



*The World Organisation for NDT*

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Volume 9 Issue No 9

November 2021

### CHAIR'S MESSAGE

## NDT resilience and preparing for a post-COVID-19 era

The global COVID-19 death toll reached 4.5 million in early September 2021, a rise of 2 million since my last message. These are unforgettable losses for mankind. At the time of writing, 41.5% of the world's population is vaccinated, with 5.6 billion doses completed, and 31 million doses are administered on a daily basis. Based on this, we can expect around 75% of the global population to be vaccinated by the end of this year.

Countries are opening back up and learning to live with COVID-19 as it becomes endemic in a return towards normality.

The non-destructive testing (NDT) industry is considered to be an essential service in most countries and at the recent ICNDT General Assembly (GA) updates from member societies confirmed that NDT service providers continued to support various industries all year round despite the pandemic. Thus, the industry has proven its resilience during this time. Most NDT certification bodies are now back in full operation. The pandemic has resulted in more blended training, which includes both online and physical modes and is practised globally by training centres. If we can take one positive from this difficult period, we should cherish the fast forward of digitalisation by nearly a decade compared to what was being practised in 2019.

ICNDT successfully held its virtual General Assembly in July 2021, with the majority of members actively participating and submitting both national and regional reports. A further postponement of the 20th World Conference on Non-Destructive Testing (20th WCNDT) was announced by the Korean Society for Nondestructive Testing (KSNT), which will be organising/hosting the event. The 20th WCNDT, which will still be located in Incheon, South Korea, is now scheduled to be held from 30 May to 3 June 2022.

At the time of writing, South Korea is 38% fully vaccinated and, with an additional 25% already having received their first dose, this figure is predicted to reach 80% by the end of this year. The country is expected to re-open fully to visitors during the first quarter of 2022. I encourage all readers who have not yet been vaccinated to do so and get protected.

The regional conferences are well planned in 2023 and I wish them all success in their preparatory work. I would encourage member societies to provide more papers on a range of topics, including advanced NDT methods, remote monitoring, NDE 4.0, artificial intelligence (AI) in non-destructive evaluation (NDE), digitalisation and safety and reliability.

ICNDT supported the first International Virtual Conference on NDE 4.0, which was organised by the German Society for Non-Destructive Testing (DGZfP) and held 14-15 and 20-21 April 2021. The physical conference is due to be held in Berlin, Germany, from 24-26 October 2022. I encourage all member societies to join, learn and support this specialist international group. We look forward to meeting you all in person next year in Germany and Korea.

In Europe, the Re-Open EU website and app provides information on the various measures in place, including quarantine and testing requirements for travellers and the EU Digital COVID Certificate to help you exercise your right to free movement.



*Continued on page two*

### 20th WCNDT rescheduled again for greater participation in better circumstances

The 20th World Conference on Non-Destructive Testing (20th WCNDT) has been rescheduled again and will now take place from 30 May-3 June 2022 at Songdo Convensia, Incheon, South Korea.

### Background surrounding the decision to postpone

The decision was made based on the judgement that rescheduling a few additional months later would allow as many delegates as possible to attend from around the world and give attendees more time to prepare to visit Korea. The rescheduled dates are considered the most convenient for participants travelling internationally and are very close to the original dates of the 13th European Conference on Non-Destructive Testing (ECNDT 2023), which has already been postponed to 3-7 July 2023. The Organising Committee of the 20th WCNDT has closely monitored the current pandemic situation and tried to explore possible options for the successful hosting of a physical conference. At the same time, the health and safety of everyone participating in the conference is the top priority. Although the situation regarding COVID-19 is still unforeseeable, it is greatly hoped that conditions for international travel will improve over the next year alongside increasing worldwide vaccination figures so that participants can enjoy this live conference in Incheon, South Korea.

### The venue

Located in the Incheon Free Economic Zone (IFEZ), Songdo Convensia is readily accessible from the Incheon International Airport (IATA: ICN) and is less than an

*Continued on page two*



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**Material for the next ICNDT Journal should be sent to David Gilbert, email: david.gilbert@bindt.org**

*Chair's message continued from front page*

Meanwhile, Singapore has opened its borders in a cautious and step-by-step manner; vaccinated travel lanes (VTLs) allow for quarantine-free travel from certain countries and border restrictions have been lifted for all travel from Hong Kong and Macao.

As a closing note, let us be positive and patient. With safe management and sensible measures, we will continue to serve the world organisation for NDT and its member societies. Stay safe and stay healthy.

*Ir Sajeesh K Babu, Chair, ICNDT*

## Professor Mitko Minkov Mihovski

5 December 1940 – 27 May 2021

It is with deep regret that we report the death of Professor Mitko Minkov Mihovski, Chair of the Bulgarian Scientific and Technical Society for Defectoscopy since 2002.

Professor Mihovski was born in the city of Sofia, Bulgaria, on 5 December 1940 and graduated with a degree in engineering from LETI, Leningrad, USSR, now Saint Petersburg Electrotechnical University, St Petersburg, one of Russia's oldest higher technical education institutions. He was awarded a doctorate in 1973 and gained his professorship and became a doctor of technical sciences in 1991.

Said to be one of the first higher educational institutions in Europe to specialise in electrical engineering, LETI was – and still is – highly regarded in the fields of radio engineering, telecommunications, process control, computer engineering and IT, electronics, biomedical engineering, management and linguistics. Professor Mihovski was instrumental in extending the scope to include non-destructive testing (NDT) by establishing

the Mechanics, Diagnostics and Non-Destructive Testing Laboratory.

Throughout his career, Professor Mihovski had a close association with the Bulgarian Academy of Sciences. He made a considerable contribution to the development of diagnostics and non-destructive testing in the field of complex non-destructive testing of the structure and properties of materials such as powder metallurgical materials, steels, cast iron, composites and others.

He was a member of the Academia NDT International and was on the editorial board of a number of Bulgarian journals, such as *Defectoscopy*, *NDT Days* and *Machines, Materials and Technologies*, along with several other international journals.

Professor Mihovski supervised more than 40 graduates and 20 PhD students and was involved in the training and education of more than 2500 NDT technicians.

Rest in peace. Gone but never forgotten.



*Continued from front page*

hour from Seoul via public transportation. The conference and exhibition facilities were fully renovated in 2018. Attendees can enjoy a stay in world-class accommodation within walking distance of the venue and experience the local culture.

### Related logistics issues

All paid registrations, accepted abstracts, contracts for exhibition and sponsorships that have been made to date shall be maintained and rolled over to the rescheduled conference. Updated 'important dates' for the submission of additional abstracts and rescheduled registration deadlines in accordance with the new dates are available on the conference website. In addition, the revision of accepted abstracts should be made through the online modification system by logging in to the conference website and visiting 'My Page'. Participants are advised to visit the website regularly to check relevant information about the conference.

The Organising Committee is committed to providing a dynamic technical programme and delivering the best outcomes to all delegates and participants. The 20th WCNDT will be an exciting place to network, exchange ideas and share experiences with professional colleagues in NDT and related fields from all around the world.

For further information, contact the Conference Secretariat, email: secretariat@wcndt2020.com or tel: +82 2 6257 7568, or visit the website at: www.20thwcndt.com

## ICNDT SIG ‘NDT Reliability’ – first meeting and action plan

The reliability of non-destructive testing (NDT) has been a much-discussed topic since the first applications of NDT. Therefore, various standards and practices have been introduced to ensure that the NDT performed is of the highest possible quality. In recent decades, various validation methods have been developed to increase confidence in testing methods using deterministic and probabilistic approaches. In addition to physical capabilities, the influence of application factors and human factors (HFs) on reliability has been widely recognised, adding to the understanding of what influences the reliability of NDT. All of this resulted in the need for exchange between the leading researchers and those applying the methods in the field and led to the initiation of the European-American Workshop (EAW) on Reliability of NDE, which has been held seven times since its inception in 1997.

### Founding of the ‘NDT Reliability’ SIG

Although historically called the European-American Workshop, the event has attracted an international audience over the years. During the last workshop in Potsdam, Germany, in 2017, with international attendance, several voices were raised to give the workshop an international name, which was strongly supported by ICNDT. ICNDT decided to take the topic under its umbrella, which led to the official founding of the Specialist International Group (SIG) ‘NDT Reliability’ within Working Group 3 (WG3) ‘Research and Education’, with the German Society for Non-Destructive Testing (DGZfP) as host society in Singapore in 2017. Dr Daniel Kanzler (Applied Validation of NDT, Germany) and Dr Marija Bertovic (Bundesanstalt für Materialforschung und -prüfung, Germany) took on the role of co-chairing the group. The first international workshop was to be held as a special session at the 20th World Conference on Non-Destructive Testing (20th WCNDT) in 2020 but this had to be postponed first to 2021 and then to 2022 due to the pandemic.

### First meeting of the ‘NDT Reliability’ SIG

In view of the emergence of NDE 4.0, where the requirements and need for reliable validation and qualification are becoming increasingly prominent, and in view of the global pandemic having no definite end date, it was decided not to postpone the first meeting of the group any longer. For this reason, the first meeting of the SIG was organised as a virtual meeting on 24 March 2021. The meeting was attended by 27 experts from around the world, including the USA, India, South Korea, the UK, Finland, Italy and Germany. Many different sectors were represented, including energy, aviation, construction and railway. Stakeholders from different decision-making levels participated and were able to discuss and exchange ideas on an equal footing. These included research institutes, consultants and various industry partners.

The topics discussed were advances in reliability methods, standards, NDE 4.0 and human and organisational factors:

- It was noted that the industries expressing interest in probability of detection (POD) are becoming more diverse. In addition to the aerospace and energy industries, the importance of validated test methods is growing rapidly, especially in the construction, oil & gas and automotive industries. There is still a lot to learn about the suitability of test methods in practice and thus an urgent need for discussion.
- Model-assisted probability of detection (MaPOD) and qualification, structural health monitoring and the further development of the modular reliability model are also important topics that require the group’s continued attention. There is also a need to categorise existing standards and inform the community of the latest developments in various sectors.
- The group also discussed current activities in the area of human factors (HFs). These include the systematic analysis of HFs in the nuclear industry in the USA, the inclusion of HF assessment in the reliability standard and the activities of the DGZfP Human-Machine Interaction subcommittee in the field of NDE 4.0

in Germany. It became clear that there is a great interest in quantifying the HF and including it in simulations. There is also an interest in motivating companies to adopt HF best practices or to demonstrate the benefits of augmentation in NDT.

- NDE 4.0 is an area in which reliability will be the driving force for trust, acceptance and use of artificial intelligence (AI)-driven test systems. NDE 4.0 introduces a new element to the existing modular reliability model: algorithms. The applications of NDE 4.0 will be an important topic in the near future and the NDT reliability community will work together to develop approaches for evaluating these systems without losing sight of NDE 2.0 or 3.0. After all, non-automated testing remains an essential part of critical infrastructure quality assurance.

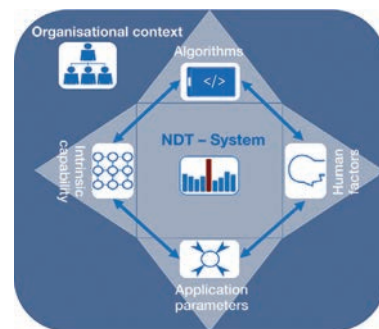


Figure 1. Modular reliability model for NDE 4.0 with the algorithms as new influencing factors (Kanzler 2021)

Finally, a committee of seven members was established. It was agreed that separate meetings should be held for those interested in human factors. The SIG is to meet regularly (about three times per year) and report back to WG3. The International Workshop on NDE Reliability will be held in conjunction with the 20th WCNDT.

### Action plan and next steps

The work of the group should lead to ICNDT guidelines on reliability. The focus of the group will be on the standardisation of reliability assessments, human and organisational factors and reliability for NDE 4.0:

#### Standardisation of reliability evaluations

- Identify relevant industries in need of reliability
- Review existing work
- Review the standardisation gap
- Consider the costs of validation of testing systems
- Prepare an ICNDT Guide.

#### Human and organisational factors

- Explore relevant research, including medical imaging
- Review best practices (guidance/regulations/rules) internationally
- Discuss the possibility of quantifying human factors and including them in the reliability assessment
- Discuss best practices for the transfer of HF knowledge to industry
- Prepare an ICNDT Guide.

#### Reliability for NDE 4.0

- Discuss reliability in the context of NDE 4.0
- Identify reliability topics to be handled by the ‘NDT Reliability’ SIG
- Nominate people to represent this SIG at the ‘NDE 4.0’ SIG
- Deliver input to the ‘NDE 4.0’ SIG.

The group’s next steps include the second SIG meeting this autumn and a separate meeting for those interested in human and organisational factors. SIG ‘NDT Reliability’ currently has nearly 30 active members and additional members are welcome. Anyone who is interested should contact Daniel Kanzler, email: kanzlerd@av-ndt.com, or Marija Bertovic, email: marija.bertovic@bam.de

Daniel Kanzler and Marija Bertovic

[www.20thwcndt.com](http://www.20thwcndt.com)

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Ministry of Science and ICT

Incheon Metropolitan City



20<sup>th</sup> WCNDT

# 20<sup>th</sup> WCNDT

20<sup>th</sup> World Conference on Non-Destructive Testing

Songdo Convensia, Incheon, Korea  
**May 30 (Mon) ~ June 3 (Fri), 2022**

## IMPORTANT DATES

Abstract Submission	<b>31 October 2021</b>
Notification of Acceptance of Abstract	<b>30 November 2021</b>
Submission of Camera-ready Abstract (Mandatory)	<b>31 January 2022</b>
Submission of Extended Abstract or Paper*(Optional)	<b>31 January 2022</b>
Registration and Payment of Presenting Author	<b>31 January 2022</b>
Preliminary Program	<b>28 February 2022</b>

\*For the conference proceedings (NOT for the SCIE journal submission)

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Website: [www.20thwcndt.com](http://www.20thwcndt.com)

ICNDT  
The World Organisation for NDT

KSNT

## PAN-AMERICA

## News from the American Society for Nondestructive Testing

## ASNT Certification Services LLC

The American Society for Nondestructive Testing (ASNT) has established an independent organisation to manage its reputable certification and accreditation activities. ASNT Certification Services LLC launched on 1 July 2021 and will continue providing certification and accreditation services to ASNT members and customers.

ASNT Certification Services LLC will operate under the leadership of a Board of Managers composed of ASNT Board Members and Society Members. The ASNT Board of Directors appointed the organisation's Board of Managers. The new entity will maintain its own policies, operating budgets and financial records, while sharing ASNT staff and office space.

For further information on ASNT Certification Services, visit: <https://asntcertification.org>

## Industry Sector Qualification – Oil &amp; Gas

The Industry Sector Qualification – Oil & Gas (ISQ – O&G) programme continues to expand and grow. ASNT has seen a significant increase and demand for the programme over the last 3-4 months, driven by some owner-operator companies mandating the qualification for technicians working in their facilities. ASNT continues to offer remote ISQ exam sessions at service provider and owner-operator sites around the country. Since January 2021, ASNT has proctored over 400 ISQ Ultrasonic Thickness Testing (UTT) exams. Since the inception of the programme, 533 UTT exams and 19 Ultrasonic Testing Shear Wave (UTSW) exams have been given. Currently in the development phase are the UT Phased Array for Pressure Equipment Welds qualification exams.

For further information on Industry Sector Qualifications, visit: [https://asntcertification.org/Get\\_Certified/ISQ.aspx](https://asntcertification.org/Get_Certified/ISQ.aspx)

## Employer-Based Certification Audit Program

The first overseas company has been accredited by ASNT for its Employer-Based Certification (EBC) Audit Program. The EBC Audit Program provides the NDT industry with a registry scheme that ensures NDT service providers and inspection agencies meet the minimum compliance with either SNT-TC-1A or CP-189 through the employer's Written Practice.

An official registry of all companies and locations that hold an accreditation with ASNT for the Employer-Based Certification Audit Program is available at: [https://asntcertification.org/Accreditation/EBC\\_Program/Registry.aspx](https://asntcertification.org/Accreditation/EBC_Program/Registry.aspx)

## Artificial intelligence/machine learning

The ASNT Board of Directors has established an *ad-hoc* committee to identify a roadmap on how ASNT can support the inclusion of artificial intelligence (AI)/machine learning (ML) practices in non-destructive testing (NDT). This includes advocacy, the development of position papers/books/recommended practice and the development of standards, certification, etc. Further discussions will be held during the ASNT Strategic Planning meeting.

## Upcoming ASNT conferences and events

ASNT has the following events planned for 2021/2022:

- **15-18 November 2021: ASNT 2021 – The Annual Conference**  
Venue: Phoenix, Arizona (virtual attendance also available)
- **16-18 March 2022: International Chemical and Petroleum Industry Inspection Technology Conference (ICPIIT) 2022**  
Venue: Sugar Land, Texas (virtual attendance also available)
- **23-26 August 2022: 7th US-Japan NDT Symposium**  
Venue: Waikoloa, Hawaii

For further information on all upcoming ASNT events, visit: [asnt.org/events](https://asnt.org/events)

## ASNT Publications

*Fundamentals of Eddy Current Testing* (2nd edition), *ASNT Questions & Answers Book: Time of Flight Diffraction (TOFD)* and *ASNT Questions & Answers Book: Phased Array Ultrasonic Testing (PAUT)* are near completion. The outline for the *Nondestructive Testing Handbook: ET* (4th edition) has been approved and ASNT will shortly begin selling the Spanish versions of the *Relevant Discontinuities* flipbooks.

To purchase an ASNT publication, visit: [asnt.org/store](https://asnt.org/store)

## ASNT Learn

Every month, ASNT hosts three different webinar series: NDT Applications; Management of NDT (co-hosted by the Nondestructive Testing Management Association (NDTMA)); and Innovation in NDT. Through ASNT Learn, users can access select presentations from previous events, explore demos from companies and discover more free resources. ASNT's learning opportunities also offer contact hours, which may be applied towards continuing education units (CEUs) or Level III certification renewal points.

For further information on ASNT Learn, visit: [asnt.org/learn](https://asnt.org/learn)

## Membership Mondays

Membership Mondays are monthly virtual gatherings where both new and prospective members can learn about new member programmes, exclusive resources and programme updates. These are hosted by staff from the Membership and Engagement team on the last Monday of each month and there is no cost for attendance.

For further information on Membership Mondays, visit: [asnt.org/MajorSiteSections/Membership/Membership\\_Mondays](https://asnt.org/MajorSiteSections/Membership/Membership_Mondays)

## Career Center

Since 1 April 2021, 144 new job seekers and 35 new employers have registered on the ASNT job board, bringing the total number of users to almost 700. More than 61% of the registered job seekers are members of ASNT. All customers can use the job board but ASNT members receive access to certain content that non-members do not.

For further information, visit: [asnt.org/careers](https://asnt.org/careers)

## Virtual Section

ASNT launched the Virtual Section to connect all of its highly dispersed members. It provides them with educational programming and networking opportunities. With more than 1200 members now affiliated with the Virtual Section, it continues to grow. Attendance at the April and July 2021 meetings (held quarterly) totalled 340 members. Contact hours are available for attendees.

For further information on the Virtual Section, visit: [asnt.org/virtual](https://asnt.org/virtual)

## Digital Imaging for NDT

26-28 April 2022

Denver, Colorado, USA

Contact: ASNT, 1711 Arlingate Lane, PO Box 28518,  
Columbus, OH 43228-0518, USA. Tel: +1 614 274 6003;  
Fax: +1 614 274 6899; Email: [conferences@asnt.org](mailto:conferences@asnt.org)

[www.asnt.org](https://www.asnt.org)

# News from the Brazilian Association of Non-Destructive Testing and Inspection

## ABENDI partners with API

The Brazilian Association of Non-Destructive Testing and Inspection (ABENDI) has signed a Memorandum of Understanding (MoU) with the American Petroleum Institute (API) with the goal of enhancing safety, environmental protection and sustainability. The MoU provides a framework for several joint actions, including:

- An exchange in personnel certification
- The joint promotion of events
- A Portuguese edition of the API standards
- The recognition of ABENDI as an API training provider for courses related to API standards.

## ABENDI's new Board of Directors

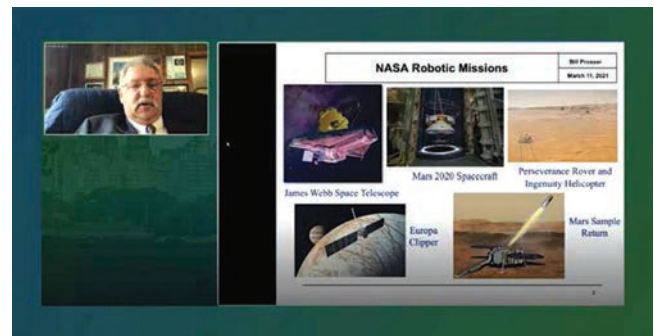
In compliance with the current health regulations that prohibit people from assembling in large groups, the inauguration of the ABENDI presidency has, for the first time, been carried out virtually.

2021-2022 Administration	
President	Angelo Alberto Bellelis
Vice President	Vicente Abate
Board of Directors	Paulo Anchieta da Silva
	Oswaldo Rossi Junior
	Anna Carolina Ferreira
	João Antonio Conte, Executive Director of ABENDI



## CONAENDI held online

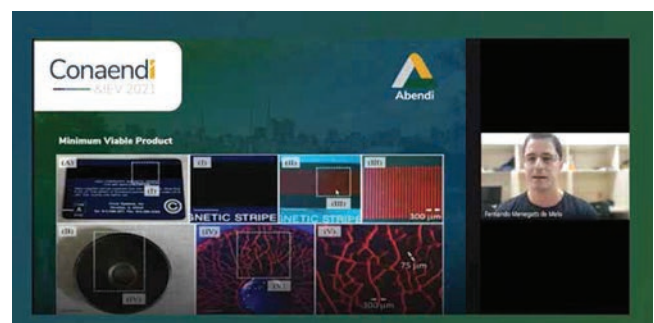
For the first time in ABENDI's history, the traditional National Congress of Non-Destructive Testing and Inspection (CONAENDI) was held entirely online in March this year. Even so, the event was a success, with more than 680 national and international attendees and representatives of the main NDT and inspection product and service companies. The three-day event featured 77 lectures and 64 technical papers divided into five simultaneous sessions. The following images highlight some of the best moments.



Keynote Speaker Dr Willian Prosser, NASA Langley Research Center, presents his paper, titled: 'Applications of NDE for human and robotic spacecraft'



Cristiane Maciel Soares, Universidade Tecnológica Federal do Paraná (Federal University of Technology – Paraná (UTFPR)), presents her paper, titled: 'Segmentation of digital radiographic images of MAG weld beads of automotive components'



'Magneto-fluorescent nanomaterials for NDT' by Fernando Menegatti de Melo, Bruno Bitarães Neto Salgado Brandão and Fernando Tentoni Dias, Metal-Chek do Brasil Indústria e Comércio, is presented

ASIA-PACIFIC

## AINDT secures improved facilities for 16th APCNDT

Late last year, the Australian Institute for Non-Destructive Testing (AINDT) made the decision to postpone the 16th Asia Pacific Conference for Non-Destructive Testing, originally planned for 18-22 October 2021, until Tuesday 28 February to Friday 3 March 2023 in Melbourne, Australia.

The world has been greatly impacted by the COVID-19 pandemic and, given the current challenges with safety and the accessibility of travel to and around Australia, it was agreed that a postponement was the best course of action to take.

The postponement has allowed AINDT to secure improved facilities within the same venue, the Melbourne Convention and Exhibition Centre. The newly completed facilities will offer:

- A dedicated exhibition hall that is significantly larger than the previous option; this space will allow a more

diverse range of items to be displayed at the exhibition without limits on weight or height, providing exhibitors with the ability to fully showcase their equipment and services

- Three large lecture rooms suitable for 180 attendees, directly adjacent to the exhibition space
- Three dedicated meeting rooms, reception desks and a hospitality suite.

The new facilities present significant advantages over the previous offering, allowing AINDT to provide a world-class event at a world-class facility.

Details of the updated exhibition opportunities will be released soon.



## 4th Singapore International NDT Conference & Exhibition – first call for papers

Following the success of its conference and exhibition in 2019, the Non-Destructive Testing Society Singapore (NDTSS) has organised the 4th Singapore International NDT Conference & Exhibition (SINCE 2022), which will take place from 7-8 November 2022 at Marina Bay Sands, Singapore.

With the theme ‘Artificial Intelligence and Vicissitude in NDT’, NDTSS invites authors from all around the world to once again participate.

Abstracts are invited on the following topics:

- Digitalisation in non-destructive testing (NDT)
- Artificial intelligence (AI)/NDE 4.0
- Evolving NDT methods
- Robotic NDT
- NDT in additive manufacturing
- Vicissitude/innovations in the following NDT methods: radiography; ultrasonic testing (manual, time-of-flight diffraction (TOFD), phased array, long-range ultrasonic testing (LRUT), full matrix capture, etc); magnetic particle inspection; magnetic flux leakage; penetrant testing; eddy current testing; thermal infrared imaging; acoustic emission; vibration analysis; neutron radiography; computed tomography; ground-penetrating radar; and impact-echo testing
- Evolution of NDT in the following application fields: aviation; energy; oil & gas; petrochemical; building and construction; offshore and shipbuilding; advanced manufacturing; research and development (R&D); training and certification; biofuel; and clean energy.

Authors should submit their abstracts via email to: admin@ndtss.org.sg, with ‘SINCE 2022’ in the subject line. A registration link will then be provided.



Following the success of SINCE 2019, papers are now invited for the 4th Singapore International NDT Conference & Exhibition

Located in Southeast Asia, Singapore is one of the smallest countries in the world and the smallest in the region. However, despite its humble geographic size, Singapore is a bustling cosmopolitan city of high-rise buildings, landscaped gardens and heritage-rich precincts that embody aspects of both the East and West in many interesting ways.

Marina Bay Sands Hotel consists of three unique hotel towers crowned by the magnificent Sands SkyPark. With over 2500 rooms and suites, Marina Bay Sands Hotel is the biggest hotel in Singapore. The rooms offer views of the South China Sea or Marina Bay and the Singapore skyline.

Important dates	
Abstract submission	Open now until 30 June 2022
Paper submission	No later than 30 September 2022
Early bird registration for speakers	Closes 31 March 2022
Registration	Closes 30 September 2022

**Exhibition**  
FREE for all entrants

**Conference attendees**  
S\$600 (early bird S\$500)

**Speakers/members**  
S\$500 (early bird S\$450)

**Local delegates (including Malaysia)**  
S\$450 (early bird S\$400)

16th ASIA PACIFIC CONFERENCE FOR  
NON-DESTRUCTIVE TESTING 2023

MELBOURNE CONVENTION  
AND EXHIBITION CENTRE



**MELBOURNE  
AUSTRALIA**

28 FEB-3 MAR 2023



**A new date has been announced for APCNDT 2023!**  
With strong interest from Australian and International Exhibitors, Booths are selling fast.  
**Get in now to secure your spot!**



**WELCOME TO**



**AINDT**  
ASIA PACIFIC CONFERENCE  
**APCNDT 2023**

The 16th APCNDT Conference is promising to be the must attend regional event for the Asia Pacific Federation for Non-Destructive Testing and its member societies. The conference will include a technical and scientific program along with technical educational workshops presented by leading NDT and CM experts.

As one of the biggest events on the NDT Calendar for 2023, be sure to **SAVE THE DATE!**



**EVENT DETAILS:**

**When:** 28<sup>th</sup> Feb - 3<sup>rd</sup> March, 2023  
**Host:** Australian Institute for Non Destructive Testing  
**Venue:** Melbourne Convention and Exhibition Centre  
**City:** Melbourne, Australia



For more information about attending, exhibiting, presenting or sponsoring, please visit [apcndt2023.com.au](http://apcndt2023.com.au) or phone +61 3 9328 8831



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## EUROPE

## COFREND Working Group on Additive Manufacturing completes draft of first chapter for technical guide

The French Confederation for Non-Destructive Testing (COFREND) Working Group (WG) on Additive Manufacturing (AM) brings together nearly 50 people from all industrial fields in non-destructive testing (NDT). The objective of the WG is to write a useful guide for the NDT community. The work is focused on the directed energy deposition (DED) and powder bed fusion (PBF) processes. The DED process incorporates metal arc welding.

The guide will include several chapters, which will be published as they are written.

The first chapter lists the existing standards and those in preparation in the field of additive manufacturing, relating to terminology, manufacturing processes, trials, qualification, NDT, acceptance criteria, etc. The draft of chapter one has been completed and includes the following:

- A two-part article published in English in *Soudage et Techniques Connexes (STC)* in July/August 2021 and September/October 2021, including a relatively comprehensive state-of-the-art concerning standardisation and proposals to speed up the production of International Organization for Standardization (ISO)/ASTM standards dedicated to NDT of metal parts produced by AM. These proposals take into account the existing structure of ISO standardisation for welding and foundry. The standards that can serve as a starting point have been identified, as well as the development priorities. This work is carried out in collaboration with UNM 920, which is the entity that represents France in the preparation of ISO/ASTM standards.
- A proposed classification of imperfections likely to be generated in DED and PBF. Knowledge of the defects generated by these

manufacturing processes and their standardised classification are preliminary and essential steps in the definition and application of the acceptance criteria. These classification proposals are inspired by what is proposed for welding in NF EN ISO 6520-1 and should hopefully constitute an important contribution to future ISO/ASTM standards. The classification proposal for DED metal arc welding was published in French in issue No 444 of *STC* in January/February 2021.

For more information, contact: [pole.communication@cofrend.com](mailto:pole.communication@cofrend.com)  
*Daniel Chauveau (IS), WG Leader*

Organised by the British Institute of Non-Destructive Testing

### 59th Annual British Conference on NDT and Materials Testing Exhibition

6-8 September 2022  
International Centre, Telford, UK

Contact: Conference Services, BINDT, Midsummer House, Riverside Way, Bedford Road, Northampton NN1 5NX, UK. Tel: +44 (0)1604 438300; Fax: +44 (0)1604 438301; Email: [conf@bindt.org](mailto:conf@bindt.org)

[www.bindt.org](http://www.bindt.org)



**LES JOURNÉES COFREND**

**LES END, Voir et Prévoir**  
**NDT, see to foresee**

**COFREND DAYS**  
**DU 6 AU 8 JUIN 2023 - JUNE 6<sup>TH</sup> TO 8<sup>TH</sup>**  
**MARSEILLE - PALAIS CHANOT**



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**3 DAYS OF EXHIBITION AND CONFERENCE:**

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COFREND Days will be held in Marseille from 6th to 8th of June 2023. Under the theme of "NDT, See to Foresee", pledge of Quality and Safety, 2,500 French and foreign participants are expected to attend the 10th edition. Organized every 3

years, COFREND days are the rendez-vous of the whole profession; industrials, major contractors, small and medium companies, involved in non-destructive testing (NDT) and whose scope covers all industrial sectors and advanced technology: aeronautics, railways, civil engineering, nuclear power, petrochemicals, iron and steel industry.

Contact: [pole.communication@cofrend.com](mailto:pole.communication@cofrend.com)

## MAROVISZ supports higher education and Hungary’s nuclear project

In July 2020, a cooperation agreement was signed at the University of Dunaújváros, Hungary, by Dr István András, Rector of the university, and Dr Péter Trampus, President of the Hungarian Association for Non-Destructive Testing (MAROVISZ). Dr Mónika Rajcsányi-Molnár, Vice Rector, also took part in the event.

The overall goal of the cooperation agreement is to broaden the technical-scientific relationship between the parties. The basis for this was successful joint activity over the past couple of years. In the framework of the agreement, the university intends to promote non-destructive testing (NDT) among its students. However, the biggest reason for strengthening the relationship is that the Hungarian government appointed the University of Dunaújváros as the Competence Centre on Welding and Material

Testing with a strong focus on NDT, to support the construction of two new nuclear units in the country. Hungary belongs to that relatively small and elite group of countries in which nuclear power plants are in operation and the Hungarian energy strategy makes calculations based on the long-term use of nuclear power. Consequently, after the units currently in operation are retired they will be replaced by nuclear-based capacity. As a significant member of the Competence Centre, MAROVISZ will have to provide its members with technical-scientific expertise on NDT issues and deliver specific NDT courses if requested.



From left to right: the MAROVISZ President, the university Rector and the Vice Rector during the signing ceremony

Of course, the cooperation agreement includes MAROVISZ’s contribution to the development of bachelor’s and master’s courses, as well as the announcement of subjects for BSc and MSc theses and their consultancy.

*P Trampus*

### 34th Control 2022

3-6 May 2022

Stuttgart Exhibition Centre, Stuttgart, Germany

Contact: P E Schall GmbH & Co KG, Gustav-Werner-Straße 6, D – 72636, Frickenhausen, Germany. Tel: +49 (0)7025 92060; Fax: +49 (0)7025 9206880; Email: info@schall-messen.de

[www.control-messe.de/en](http://www.control-messe.de/en)

## The Third International Workshop

### “ANALYSING ART:

### NEW TECHNOLOGIES - NEW APPLICATIONS”

*Florence 2022*  
April 24<sup>th</sup>-27<sup>th</sup>

On behalf of the Organising Committee, you are cordially invited to participate in the third international workshop, Analyzing Art: New Technologies - New Applications dedicated to the application of new technologies in the analysis of cultural heritage. This time the workshop will be held in one of the most magnificent cities in the world, Florence, Italy, from 24-27 April 2022.

The multi-disciplinary workshop will focus on non-destructive testing for the preventive conservation of art as it relates to the sustainability of cultural heritage and will bring together scientists, engineers, curators, restoration experts, conservationists, and art historians. This event will be a unique confluence of art and technology communities and is indicative of the high-tech trends that have been impacting cultural heritage.

Leading experts in this field are expected to attend from all over the world and have prepared a stimulating and informative scientific programme including substantial networking opportunities.

### REGISTRATION

The attendee registration fee is the following and will open September 6<sup>th</sup>, 2021 (welcome reception and banquet included, subject to VAT):

	BEFORE Nov 6 <sup>th</sup> , 2021	AFTER Nov 6 <sup>th</sup> , 2021
Full Registration	£240	£280
Speaker	£160	£200
Student	£100	£120

For further information, contact: Conferences and Events Department, The British Institute of Non-Destructive Testing, Midsummer House, Riverside Way, Bedford Road, Northampton NN1 5NX, UK. Tel: +44 (0)1604 438300; Fax: +44 (0)1604 438301; Email: conf@bindt.org



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**CONTACT INFORMATION**

AIM GROUP INTERNATIONAL - LISBON OFFICE  
EMAIL [ecndt2023@aimgroup.eu](mailto:ecndt2023@aimgroup.eu)  
TEL +351 21 324 50 62



## CALENDAR OF NDT EVENTS

Month	Date	Venue	Event	Contact
November 2021	1-30	Online (available on demand throughout the month)	International Ultrasonic Testing Online Conference 2021 (UT-Online 2021)	md@ndt.net www.ndt.net/events/events.php
	3-5	Buenos Aires Argentina / Online	13th International Conference on Non-Destructive Investigations and Microanalysis for the Diagnostics and Conservation of Cultural and Environmental Heritage (art '21)	art21@aaende.org.ar www.art21.com.ar
	15-18	Phoenix, Arizona USA / Online	ASNT 2021 – The Annual Conference	conferences@asnt.org www.asnt.org
January 2022	30-2 Feb	Kingdom of Bahrain	8th Middle East NDT Conference and Exhibition	conference.officer@bse.bh www.mendt.co
March 2022	16-18	Sugar Land, Texas USA / Online	International Chemical and Petroleum Industry Inspection Technology Conference 2022 (ICPIIT 2022)	conferences@asnt.org www.asnt.org
April 2022	24-27	Florence Italy	Third International Workshop: 'Analysing Art: New Technologies – New Applications'	maev@uwindsor.ca www.bindt.org/events/Seminars-and-Workshops/analysing-art-2022-new-technologies-new-applications
May 2022	3-6	Stuttgart Germany	34th Control 2022	info@schall-messen.de www.control-messe.de/en
	30-3 Jun	Incheon Korea	20th World Conference on Non-Destructive Testing (20th WCNDT)	secretariat@wcndt2020.com https://20thwcndt.com
June 2022	7-9	London UK	18th International Conference on Condition Monitoring and Asset Management (CM 2022)	conf@bindt.org www.bindt.org
	27-1 Jul	Madeira Portugal	European Conference on Fracture 2022 (ECF23)	ecf23@ecf23.eu www.ecf23.eu