors.

Technical approval of the IAB Rules and Operating procedures is the responsibility of Group B.

IAB Peer and Lead Assessors are Experts of the IIW-IAB qualification and certification systems and are responsible for assessing ANBs and ANBCCs against the IIW-IAB Rules.

2019 HIGHLIGHTS FROM GROUP A

Scope: Education, Training and Qualification

During 2019 the key activities of the IAB Group A were:

- Finalisation of Learning Outcomes for the Guideline for Personnel with Welding Coordination Responsibilities
- Development of the harmonised plastic specimens and digital radiographic testing

Documents Revised and Developed under IIW-IAB Group A

Guidelines:

- IAB-252r5-19 - Personnel with Welding Coordination Responsibilities
- IAB 041r5-19 - Welding Inspection Personnel



Chair:
ING. HENK J.M. BODT
 (The Netherlands)

2019 HIGHLIGHTS FROM GROUP B

Scope: Implementation, Authorisation and Certification

During 2019 the key activities of the IAB Group A were:

- Certification Scheme for Welding Inspectors
- Digital diplomas/certificates
- A centralised database of personnel diplomas/certificates

Documents Revised and Developed under IIW-IAB Group B

Rules:

- Several Operational Procedures
- New Full Authorisations:
 - WIM (Malaysia)
 - HWC (Vietnam)



Chair:
DR STEFANO MORRA
 (Italy)

2019/20 IIW AND ASSOCIATED EVENTS



12-13 November 2019
5TH INTERNATIONAL ELECTRON BEAM WELDING CONFERENCE (IEBW)
 Chicago, Illinois, USA



07-12 July 2019
72ND IIW ANNUAL ASSEMBLY AND INTERNATIONAL CONFERENCE
 Bratislava, Slovakia



09-13 December 2019
17TH INTERNATIONAL SYMPOSIUM ON TUBULAR STRUCTURES (ISTS17)
 Singapore



11-13 September 2019
6TH INTERNATIONAL CONFERENCE ON SCIENTIFIC AND TECHNICAL ADVANCES ON FRICTION STIR WELDING & PROCESSING (FSWP)
 Louvain la Neuve, Belgium



27-29 January 2020
5TH IIW INTERNATIONAL CONGRESS
 Mumbai, India

IIW Journal

WELDING IN THE WORLD EDITORS



**PROF. DR ENG.
JOHN C. LIPPOLD**
(USA)



**PROF. DR ING.
THOMAS BÖLLINGHAUS**
(Germany)



**PROF. DR ING.
JOHN NORRISH**
(Australia)



**PROF.
AMÉRICO SCOTTI**
(Brazil)

In 2019, Volume 63 of *Welding in the World* published six issues containing 160 papers and over 1900 pages of fundamental and applied research associated with materials joining and allied technologies. The topic distribution of papers published in 2019, arranged by Technology Area, is shown in the figure on page 16.

Over 500 papers were submitted to the journal in 2019. The acceptance rate for these papers was 35% and time to first decision was approximately 100 days. As shown in the chart on page 16, the journal impact continues to increase based on both Impact Factor (IF) and CiteScore, with an anticipated IF of 1.4 expected for 2019. The number of paper downloads increased dramatically in 2019 to 111,000, up 74% from 2018.

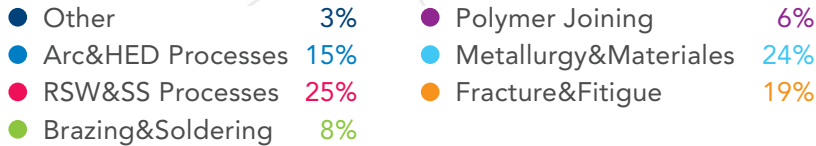
Starting in 2020, *Welding in the World* increased to 12 issues per year to accommodate the large number of papers that are being submitted and to allow more special issues and topical collections to be published. Already through Issue 6 of Volume 64, 85 papers have been published representing over 900 pages. Issue 7 consists of a Topical Collection on Additive Manufacturing.

Prof. John Norrish from Australia has served as Interim Editor from July 2019. He ends his term in June 2020 and will be succeeded by Prof. Américo Scotti from Sweden. The Editorial Board has now been increased to over 40 members in order to assist the Editors with the pre-screening of open submission papers and to streamline the peer review process. The expansion of the Editorial Board has allowed the journal to reduce the time to first decision to less than 80 days and time to publication to about six months. Further improvements in time to publication are anticipated through the end of 2020.

The Editors wish to thank all who contribute to the continued success of the journal including authors, Working Unit chairs and co-chairs, principal reviewers and members of the review panel, the Editorial Board, the IIW managing editor and staff, and the support staff at Springer. The growth in the number of papers submitted to *Welding in the World* over the last four years has required tremendous effort by both the peer review panel and production staff.



WELDING IN THE WORLD TOPICS - 2019



WELDING IN THE WORLD - PERFORMANCE DATA

	2013	2014	2015	2016	2017	2018	2019
Papers recommended by IIW Working Units	130	131	115	130	126	127	
Open submission papers submitted	-	49	172	278	256	285	380
Papers published	82	84	90	114	120	120	160
Pages published	945	923	932	1296	1296	135	1902
Total cites	114	205	327	521	807	829	939
CiteScore	0.61	0.89	0.93	1.26	1.52	1.62	NA
Downloads	28,815	37,657	43,250	59,093	73,820	63,835	111,022
Science Citation Index (SCI) Impact Factor	0.424	0.746	0.861	0.948	1.206	1.278	~1.4

WELDING IN THE WORLD - EDITORIAL BOARD 2020

NAME	COUNTRY	NAME	COUNTRY
Albert, Shaju	India	Kimchi, Menachem	USA
Barsoum, Zuheir	Sweden	Kreutzbruck, Marc	Germany
Bergmann, Jean-Paul	Germany	MacDonald, Kenneth	Sweden
Bhaduri, Arun	India	Mayr, Peter	Germany
Cross, Carl	USA	Melton, Geoff	UK
De, Amitava	India	Minami, Fumiyoshi	Japan
deMeester, Bruno	Belgium	Norrish, John	Australia
Dong, Pingsha	USA	Posch, Gerhard	Austria
Dupuy, Thomas	France	Rethmeier, Michael	Germany
Egerland, Stephan	Austria	Rother, Klemens	Germany
Enzinger, Norbert	Austria	Schoeppner, Volker	Germany
Farajian, Majid	Germany	Scotti, Américo	Brazil
Fink, Carolin	USA	Simar, Aude	Belgium
Grewell, David	USA	Sowards, Jeff	USA
Hirata, Yoshi	Japan	Staufer, Herbert	Austria
Hirose, Akio	Japan	Valiente, Asun	Sweden
Hochanadel, Pat	USA	VanderMee, Vincent	Netherlands
Hodúlová, Erika	Slovakia	Vilaça, Pedro	Finland
Kannengiesser, Thomas	Germany	Westin, Elin	Austria
Kautz, Doug	USA	Xiong, Huaping	China

2019 IIW Annual Assembly and Awards

KEY FACTS

45

Countries Represented

486

IIW Annual Assembly Delegates, Experts & Observers Attended Working Units Meetings

80

Young Professionals

115

Students

32

Additional International Conference Registrations

51

Accompanying Persons

140

Papers to *Welding in the World* Journal

7

Resolutions Regarding ISO Standards



72nd IIW Annual Assembly and International Conference

Bratislava, Slovakia

7–12 July 2019



Welded Art Photographic Exhibition

Focus on Welding Innovation: Slovakia hosts 72nd IIW Annual Assembly

Very well organised and hosted by the Welding Research Institute (VUZ) and Slovak Welding Society, the events ran smoothly throughout the week. The summer sun reflected the warmth and friendliness of the Slovakian people and contributed to everyone's enjoyment of accompanying social events.

In a new initiative this year, an international **welded art photographic exhibition** showcased the flexibility and versatility of the welding discipline. Visitors to the exhibition were amazed at how welding can be applied as a creative artistic medium capable of expressing delicate and intricate designs and forms.



A Network of Members

Since its inception in 1948 the IIW has played a central role in advancing welding and joining worldwide through its network of 53 Member Countries. While its Working Units (WUs) provide a forum for technical innovation and the International Authorisation Board supports an education, training, qualification and certification system, it is the **IIW network** of participants which holds the key to global dissemination and uptake of this knowledge. So, the General Assembly of IIW Member Societies plays an important role in the growth, relevance and responsiveness of the organisation.

This year, in addition to the General Assembly, an Extraordinary General Assembly was called to consider the Board of Directors' recommendations regarding the appointment of a Member Society to provide IIW General Secretariat services at the expiry of the current contract with the Institut de Soudure (France). The Assembly approved the appointment of the Istituto Italiano della Saldatura (IIS) Group (Italy) to this role for the five-year period 1 January 2020 to 31 December 2024. IIW President, **Mr. Doug Luciani** (Canada), commended the great work done by all IIW Members to approve the various changes needed to bring this transition smoothly into effect.

Mr Luca Costa will take over as the CEO of the organisation, effective 01 January 2020 and Past President **Prof. Gary Marquis** has now taken the role of Treasurer formerly held by Mr Costa. Intermediate IIW meetings going forward will be held in Genoa, Italy starting IN January 2020.

A presentation was made to thank **Dr Cecile Mayer**, as IIW CEO for the past 10 years, for her hard work, in particular the introduction of modern web-based communications linking all Member Societies and participants in IIW. The General Assembly approved **Mr David Landon** (USA) as President Elect and welcomed **Mr Sorin Keller** (Switzerland) as a Vice President. Outgoing Directors were thanked for their work, and **Dr Roland Boecking** (Germany) and Mr Stefano Pinca (Italy) were approved to join the Board.

Other meetings through the week included the Board of Directors, Technical Management Board, Editorial Board, Working Groups including Regional Activities and Standardisation, and the Study Group Welding Research Strategy and Collaboration. Chairmanship of this group was passed from the long-serving **Prof. Américo Scotti** (Sweden) to **Dr María Asunción Valiente Bermejo** of Sweden's University Väst. After one year of mentoring by former chair **Dr Warren Miglietti** (USA), **Dr Huaping Xiong** (P.R. China) was confirmed as Chair of C-XVII Brazing Soldering and Diffusion Bonding.

This year's meetings of the International **Authorisation Board** (IAB) and its two working groups - delivering globally harmonised personnel qualification and certification systems for personnel and companies - saw the issuing of a revised guideline in the area of Welding Inspection. The modular approach used in this guideline for Welding Inspection education.

Networking Events

Another aspect of the IIW Annual Assembly is the opportunity for people from around the world of welding to gather together socially to create and renew friendships and linkages which enhance professional communication.

This year the traditional events, Opening Ceremony and Welcome Reception, Slovak Evening and Gala Banquet, were hosted by local television personality Ms Vera Wisterová who guided each evening with charm and vivacity. Delegates were welcomed on the opening Sunday evening by **Mr Peter Ďurík**, Chairman of the IIW 2019 Organising Committee, **Mr Juraj Droba**, Chairman of the Bratislava Self-Governing Region and **Dr Ing. Ľuboš Lopatka**, VUZ Chairman of the Board of Directors, before **IIW President Doug Luciani** officially opened the Annual Assembly.

RECOGNITION

The Slovak Evening was held at the Old Market Hall where guests enjoyed typical Slovak food, musical performances, traditional dishes, wine and the popular beer. This ambiance carried through to the Wednesday night banquet where tradition was upheld with not only the passing of the IIW flag to the next Annual Assembly organisers from Singapore, but also the presentation of a titanium rose, to **Ms Petra Zavodna** the event organiser from Guarant International, by **Mr Illia Klochkov** from the E.O. Paton Electric Welding Institute, Ukraine. Guests were entertained by talented cellist Ms Magdalena Izakovičová and later the music of local band Cinnamon. Another highlight of the banquet was the presentation of raffle prizes by IIW Past President **Mr Chris Smallbone**, organiser of the welded art photographic exhibition. Three lucky winners took home stunning photographs of welded art from the exhibition while others were later presented to members of the Board of Directors with thanks for their efforts on behalf of IIW.

Young Professionals

An important facet of IIW's work, through the Board of Directors Task Group Young Leaders chaired by **Mr Ernest Levert** (USA), is the support of young people commencing careers in welding and the encouragement of their participation in IIW. Enjoyable young professionals networking events at the Annual Assembly helped to forge relationships within the group of 80 young delegates and the sharing and harmonising of ideas. An evening at the Danube Brewery proved particularly popular and helped to break down any barriers that may have existed. The events created opportunities to meet experts from around the world and to explore project sponsorship and mentoring prospects. Younger participants were welcomed at the WU meetings and an innovative 'passport' encouraged their participation in all the week's activities. The idea of IIW Student Chapters was progressed, with pilot programmes planned in Canada, Hungary and Thailand.

International Conference

The keynote address at the International Conference, this year the IIW Portevin Lecture, was prepared by **Dr Ing. Jozef Uhrík** (Volkswagen Slovakia) on the topic of 'Automotive industry in Slovakia - history, impact and perspective for the future'. Other invited plenary papers discussed challenges with novel materials, laser and resistance spot welding, and magnetic non-destructive testing. In all 72 presentations in 11 parallel sessions and 70 posters covered topics such as the joining of dissimilar materials and advanced steels, advanced welding processes including laser, electron beam and friction stir welding, Additive Manufacturing in the auto industry, and testing, monitoring and quality control.



2019 IIW Annual Awards

The IIW Annual Awards, presented during the Opening Ceremony, recognise those people who have made significant contributions to the global welding and joining industry and the IIW, and pay tribute to the extraordinary achievements of the eminent individuals in whose honour many of the IIW Awards were named.

2019 AWARDS FOR CAREER ACHIEVEMENTS AND CONTRIBUTIONS TO IIW

WALTER EDSTRÖM MEDAL - Sponsored by the Swedish Delegation

Lauds an individual who has demonstrated outstanding leadership and contributions to the advancement of the IIW as an organisation.



Mr. Min-Chul Hong (Republic of Korea)

Recognising the global importance of the IIW and its activities, he has made remarkable financial contributions to support IIW Annual Assemblies and International Conferences in Korea, Finland, Australia, P.R. China and Indonesia for five consecutive years.

In addition, through ongoing sponsorship he has ensured the regular participation of Korean representatives in IIW Working Units over a number of years. Min-Chul Hong continues to raise the international status of IIW by sponsoring and encouraging these activities.

FELLOW OF IIW

Recognises individuals with a minimum of 10 years' active participation in IIW who have made distinguished contributions to welding science and technology and promoted and sustained the professional stature of the field.



Professor Emeritus Horst Cerjak (Austria) has served as a member of the IIW Board of Directors and Vice-chair of Commission IX Behaviour of Metals Subjected to Welding and is recipient of numerous awards. Cerjak established the International Seminar of Numerical Analysis of Weldability, which has now achieved its 12th event, in 1991 and organised the 61st IIW Annual Assembly in Graz. He is the author or editor of 350 publications and 14 books and currently consults in materials and welding for the hydro power industry.



Professor Dr Carl E. Cross (USA). As senior scientist at the Federal Institute for Materials Research and Testing (BAM), Germany, he directed welding studies on the corrosion-fatigue analysis of magnesium, role of hydrogen in titanium, grain refinement in aluminium, and modelling of solidification cracking. Currently he works at Los Alamos National Laboratory, developing a new process for braze-welding and working to eliminate weld porosity.



Dr Richard Dolby (United Kingdom). From 1979 he held various IIW posts, including Chair of Sub-Commission IXJ for 10 years, and Chair of the Study Group Welding Research Strategy and Collaboration for a similar period. He became Chair of the Technical Management Board in 2000 and was a Vice-President for 3 years until 2003.

RECOGNITION



Professor Leif Karlsson (Sweden). Karlsson's research has contributed significantly to the building of knowledge that has been used to successively move towards development of more advanced products. He has been a major contributor to Commission IX Behaviour of Metals Subjected to Welding throughout his working career, was chair of Sub-Commission IX-H for eight years and a member of the IIW Technical Management Board 2010-2013.



Professor Americo Scotti (Sweden). Scotti dedicated himself to establishing welding studies and research at the Federal University of Uberlandia and founded the Center for Research and Development of Welding Processes, one of the largest welding facilities in Brazil, heading the group from 1992 to his early retirement in 2012. He is currently Professor of Welding Processes at University West, Sweden.

ARTHUR SMITH AWARD - Sponsored by the United Kingdom Delegation

Conferred upon an individual who, over numerous years, has given dedicated service to the objectives of IIW, particularly in the work of the Commissions.



Dr. Kota Kadoi (Japan). With his main research interest is metallurgical phenomena during welding, in particular the hot cracking behaviour and the microstructural evolution of dissimilar welding and laser welding, Kadoi has contributed significantly as an Expert in Commission IX Behaviour of Metals Subjected to Welding and participated in several other Working Units for the past ten years, with three papers published in *Welding in the World*.

CHRIS SMALLBONE AWARD - Sponsored by IIW Member Societies from Bulgaria, Greece, Romania and Serbia

Conferred on an outstanding individual who has made a significant contribution to improving the global quality of life through optimum use and innovation of welding and joining technologies in their region or internationally.



Mr Ray Shook (USA) joined the American Welding Society (AWS) in 2002 and occupied the Executive Director and CEO positions until his retirement at the end of 2017. During his tenure Shook was instrumental in the expansion of AWS international membership and the dissemination of information and knowledge to countries around the world. The acquisition of the Weldmex exhibition and partnership with FABTECH brought the latest welding technology to Mexico.

THOMAS MEDAL - Sponsored by the American Welding Society

Rewards an individual who has been involved in IIW/ISO international standards activities and can deliver a lecture on the incorporation of global studies into the standardisation for welding technologies.



Mr Douglas Kautz (USA) is active in four ISO/TC44 working groups through ANSI and AWS related committees that comment for the United States on ISO standards. Kautz is also chair of the AWS Welding Handbook Committee and chairs committees for two volumes of the Materials Processing Handbooks, pertinent to the welding and metalworking industries. He is a member and past Chair of the AWS High Energy Beam Welding and Cutting Committee and currently serves on the subcommittees for electron beam and laser beam welding and cutting.

2019 AWARDS FOR OUTSTANDING TECHNICAL ACHIEVEMENT

YOSHIAKI ARATA AWARD - Sponsored by the Japanese Delegation

To an individual whose extraordinary achievements in fundamental research in welding-related science and technology have been recognised as significant contributions to the progress of welding engineering.



Professor Leif Karlsson (Sweden). His research, aiming at fundamental understanding of the relationships between weld metal composition, welding procedure and weld metal microstructure and properties, has resulted in more than 250 scientific and technical papers in the areas of high strength steel weld metals, weld metals specially designed to improve fatigue resistance, duplex and superduplex stainless steel, supermartensitic, austenitic stainless weld metals and Ni-base weld metals. Karlsson's research has contributed significantly to the building of knowledge that has been used to successively move towards development of more advanced products.

EVGENY PATON PRIZE - Sponsored by the Ukrainian E.O. Paton Electric Welding Institute

For significant contributions to science and technology through a lifetime dedication to applied research and development in advanced technologies, materials and equipment for welding and allied processes.



Professor David LeRoy Olson has exercised his professional engineering capacity throughout his almost 50 year career by consulting with many industries, large and small, in long and short term collaborations. He has consulted for the Los Alamos National Laboratory since 1983 and continues today. He has received 28 major international awards for his technical contributions to the welding, joining and manufacturing industries. For his great achievements in materials, Olson was awarded the honour of Foreign Member by the National Academy of Sciences of Ukraine in April 2000.

HALIL KAYA GEDIK AWARD - Sponsored by the Turkish Delegation

Recognises a scientist or engineer's significant contributions to the advancement welding science and technology.

CATEGORY A – The Development of Consumables.



Mr David A. Fink (USA) has been active in the work of numerous AWS Technical Committees for well over 40 years and has held many leadership positions including chair of the AWS Technical Activities Committee. As a vigorous proponent of international standardisation for many years, Fink has played an active role in US participation in the IIW since the 1980s, serving as US Delegate to Commissions II and XII and current chair of Sub-commission II-E. He is also the US delegate to ISO/TC44/SC3 Filler Metals. Fink has been the recipient of numerous awards and has authored technical publications and holds several patents.

RECOGNITION

WELDING IN THE WORLD 2018 BEST PAPER AWARD - Sponsored by the IIW

A research, industrial or academic best paper selected from amongst all papers published in six issues of The IIW flagship *Welding in the World* journal in 2018.



Dr Vahid A. Hosseini (Sweden), **Prof. Leif Karlsson** (Sweden), **Dr. Dirk Engelberg** (United Kingdom), and **Dr. Sten Wessman** (Sweden) 'Time-temperature-precipitation and property diagrams for super duplex stainless steel weld metals.'

[photo] WiW Vahid Hosseini.jpg

HENRY GRANJON PRIZE - Sponsored by the Institut de Soudure (French Welding Institute)

Rewards a young professional or student for their paper devoted to research into welding and related technologies.



CATEGORY A – Joining and Fabrication Technology

Dr Hisaya Komen 'Development of hybrid particle method for visualization of weld pool formation and slag formation processes in submerged arc welding'

CATEGORY B – Materials Behaviour and Weldability

Dipl.-Ing. Alexander Nitsche 'Solidification phenomena in creep resistant 9Cr weld metals and their implications on mechanical properties'

CATEGORY C – Design and Structural Integrity

Dr Ing. Jonas Hensel 'Mean stress correction in fatigue design under consideration of welding residual stress'



IIW Member Societies

COUNTRY	ANB	ANBCC	Member(S)	ANB / ANBCC
AUSTRALIA	✓	✓	• Weld Australia	• Weld Australia
AUSTRIA	✓		• Schweißtechnische Zentralanstalt (SZA) • Österreichische Gesellschaft Für Schweißtechnik (ÖGS)	• Schweißtechnische Zentralanstalt (SZA)
BELGIUM	✓		• Institut Belge de la Soudure – Belgisch • Instituut voor Lastetechniek (IBS/BIL)	Association Belge du Soudage ASBL – Belgische Vereniging voor Lastetechniek VZW
BULGARIA	✓		• Bulgarian Welding Society	• Bulgarian welding society
CAMEROON			• Cameroon Welding Association	
CANADA	✓	✓	• Canadian Council of the IIW • Canadian Welding Bureau	• Canadian Welding Bureau (CWB)
CROATIA	✓		• Croatian Welding Society (CWS)	• Hrvatsko Društvo Za Tehniku Zavarivanja
CYPRUS			• Cyprus Welding Institute	
CZECH REPUBLIC	✓	✓	• Czech Welding Society ANB (CWS-ANB)	• Czech Welding Society ANB (CWS-ANB)
DENMARK	✓		• Danish Welding Society	• Force Technology
FINLAND	✓		• Suomen Hitsausteknillinen Yhdistys (SHY)	• Suomen Hitsausteknillinen Yhdistys (SHY)
FRANCE	✓	✓	• Institut de Soudure (IS) • Société Française des Ingénieurs et Techniciens en Soudage (SIS)	• Association Française du Soudage
GERMANY	✓		• Deutscher Verband für Schweißen und verwandte Verfahren (DVS)	• DVS PersZert
GREECE	✓	✓	• Welding Greek Institute (WGI)	• Welding Greek Institute (WGI)
HUNGARY	✓	✓	• Magyar Hegesztési Egyesület (MAHEG) • Ungarian Welding Association (HWA)	• Magyar Hegesztéstechnikai és Anyagvizsgáló Egyesülés (MAHEG)
INDIA	✓	✓	• The Indian Institute of Welding - IIW (India)	• The Indian Institute of Welding - IIW (India)
INDONESIA	✓		• Indonesian Welding Society (IWS)	• IWS - Indonesian Welding Society ANB Committee
IRAN			• Iranian Welding Research & Engineering Center (IWREC)	
ISRAEL			• The Israeli National Welding Committee (INWC)	
ITALY	✓	✓	• Istituto Italiano della Saldatura (IIS)	• IIS CERT Srl
JAPAN	✓		• Japan Institute of Welding (JIW) • The Japan Welding Engineering Society (JWES)	• JWES - Japan Welding Engineering Society
LITHUANIA			• Lithuanian Welders Association	
MALAYSIA	✓		• WIM - Welding Institute of Malaysia Bhd	• WIM - Welding Institute of Malaysia Bhd
MEXICO			• Corporación Mexicana de Investigación en Materiales (COMIMSA) Tecnológico Nacional de México	
MOROCCO			• Association Marocaine du Soudage et des Appareils à Pression (AMS-AP)	
NEW ZEALAND	✓	✓	• Heavy Engineering Research Association (HERA)	• Heavy Engineering Research Association (HERA)
NIGERIA	✓		• Nigerian Institute of Welding (NIW)	• Nigerian Institute of Welding (NIW)
NORWAY	✓		• Norsk Sveiseteknisk Forbund (NSF)	• Norwegian Welding Association
PAKISTAN			• The Pakistan Welding Institute	
PEOPLES RÉPUBLIC OF CHINA	✓	✓	• Chinese Welding Society	• CWTQC - Chinese Welding Training & Qualification Committee

COLLABORATING

COUNTRY	ANB	ANBCC	Member(S)	ANB / ANBCC
PERÚ			• Pontificia Universidad Católica del Perú	
POLAND	✓	✓	• Siec Badawcza Łukasiewicz • Instytut Spawalnictwa	• Instytut Spawalnictwa
PORTUGAL	✓		• Instituto de Soldadura e Qualidade (ISQ)	• Instituto de Soldadura e Qualidade (ISQ)
REPUBLIC OF KAZAKHSTAN	✓	✓	• Karaganda State Technical University (KSTU)	• Kazakhstan Welding Association (KAZWELD)
REPUBLIC OF KOREA	✓		• The Korean Welding and Joining Society (KWJS)	• The Korean Welding and Joining Society (KWJS)
ROMANIA	✓	✓	• Romanian Welding Association (ASR)	• ASR CertPers • ISIM Cert
RUSSIAN FEDERATION	✓	✓	• Russian Welding Society • Self-Regulating Organization Non-commercial Partnership National Agency of Welding Control (SRO NP NAKS)	• Research-training center "Testing and diagnostics" / Prometey-Cert CJSC
SERBIA	✓	✓	• Zavod Za Zavarivanje A.D.	• DUZS-CertPers • Zavod Za Zavarivanje A.D. – Zavod Cert
SINGAPORE	✓		• Singapore Welding Society (SWS)	• Singapore Welding Society (SWS)
SLOVAK REPUBLIC	✓	✓	• Výskumný Ústav Zváracský - Welding Research Institute (VÚZ) • Slovenská zväracská spoločnosť - Slovak Welding Society	• Výskumný ústav zväracský (VUZ) • Certiweld VUZ-PI SR
SLOVENIA	✓	✓	• Slovensko Drustvo Za Varilno Tehniko (SVDT)	• Slovensko Drustvo Za Varilno Tehniko (SVDT)
SOUTH AFRICA	✓	✓	• Southern African Institute of Welding (SAIW)	• Southern African Institute of Welding (SAIW)
SPAIN	✓	✓	• Asociación Española de Soldadura y Tecnologías de Unión (CESOL)	• Asociación Española de Soldadura y Tecnologías de Unión (CESOL)
SWEDEN	✓		• Svetskommissionen - Swedish Welding Commission (SWC) • Swedish Welding Society	• Svetskommissionen
SWITZERLAND	✓		• Schweizerischer Verein für Schweißtechnik (SVS/ASS) • Association Suisse pour la Technique du Soudage	• Schweizerischer Verein für Schweißtechnik (SVS/ASS) • Association Suisse pour la Technique du Soudage
THAILAND	✓		• Welding Institute of Thailand (WIT)	• Welding Institute of Thailand (WIT)
THE NETHERLANDS	✓	✓	• Nederlands Instituut voor Lastechniek (NIL) • Netherlands Institute of Welding	• Nederlands Instituut voor Lastechniek (NIL)
TURKEY	✓		• Gedik Education and Social Benefits Foundation (GEV) • Istanbul Gedik University Middle East Technical University	• Gedik Education and Social Benefits Foundation (GIV) • Turkish Welding Technologies Academy (GEV/TKTA)
UKRAINE	✓	✓	• E.O. Paton Electric Welding Institute	The Paton Welding Institute Training and Qualification Centre • International Scientific-technical Centre of Quality Assurance and Certification 'PATONCERT'
UNITED KINGDOM	✓	✓	• UK Section of the IIW	• TWI Certification Ltd.
UNITED STATES OF AMERICA		✓	• American Welding Society (AWS) • Edison Welding Institute (EWI)	• United States of America Authorised National Body for Company Certification USA ANBCC
VIETNAM	✓		• Vietnam-German Technology Transfer and Training Center (HWC)	• Vietnam-German Technology Transfer and Training Center (HWC)



INTERNATIONAL INSTITUTE OF WELDING

A world of joining experience

Mission

To advance welding and joining through a worldwide network.

Vision

The leading global community linking industry, research and education to the advancement of welding and joining for a safer and sustainable world.



INTERNATIONAL INSTITUTE OF WELDING

A world of joining experience

HEADQUARTERS AND OFFICE

Lungobisagno Istria 15 A • 16141 Genoa • Italy

CONTACTS

+39 010 8341 476

iiw@iiwelding.org • www.iiwelding.org