

# ICT CONFERENCE 2020



## 10<sup>TH</sup> CONFERENCE ON INDUSTRIAL COMPUTED TOMOGRAPHY

4<sup>th</sup> - 7<sup>th</sup> February 2020 | School of Engineering, Wels Campus

- » Non-destructive Testing
- » 3D Materials Characterisation
- » Dimensional Measurement
- » Industry Cases

[www.ict-conference.com/2020](http://www.ict-conference.com/2020)

Co-Organisers



DEUTSCHE  
GESELLSCHAFT FÜR  
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PRÜFUNG E.V.



UNIVERSITY  
OF APPLIED SCIENCES  
UPPER AUSTRIA

# CONFERENCE ON INDUSTRIAL COMPUTED TOMOGRAPHY

Industrial X-ray computed tomography (CT) is a method whose relevance has increased more and more because of its great advantages. CT is a non-destructive method for measuring components 3-dimensionally in order to find hidden features (e.g. shrink-holes, cracks, inclusions, pores, etc.) in the depth of the material and to determine physical variables like porosity and density.

CT allows the inspection and measurement of hidden and inaccessible specimen characteristics, which is not possible with other techniques. Due to the increasing dispersion of industrial CT, the method development and application areas are growing at a fast pace. Presentations of this conference will give insight into the newest developments as well as the established methods.

**Within this conference the current state-of-the-art and new developments in the following areas will be published:**

- » CT for non-destructive testing of metals, plastics, composites, ceramics and other materials
- » Application of CT in automotive-, aerospace- and material industry
- » CT as a tool for the development of new materials and components
- » CT for 3D material characterisation
- » Geometry determination with macro- and micro-CT
- » Initial sampling inspection and reverse engineering
- » Evaluation and visualisation of CT data
- » New algorithms and software tools for the evaluation and visualisation of CT data
- » Correction and filter methods for the improvement of CT results
- » Quantitative evaluation of CT data
- » Standardisation of CT
- » New CT methods for high resolution, energy dispersive and fast CT
- » Synchrotron-CT methods
- » New developments in CT instrument technology including X-ray detectors and sources
- » Phase contrast and grating interferometer CT

## ORGANISER

University of Applied Sciences  
Upper Austria, Wels Campus

**In cooperation with** the ÖGfZP (Austrian Association for Non-destructive Testing), DGZfP (German Association for Non-destructive Testing), SGZP (Swiss Association for Non-destructive Testing).

## VENUE

University of Applied Sciences  
Upper Austria, Stelzhamerstr. 23,  
4600 Wels/Austria

**Conference Language:** English

## Scientific Program Committee

- » Johann Kastner (FH OÖ, Wels/AT)
- » Gerhard Aufricht (ÖGfZP, Vienna/AT)
- » Valentina Aloisi (NSI, Minnesota/US)
- » Markus Bartscher (PTB, Brunswick/DE)
- » Joost Batenburg (CWI, Amsterdam/NL)
- » Giovanni Bruno (BAM, Berlin/DE)
- » Simone Carmignato (University of Padua/IT)
- » Marius Costin (CEA LIST, Institut Carnot, Saclay/FR)
- » Francesco De Carlo (APS, Aragonne/US)
- » Leonardo De Chiffre (Technical Univ. of Denmark, Lyngby/DK)
- » Wim Dewulf (KU Leuven, Leuven/BE)
- » Gustavo Donatelli (CERTI, Florianópolis/BR)
- » Alexander Fleisch (EMPA, Dübendorf/CH)
- » Eduard Gröller (TU Vienna Vienna/AT)
- » Randolf Hanke (University Würzburg/DE)
- » Christoph Heinzl (FH OÖ Campus Wels/AT)
- » Jakobus Hoffman (Necsa, Pretoria/SA)
- » James Hunter (Los Alamos National Laboratory/US)
- » Valerie Kaftandjian (CEA LIST, Institut Carnot, Saclay/FR)
- » Stefán Kasperl (FHG-EZRT, Fürth/DE)
- » Richard Leach (Univ. Nottingham/UK)
- » Chang-Ock Lee (KAIST, Daejeon/KR)
- » Michael Maisl (DGZfP and FhG-IZfP, Saarbrücken/DE)
- » Andrew Malcolm (A\*STAR, SG)
- » Felix Meli (METAS, Berne-Wabern/CH)
- » Frank Muecklich (Univ. Saarbrücken/DE)
- » Lars Pejryd (University of Örebro, Örebro/SE)
- » Michael Reiter (FH OÖ Campus Wels/AT)
- » Guillermo C. Requena (DLR, Köln/DE)
- » Katja Schladitz (FhG-ITWM, Kaiserslautern/DE)
- » Sascha Senk (FH OÖ Campus Wels/AT)
- » Jan Sijbers (University of Antwerp, Antwerpen/BE)
- » Rainer Stössel (Airbus Group Innovations, Munich/DE)
- » Hiromasa Suzuki (University of Tokyo/JP)
- » Takatsuji Toshiyuki (National Metrology Institute of Japan, Tsukuba/JP)
- » Norman Uhlmann (FhG-IIS, Fürth/DE)
- » Daniel Vavrik (CTU, Prague/CZ)
- » Martine Wevers (KU Leuven/BE)
- » Philip Withers (University of Manchester/UK)
- » Jose A. Yagüe-Fabra (Univ. Zaragoza/ES)
- » Simon Zabler (FhG-IIS, Würzburg/DE)

The abstracts of all the accepted contributions will be published in the book of abstracts in hard copy by a publishing house and distributed at the conference. The papers will also be available online on [www.ndt.net](http://www.ndt.net). Selected authors will have the possibility to submit their paper to of Nondestructive Testing and Evaluation NDTE. And this special issue will be called Special Issue Industrial Computed Tomography - Conference ICT2020 of Nondestructive Testing and Evaluation NDTE published by Taylor & Francis ([www.tandfonline.com](http://www.tandfonline.com)).



# INDUSTRY DAY

**Venue:** University of Applied Sciences Upper Austria, Wels Campus  
Building A, Auditorium

**Language:** English

**Sponsor Talks:** 01:00 pm till 06:00 pm (free entry, registration necessary)

**Talk:** 10 – 15 min

**Registration:** Tue 04<sup>th</sup> February 2020, open from 08:00 am

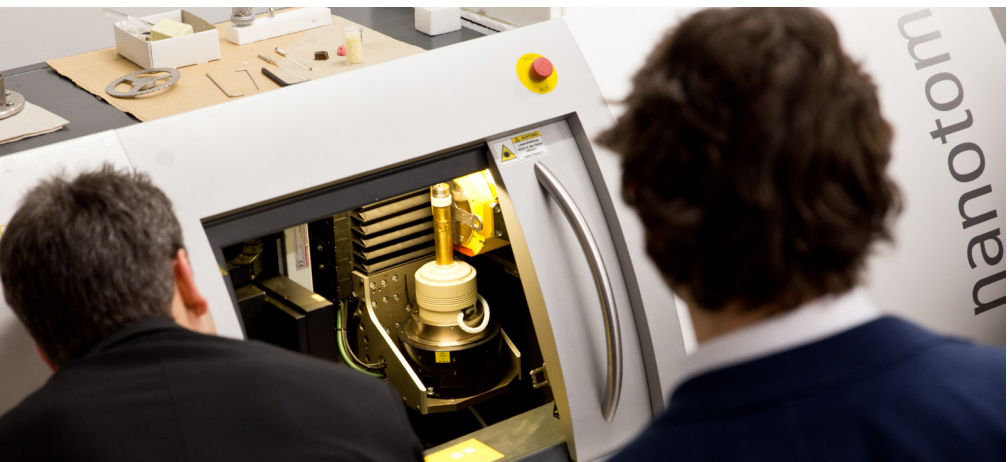
## Tuesday 04<sup>th</sup> February 2020

**01:00 pm – 01:05 pm Welcome**

**01:00 pm – 06:00 pm Talks by Sponsors**

**Lectures of CT Device Manufacturers (by Sponsors)**

- » **Versatile CT Solutions to Increase Productivity & Extend Applications**  
Benjamin Zengerling, diondo GmbH, DE
- » **NSI Developments and Innovations for X-ray Computed Tomography**  
Valentina Aloisi, North Star Imaging France, FR
- » **Towards Automation of Dimensional Measurement using CT**  
Thomas Burgstaller, Werth Messtechnik GmbH, DE,



» **Zeiss X-Ray Series. Make the Invisible Visible**  
Bernhard Bohl, Carl Zeiss Industrielle Messtechnik Austria GmbH, AT

» **Next Generation X-Ray Technology**  
Michael Ulbricht, BHGE Inspection Technologies, DE

» **Nikon CT, Automation and highly configurable System**  
Gábor Szabó, Nikon Metrology, BE

» **TBA**  
YXLON International GmbH, DE

» **Rigaku Nano3DX: Ultra-High Resolution 3D X-ray Microscope**  
Peter Oberta, Rigaku Innovative Technologies Europe s.r.o., CZ

» **Trends in Computed Tomography**  
Frank Herold, VisiConsult X-ray Systems & Solutions GmbH, DE

» **Micron and Submicron-Scale Characterization In-situ experiments with Computed Tomography**  
Roland Le Floc'h, RX Solutions, FR

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## Lectures of Manufacturers of Components and Devices (by Sponsors)

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» **4K Stereo Visualization in Tomography**  
Josef Schneider, Schneider Digital Josef J. Schneider e.K., DE

» **Why High Precision Rotation Stages are Important in your CT**  
Kurt Smets, Lab Motion Systems, BE

» **TBA**  
Varex Imaging, DE

» **High Power Transmission Tubes for Inline CT**  
Jens Peter Steffen, X-RAY WorX GmbH, DE

» **Latest Feature Updates in the Siemens Healthineers Reconstruction Library CERA**  
Frank Dennerlein, Siemens Healthineers, DE

» **Exciting News from Excillum – Increasing Throughput and Resolution!**  
Emil Espes, Excillum AB, SE

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## Lectures of Manufacturers of CT Software (by Sponsors)

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» **CT Data Processing using X-AID**  
Marian Willner, MITOS GmbH, DE

» **Some Possibilities with VG**  
Markus Woyde, Volume Graphics GmbH, DE

# CONFERENCE ON INDUSTRIAL COMPUTED TOMOGRAPHY

**Venue:** University of Applied Sciences Upper Austria, Wels Campus  
Building A, Auditorium

**Language:** English

**Talk:** 15 min + 5 min Discussion

**Short Talk:** 5 min

**Registration:** Wed – Fri, from 05<sup>th</sup> to 07<sup>th</sup> February 2020 – open all day from 08:00 am

## Wednesday 05<sup>th</sup> February 2020

**08:30 am – 08:40 am Welcome and Introduction**

**08:40 am – 09:10 am Keynote (I)**

» **From Prototype Development to Serial Production Supported by Atline- and Inline-XCT Inspection**  
Christian Gusenbauer, Nemak Linz, AT

**09:10 am – 10:30 am Materials Characterisation (I)**

» **Investigation of the through Length Roughness Variation in SLM Manufactured Straight Channels**  
Christopher Gottlieb Klingaa, Technical University of Denmark, DK

» **Mesostructural Simulation of Discontinuous Carbon Fiber Tape Based Sheet Molding Compounds Informed by X-ray Computed Tomography**  
Philipp Siegfried Stelzer, Johannes Kepler Universität, AT

» **CT-NANO XRM - SEM based Computed Tomography**  
Nikolas Westphal, ProCon X-Ray GmbH, DE

» **XCT Inspection in Bonded Aircraft Repairs for Composites**  
Florian Röper, Polymer Competence Center Leoben GmbH, AT

**10:30 am – 11:00 am Break**

**11:00 am – 12:40 pm Materials Characterisation (II)**

- » **Imaging and Quantifying Ice Crystals in Frozen Food Products by the Use of a Newly Developed X-Ray Micro-Computed Tomography Method**  
Hayat Benkhelifa, AgroParisTech, Irstea, FR
- » **Morphological Characterisation of Explosive Powders by X-ray Computed Tomography: When Grain Number Counts**  
Fabien Leonard, BAM - Federal Institute for Materials Research and Testing, DE
- » **Mechanical in-situ Compression Testing of Periodic Surface based Lattices in Polymer Materials using Computed Tomography**  
Lars Pejryd, University of Örebro, SE
- » **Advances in Synchrotron x-ray CT for Materials Characterization and Industrial Applications at the Swiss Light Source**  
Margie Parera Olbinado, Paul Scherrer Institut, CH
- » **Reference Standards for XCT Measurements of Additively Manufactured Parts**  
Anne-Françoise Obaton, Laboratoire national de métrologie et d'essais (LNE), France

**12:40 pm – 01:40 pm Lunch**

**01:40 pm – 03:20 pm Non-Destructive Testing (I)**

- » **Probability of Detection Methods Applied to X-ray Inspection Using Numerical Simulations**  
Michael Reiter, University of Applied Sciences Upper Austria, AT
- » **Graded Material Inspection by X-ray Computed Tomography**  
Nick Brierley, The Manufacturing Technology Centre, UK; DKFZ, DE
- » **Development of Virtual Reference Samples for XCT Measurements of Additively Manufactured Surface Texture**  
Xiao Chen, University of Huddersfield, UK; National Physical Laboratory, Engineering, Materials and Electrical Science, UK
- »  **$\mu$ CT for 3D Size and Shape Analysis of Ice Particles in Jet A-1 fuel**  
Iheb Haffar, IFTS; University Grenoble Alpes; FR
- » **Correlative Tomography – Combining x-ray Nanotomography and FIB/SEM Serial Sectioning to analyze Al-Si Cast Alloys**  
Michael Engstler, Saarland University, DE

**03:20 pm – 03:50 pm Break**

**03:50 pm – 04:50 pm Non-Destructive Testing (II)**

- » **3D X-ray Inspection System for Helicopter Rotor Blades**  
Michael Krumm, RayScan Technologies GmbH, DE
- » **Computed Tomography with Fast-Neutron Sources**  
Micah Shane Johnson, Lawrence Livermore National Laboratory, USA
- » **Additive Manufacturing and Non-Destructive Testing of Topology Optimized Aluminum Components**  
Sascha Senck, University of Applied Science Upper Austria, AT
- » **Reference Standards for XCT measurements of additively manufactured parts**  
Anne-Francoise Obaton, Laboratoire national de métrologie et d'essais (LNE), FR

**04:50 pm – 05:45 pm Short Talks (5 mins)**

- » **Image Metrics for Geometric Calibration of a Cone-Beam Tomographic X-ray System based on a Single Plastic Brick**  
Daniel Suth, Fraunhofer Institute for Integrated Circuits (IIS), DE
- » **X-ray Micro-Computed Tomography for Monitoring the Behavior of Single Particles under Tensile Strain**  
Sara Furtner, University of Applied Sciences Upper Austria, AT
- » **Restoration of Parallel CT Synchrotron Measurements based on John's Consistency Condition**  
Patricio Guerrero, Brazilian Center for Research in Energy and Materials (CNPEM), BR
- » **X-ray Computed Tomography Analysis and the Assessment of Confidence Levels for Industrial Applications**  
Peter Westenberger, Thermo Fisher Scientific, FR
- » **Surface Point Determination in Subvoxel Accuracy from Pre-Segmented Multi-Material Volume Data for Metrological Applications**  
Lukas Joachim Stopp, TU Dresden, DE
- » **Scattering Correction of CBCT Projections for the Quality Enhanced CT Reconstruction Using an Accelerated Monte Carlo Photon Transport Model**  
Ammar Abdulmajeed Alsaffar, University Stuttgart, DE
- » **Fiber Length Distribution via Fiber Endpoints**  
Markus Kronenberger, Fraunhofer Institute for Industrial Mathematics ITWM, University of Kaiserslautern, DE
- » **Voxel Size Calibration for Submicron CT**  
Marek Zemek, Brno University of Technology, CZ



» **Enhancement of MicroCT Images of Steel Cracks using Mathematical Filters**  
Davi Oliveira, Federal University of Rio de Janeiro, BR

## 05:40 pm – 07:45 pm **Poster Exhibition, Dinner & Lab-Tours**

**P-01 Convergence Behaviour of Numerical Measurement Uncertainty Evaluation using a Virtual Metrological Computed Tomography System**  
Florian Wohlgemuth, Friedrich-Alexander-University Erlangen-Nürnberg, DE

**P-02 Parametric Optimization of TIG Welding Process Parameters in Low Alloy Steel Sheets**  
Asif Iqbal Butt, CASE, PK

**P-03 Structural FE Simulations of CT Scanned Microstructures: A Comparison between Idealized and Real Microstructures**  
Matei-Constantin Miron, Johannes Kepler Universität Linz, AT

**P-04 A Toolbox for Sparse Volume Processing for Surface Segmentation of CT Data**  
Luca Pagani, University of Huddersfield, UK

**P-05 Scan Quality Optimization for Measuring Fiber-Metal-Laminates with X-Ray Computed Tomography**  
Florian Thum, University of Augsburg, DE

**P-06 Studies of CT Applications to Development of Technologies for Space Systems Using Gaseous Propellant**  
Elena Tosti, AVIO S.p.A., IT

**P-07 How much Influences Image Quality the Form Error in Industrial X-Ray CT?**  
Dierck Matern, YXLON International GmbH, DE

**P-08 Metal Artefacts Reduction using Submicron Dual-target X-ray Computed Tomography**  
Jiri Vitecek, Brno University of Technology, CZ

**P-09 Investigation of the Independence of the Best Assembly Orientations with Respect to X-ray Source Parameters in Industrial Computed Tomography**  
Natalia Grozman, RWTH Aachen University, DE

**P-10 Hot Crack Assessment of LTT Welds using  $\mu$ CT**  
Florian Voller, Karlsruhe Institute of Technology, DE

**P-11 Micro-computed Tomography for Non-destructive Testing of Ceramic Knee Implants**  
Klemens Trieb, University of Applied Sciences Upper Austria, AT

**P-12 Phantom Development applied to Industrial Tomography in Composite Material Pipeline**  
Wesley Carlos Dias da Silva, Petrobras Petróleo Brasileiro, BR

**P-13 Investigation of Alloy Mixing in Friction Stir Weld Aluminium by Computed Tomography**

Davood Khodadad, University of Örebro, SE

**P-14 3D Spatial Resolution Evaluation for Helical CT According to ASTM E1695 – 95**

Jakub Lázařovský, CEITEC Brno University of Technology, CZ

**P-15 X-ray Source Tracking to Compensate Focal Spot Drifts for Dimensional CT Measurements**

Benjamin Andreas Bircher, Federal Institute of Metrology METAS, CH

**P-16 Orientation Optimization and Making Jigs for X-ray CT Scanning**

Toshimasa Ito, The University of Tokyo, JP

**P-17 Investigation of the Eye Formation of Semi Hard Cheese by using X-ray Computed Tomography Source Tracking to Compensate Focal Spot Drifts for Dimensional CT Measurements**

Jaqueline Auer, University of Applied Sciences Upper Austria, AT

## Thursday 6<sup>th</sup> February 2020

### 08:30 am – 09:00 am Keynote (II)

- » **New Developments about X-ray CT for Metrology**  
Toshiyuki Takatsuji, National Metrology Institute of Japan, JP

### 09:00 am – 10:20 am Metrology (I)

- » **Traceable Measurement of the Instrument Transfer Function in dXCT**  
Jens Illemann, DPTB, DE
- » **Improving Geometry Element Regression Analysis for Dimensional X-ray Computed Tomography Measurements using Locally Determined Quality Values**  
Andreas Michael Müller, Institute of Manufacturing Metrology (FMT), DE
- » **Influence of Different Mounting Strategies on the Random Measurement Error in Industrial Computed Tomography**  
Leonard Schild, Karlsruher Institut für Technologie, DE
- » **Investigation on the effect of filtering and plane creation on differences between XCT and CMM measurements on a miniature step gauge**  
Kamran Mohaghegh, Metrologic ApS, DK

**10:20 am – 10:50 am Break**

**09:00 am – 10:20 am Metrology (II)**

- » **Accuracy of CT Dimensional Measurements Performed on Metal Additively Manufactured Cellular Structures**  
Filippo Zanini, University of Padova, IT
- » **On Quality Criteria regarding Optimal Workpiece Orientation for Computed Tomography Measurements**  
Lorenz Butzhammer, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), DE
- » **Computed Tomography enabling Virtual Assembly**  
Manuel Kaufmann, Fraunhofer Institut für Produktionstechnik und Automatisierung IPA, DE
- » **Analysis of Critical Geometric Errors of CT Systems and Reference Object Recommendations**  
Valentina Aloisi, North Star Imaging, US

**12:30 pm – 01:30 pm Lunch**

**01:30 pm – 03:10 pm Instrumentation and Phase Contrast Imaging**

- » **Panorama Detector for fast Measurements of Large Parts**  
Daniel Weiß, Carl Zeiss IMT GmbH, DE
- » **Investigation of the Impact of Various Robot Properties on a twin Robot-CT System**  
Risheng Kang, Katholieke Universiteit Leuven, BE
- » **CT Performance of Compact X-ray Source with Small Focal Spot using a 950 keV Linear Accelerator**  
Norihiro Matsunaga, Nikon Corporation, JP
- » **Single-shot, high Sensitivity X-ray Phase Contrast Imaging System based on a Hartmann Mask**  
Ombeline de La Rochefoucauld, Imagine Optic, FR
- » **Development of a Full-field phase-CT Nanoscope using Lau Interferometry**  
Hidekazu Takano, Tohoku University, JP

**03:10 pm – 03:40 pm Break**

## 03:40 pm – 05:00 pm **Image Processing and Deep Learning**

- » **Automated Defect Detection for Fast Evaluation of Real Inline CT Scans**  
Maxim Schlotterbeck, Otto-von-Guericke University, DE
- » **Automated Detection of Micrometer-cracks and Delamination in CT Volumes of Previously stressed CFRP Pressure Rods**  
Thomas Michael Schromm, Technical University of Munich , DE
- » **3D Characterisation of Carbon Fibre Reinforced Composite Microstructure via X-ray Computed Tomography and fully Convolutional Neural Network (FCN)**  
Mohammad Saadatfar, Australian National University (ANU), AU
- » **3D Segmentation of CT Volume Data for Mechanical Assemblies with CAD-Guided Edge Enhancement**  
Yuki Doi, The University of Tokyo, JP

## 5:30 pm – 11:00 pm **Bus Transfer to Kremsmünster & Conference Dinner**

# Friday 07<sup>th</sup> February 2020

## 08:30 am – 09:00 am **Keynote (III)**

- » **Combination of in-situ Methods for Characterization of Fiber Reinforced Materials**  
Markus Sause, University of Augsburg, DE

## 09:00 am – 10:20 am **Image Processing, Optimisation and Reconstruction**

- » **An Adaptive Probability Map for the Discrete Algebraic Reconstruction Technique**  
Daniel Frenkel, Universiteit Antwerpen, BE
- » **Techniques for high-fidelity X-ray Micro-tomography of Additively Manufactured Metal Components**  
Andrew Maurice Kingston, Australian National University, AU

» **Analysis and Comparison of Algorithms for the Tomographic Reconstruction of Curved Fibers**

Bernhard Fröhler, University of Applied Sciences Upper Austria, AT

» **Task-Specific Acquisition Trajectories optimized using Observer Models**

Fabian Bauer, Technical University of Munich; Siemens Corporate Technology, DE

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**10:20 am – 10:50 am Break**

**10:50 am – 12:30 pm Artefact Reduction and Optimisation**

» **Optimization of X-ray CT Scan Trajectories using a Quantitative Tuv based local Quality Estimate**

Gabriel Herl, Fraunhofer Application Center CTMT; Deggendorf Institute of Technology, DE

» **X-ray Scatter Removal for Artifact Free CT Imaging**

Martin Krenkel, Carl Zeiss IMT GmbH, DE

» **Deep Learning-based 2D-3D Sample Pose Estimation for X-ray 3DCT**

Alice Presenti, University of Antwerp, BE

» **Benefits of Photon Counting Detectors for Beam Hardening Artifact Reduction in Industrial CT Applications**

Philip Trapp, German Cancer Research Center (DKFZ); Werth Messtechnik GmbH, DE

» **Deblurring Sinograms Using a Convolutional Neural Network to Achieve Fast X-ray Computed Tomography Scanning**

Ryo Yuki, The University of Tokyo, JP

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**12:30 pm – 12:40 pm Closing & iCT 2022 Preview**  
**End of Conference and Lunch**

Pictures and videos will be taken during the event. We point out that these pictures and videos may be published.

This year we want to carry out our iCT Conference according to the Guideline of the Austrian Ecolabel for Green Meetings and Green Events. In this context we try to save resources, avoid waste, and act in an environmentally conscious way in all fields.

We therefore ask our exhibitors to also contribute and take note of the following indications: [www.ict-conference.com/2020](http://www.ict-conference.com/2020):

Button greenmeeting

# SOCIAL PROGRAMME

## Dinner and Exhibition

**Tuesday, 04<sup>th</sup> February 2020**

The University of Applied Sciences Upper Austria invites you to visit the sponsor exhibition and check out the new developments in CT-components, -devices and -software at the Wels Campus. The exhibition is accompanied by a tasty dinner which you may enjoy with the University's own beer inventions and interesting conversation with sponsors and guests alike.

## Dinner and Poster Viewing

**Wednesday, 05<sup>th</sup> February 2020**

Excellent food awaits you after the poster viewing session, which we invite you to enjoy with us. The evening will be accompanied by good live music and some more of the University's own beer inventions – a perfect atmosphere for networking and meeting new people in the field of industrial computed tomography at the Wels Campus.

## Conference Dinner in Kremsmünster at Landhotel Schicklberg

**Thursday, 06<sup>th</sup> February 2020**

For the Conference Dinner we will travel to nearby village Kremsmünster. First, there is the opportunity to enjoy guided tours in the baroque Kremsmünster Abbey. The monastery complex contains precious art from the past decades and a famous historic library. After visiting the Abbey, we will take the bus to Landhotel Schicklberg, an atmospheric countryside-restaurant offering traditional Austrian cuisine.



## CONTACT

Organising Team  
Phone: +43 5 0804 54106  
E-mail: [congress@fh-ooe.at](mailto:congress@fh-ooe.at)

# IMPORTANT INFORMATION

## Registration

For registration please visit the conference website [www.ict-conference.com/2020](http://www.ict-conference.com/2020) and register as participant. For organisational reasons we ask you for timely registration to the iCT-Conference, the Industry Day and the Pre-Conference Workshop.

## Conference Fees

- » Regular ..... € 490,- / € 440,-\*
- » Presenting Author..... € 440,-
- » ÖGfZP, DGZfP, SGZP and DGM Member ..... € 440,-
- » Student..... € 200,-

\* Early bird price until 9th of December 2019

The conference fee includes beverages, lunches, dinners at the Wels Campus and conference dinner, conference abstract booklet and digital proceedings.

## Venue & Accommodation

The conference will be held at the University of FH Upper Austria Wels Campus – Stelzhamerstraße 23 in 4600 Wels. Accommodations have been reserved with special rates for your convenience. You will find relevant contact details and full information on our conference website.

## Parking

Underground parking of FH Upper Austria Wels Campus is possible but limited. Therefore further parking is available in the Traunparkgarage or at underground parking Kaiser-Josef-Platz. (see back-side)

## Last-minute Poster

Until the 1st December you may send in a poster-abstract for the iCT-Conference. If you are interested please e-mail your poster title with a short description to [michael.reiter@fh-wels.at](mailto:michael.reiter@fh-wels.at).

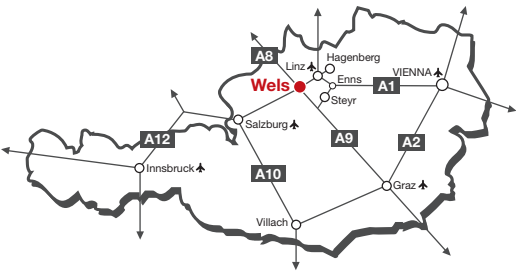
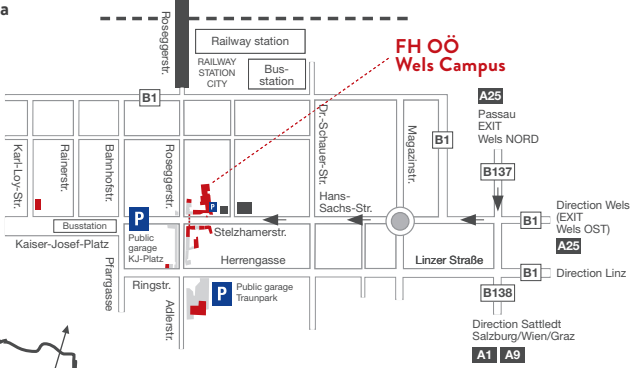


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