Programme Overview ICT2022, Feb. 8th – 11th 2022, Wels/Austria and online

3	key notes	á 30 min
46	talks	á 20 min
36	short talks	á 5 min
	Industry day talks	

Day 1 – Tuesday Feb. 8th

1.00 – 5.00 pm:	Industry cases and talks by sponsors (until now 10 sponsors)
5.00 – 7.00 pm:	Exhibition and dinner

Day 2 – Wednesday Feb. 9th

8.30 – 8.40 am:	Welcome and Introduction
8.40 – 9.10 am:	Key-Note: to be planned
9.10 – 10.30 am:	Instrumentation and XCT methodology (1 h 20)
10.30 – 11.00 am:	Break
11.00 – 12.40 pm:	Methods for optimal CT-measurements and artefact reduction (1 h 40)
12.40 – 1.40 pm:	Lunch
1.40 – 3.40 pm:	New XCT-methods (2 h)
3.40 – 4.10 pm:	Break
4.10 – 6.10 pm:	Short talks – 24 talks á 5 min (2 h)
6.10 – 8.00 pm:	Poster exhibition I and dinner

Day 3 – Thursday Feb. 10th

8.30 – 9.00 am:	**Key-Note "X-ray computed tomography for additive manufacturing" Anton Du Plessis from Stellenbosch University, Stellenbosch, South Africa (30 min)**
9.00 – 10.40 am:	**XCT for materials characterization (1 h 40)**
10.40 – 11.10 am:	**Break**
11.10 – 12.50 am:	**XCT for additive manufacturing (1 h 40)**
12.50 – 01.50 pm:	**Lunch**
1.50 – 3.30 pm:	**XCT-simulation (1 h 40)**
3.30 – 4.00 pm:	**Break**
4.00 – 5.40 pm:	**XCT-data processing and visualization (1 h 40)**
5.40 – 6.40 pm:	**Short talks – 12 talks á 5 min (1 h)**
6.40 – 8.00 pm:	**Poster exhibition II and dinner**

Day 4 – Friday Feb. 11th

8.30 – 9.00 am:	**Key-Note "Qualification and standardization of simulation software for X-ray CT" Tamara Reuter Friedrich-Alexander-University Erlangen-Nuremberg, Germany and Fabricio Borges de Oliveira from Physikalisch-Technische Bundesanstalt (PTB), Germany (30 min)**
9.00 – 10.40 am:	**Dimensional XCT (1 h 40)**
10.40 – 11.10 am:	**Break**
11.10 – 13.10 pm:	**Special applications of XCT (2 h)**
13.10:	**Closing & ICT 2023 preview & lunch**

Detail programme ICT2022

Day 1 – Tuesday Feb. 8th

Industry cases and talks by sponsors (until now 10 sponsors)

Day 2 – Wednesday Feb. 9th

Welcome and Introduction

Key-Note: to be planned

Instrumentation and XCT methodology (1 h 20)

1. **to be planned**
2. **Analytic Derivatives of Motion-compensated Projection Operators for Dynamic Computed Tomography**
   Nguyen Anh-Tuan from University of Antwerp, Belgium
3. **Geometric qualification for robot CT with flexible trajectories**
   Kang Risheng from KU Leuven, Belgium
4. **Arbitrary Path CT by Multi-Robot Imaging Platform (RadalyX)**
   Ghita Mohamed from Radalytica a.s., Czech Republic

Methods for optimal CT-measurements and artefact reduction (1 h 40)

5. **CNN-based pose estimation from a single X-ray projection for 3D inspection of manufactured objects**
   Presenti Alice from University of Antwerp, Belgium
6. **Sinogram interpretability based CT artefact reduction for multi-material workpieces**
   Grozmani Natalia from WZL|RWTH Aachen University, Germany
7. **Scatter Correction and Contrast Improvement of Concrete Objects Using Monte Carlo Method**
   Alsaffar Ammar from University of Stuttgart, Germany
8. **Flexible Generation of Prior Images for Metal Artifact Reduction in Industrial Computed Tomography**
   Zemek Marek from Brno University of Technology, Czech Republic
9. **L0-norm Regularization based Image Deblurring and Porosity Quantification in X-Ray Computed Tomography**
   Wu Dong from KU Leuven, Belgium

New XCT-methods (2 h)

10. **Element differentiation with a Hartmann based Xray phase imaging system**
    De La Rochefoucauld Ombeline from Imagine Optic, France
11. **X-ray speckle-based dark-field imaging of water transport in porous ceramics**
    Saghamanesh Somayeh from Empa, Switzerland
12. **Non-destructive characterization of out-of-plane fiber waviness in carbon fiber reinforced polymers by X-ray dark-field radiography**
    Glinz Jonathan from University of Applied Sciences Upper Austria, Austria
13. **TALINT grating kits for X-ray interferometry in the industrial laboratory**
    Schulz Joachim from Microworks GmbH, Germany

14. **Non-destructive testing of light materials by xray phase-contrast micro-CT**
    Romell Jenny from Exciscope AB, Sweden
15. **The combined use of X-ray refraction and transmission radiography and computed tomography**
    Bruno Giovanni from BAM, Germany

24 Short talks á 5 min (2 h)

Day 3 – Thursday Feb. 10th

Key-Note: "X-ray computed tomography for additive manufacturing"
Anton Du Plessis from Stellenbosch University, Stellenbosch, South Africa (30 min)

XCT for materials characterization (1 h 40 min)

16. **Impact damage quantification of composite hydrogen pressure vessels by using Helix-CT**
    Schumacher David from Bundesanstalt für Materialforschung und -prüfung (BAM), Germany
17. **4-dimensional in-situ imaging of geological processes at 'extreme' conditions using x-rays and neutrons**
    Fusseis Florian from The University of Edinburgh, United Kingdom
18. **In situ tensile testing of short glass fibre reinforced polymers with different fibre orientations: investigation of local strain and defect formation**
    Maurer Julia from University of Applied Sciences Upper Austria, Austria
19. **Fiber orientation analysis of FRP components**
    Slyamov Azat from Xnovo Technology ApS, Denmark
20. **In-situ Stepwise 4D-XCT and Digital Volume Correlation of Flax Fibre Composites Under Compressive Load**
    Soete Jeroen Johan from KU Leuven, Belgium

XCT for additive manufacturing (1 h 40)

21. **CT-based method to measure metal powder characteristics and to study their influence on the quality of additively manufactured parts**
    Zanini Filippo from University of Padova, Italy
22. **On the use of X-ray microtomography to control artificial defect geometries produced by metal additive manufacturing**
    Lesseur Julien from IRT Saint Exupéry, France
23. **AI supported CT data evaluation for additive manufactured parts**
    Schertler Klaus from Airbus CRT, Germany
24. **Evaluation of X-ray computed tomography for surface texture evaluation using an additively manufactured measurement standard**
    Sun Wenjuan from National Physical Laboratory, United Kingdom
25. **FDM sintering shrinkage rate measurements by X-ray computed tomography**
    Leonard Fabien from The University of Manchester, United Kingdom

XCT-simulation (1 h 40)

26. **Probability of Detection applied to X-ray inspection using numerical simulations**
    Yosifov Miroslav from University of Applied Sciences Upper Austria, Austria

27. **Comparison of defect detectability between Computed Tomography inspection and CT simulation using a calibrated defect phantom**
    Galleguillos Carlos from FADA-CATEC, Spain
28. **X-ray phase contrast imaging model: application on tomography with a single 2D phase grating**
    Stolidi Adrien from CEA, France
29. **Virtual CT test environment used to study the effect of individual influence factors**
    Baldo Crhistian Raffaelo from UFABC, Brazil
30. **Novel dedicated reference standards for the qualification of radiography-based computed tomography simulation software**
    Borges de Oliveira Fabricio from Physikalisch-Technische Bundesanstalt (PTB), Germany

XCT-data processing and visualization (1 h 40 min)

31. **The CTSimU software toolbox for CT-related image processing and quality assessment**
    Plotzki David from Bundesanstalt für Materialforschung und -prüfung (BAM), Germany
32. **Degree of local symmetry for geometry-aware selective part visualization on CT volume data**
    Yasunami Nobumichi from University of Tokyo, Japan
33. **Cross-Virtuality Analysis of Rich X-Ray Computed Tomography Data for Materials Science Applications**
    Gall Alexander from University of Applied Sciences Upper Austria, Austria
34. **Quantum Computing and Computed Tomography: A Roadmap towards QuantumCT**
    Schielein Richard from Fraunhofer EZRT, Germany
35. **Using Automated Defect Detection for Aerospace Turbine Blades**
    Butler Celia A. M. from Synopsys & University of Exeter, United Kingdom

12 Short talks (1 h)

Day 4 – Friday Feb. 11th

Key-Note: **"Qualification and standardization of simulation software for X-ray CT" Tamara Reuter Friedrich-Alexander-University Erlangen-Nuremberg, Germany and Fabricio Borges de Oliveira from Physikalisch-Technische Bundesanstalt (PTB), Germany (30 min)**

Dimensional XCT (1h40)

36. **Metrological evaluation of metal artefact reduction methods in dXCT**
    René Laquai from Physikalisch-Technische Bundesanstalt (PTB), Germany
37. **Improving template-based CT data evaluation by integrating CMM reference data into a CAD model-based high fidelity triangle mesh**
    Müller Andreas Michael from Institute of Manufacturing Metrology (FMT), Germany
38. **Deep Learning for improving the efficiency of dimensional measurement workflows with high-resolution X-ray computed tomography**
    Tekawade Aniket from Argonne National Laboratory, USA
39. **Optimization and determination of the volume structural resolution of a coordinate measuring system with sub-micrometer X-ray tube**
    Stopp Lukas Joachim from TU Dresden, Germany

40. **Influence of workpiece orientation for multimaterial measurements in dimensional computed tomography**
    Höger Katja from Karlsruhe Institute of Technology, Germany

Special applications of XCT (2 h)

41. **Clothing Items Classification Based on X-Ray Multi-Shot Imaging for E-Commerce**
    Wittl Simon from TH Deggendorf, Germany
42. **Workflows for assessing lithium-ion battery cells with computed tomography and high-resolution 3D X-ray microscopes**
    Villarraga-Gomez Herminso from Carl Zeiss Industrial Metrology, LLC, USA
43. **XCMT studies of the shape change of rechargeable Zn battery anodes**
    Mancini Lucia from Elettra-Sincrotrone Trieste S.C.p.A. Trieste, Italy
44. **Shape Inspection of Assembly Parts using X-ray CT Projection Images and CAD Models**
    Tan Yingqi from University of Tokyo, Japan
45. **X-ray microCT time-dependent analysis of sandwich bread in different storage conditions**
    Lopes Ricardo T. from Federal University of Rio de Janeiro, Brazil
46. **Phase Change Material numerical simulation: enthalpy-porosity model validation against liquid fraction data from a computed tomograph**
    Guarda Dario from University of Padua, Italy

Poster with a short talk (5 min) – 2+1 h

1. **Development of Projection X-ray Microscope with 100 nm Spot Size**
   Matsunaga Norihito from Nikon Corporation, Japan
2. **Correlative Tomography for micro- and nanoscale defects reduction analysis in Additive Manufactured healable aluminium alloy**
   Pyka Grzegorz from UCLouvain, Belgium
3. **Influence of X-Ray Radiation on Historical Paper**
   Zippert Patrick from Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
4. **Comparison of preparation methods for the structural examination of meat using microcomputed tomography**
   Pointner Tobias from University of Applied Sciences Upper Austria, Austria
5. **Multiscale In-situ investigations of the formation of delamination in CFRP by means of X-ray micro-computed tomography**
   Höglinger Markus from University of Applied Sciences Upper Austria, Austria
6. **Trajectory Optimization in Computed Tomography Based on Object Geometry**
   Matz Annabel from Fraunhofer EZRT & Technical University Munich, Germany
7. **Towards automatic crack segmentation in 3d concrete images**
   Jung Christian from Technische Universität Kaiserslautern, Germany
8. **High-resolution CT simulation of synthetically generated volume porosity in continous CFRP samples**
   Plank Bernhard from University of Applied Sciences Upper Austria, Austria
9. **Comparison of post-process X-ray computed tomography and in-process optical measurements for defects evaluation in additively manufactured metal parts**
   Bonato Nicolò from University of Padova, Italy
10. **Large Deformations of Metal Foams: Dynamic CT: Results, Simulations and Modeling**
    Grießer Andreas from Math2Market GmbH, Germany

11. **Visualization Techniques for the Comparative Analysis of Multivariate Data of Fiber Reinforced Polymers**
    Heim Anja from University of Applied Sciences Upper Austria, Austria
12. **Global digital volume correlation of large volumes: a sub-volume adaptive meshing approach**
    Leonard Fabien from The University of Manchester, United Kingdom
13. **The KIT X-ray CL/CT-Lab – A versatile development platform for X-ray imaging methodology**
    Zuber Marcus from Karlsruhe Institute of Technology, Germany
14. **DTHE: Dual Tomograph for High Energy, a unique microCT plateform**
    Valton Solène from RX Solutions, France
15. **Software for automatic analysis of hairpin-hairpin welds with 3D pore quantification by means of Deep Learning**
    Höhne Robin from Microvista GmbH, Germany
16. **Artefacts from off-focal X-rays in tomography of highly attenuating objects**
    Kingston Andrew from The Australian National University, Australia
17. **Assessing the influence of CT acquisition parameters on flaw detectability through simulation**
    Vienne Caroline from CEA List, France
18. **Digital Twin for Region-of-Interest Computed Tomography of Additive Manufactured Components using an Industrial Robot**
    Herold Frank from VisiConsult X-ray Systems & Solutions GmbH, Germany
19. **High Accuracy Surface Extraction Using the high order differentiation of X-ray CT Values**
    Ota Tomoya from Tokyo Metropolitan University, Japan
20. **A comparison of build quality for a series of different lattice structures of AlSi10Mg**
    Du Plessis Anton from Stellenbosch University, South Africa
21. **Dual Energy CT with local SNR-weights for improved reconstruction of objects with radially anisotropic transmissions**
    Zabler Simon from Fraunhofer IIS, Germany
22. **Geometric errors of CT scanners and their estimation by imaging a reference object**
    Baldo Crhistian Raffaelo from UFABC, Brazil
23. **Traceable determination of non-static XCT machine geometry: An overview**
    Bircher Benjamin Andreas from Federal Institute of Metrology METAS, Switzerland
24. **Automatic scan planning for CT scans**
    Suth Daniel from Fraunhofer EZRT, Germany
25. **Correlative Laser Confocal Microscopy Study and Multimodal 2D/3D Registration as Ground Truth for X-ray Inspection of Internal Defects in LPBF Manufacturing**
    Desrosiers Catherine from Ecole Polytechnique Montreal, Canada
26. **Non-destructive evaluation of patient-specific cranial implants using microcomputed tomography**
    Wittner Claudia from University of Applied Sciences Upper Austria, Austria
27. **Improving throughput and image quality of highresolution 3D X-ray microscopes using deep learning reconstruction techniques**
    Villarraga-Gomez Herminso from Carl Zeiss Industrial Metrology, LLC, USA
28. **Influence of detector misalignments on different geometrical and dimensional measurands using a dedicated test specimen**
    Reuter Tamara from Friedrich-Alexander-University Erlangen-Nuremberg, Germany

29. **Evaluating the geometrical error of dimensional X-ray CT to enhance the measurement accuracy**
    Matsuzaki Kazuya from National Metrology Institute of Japan (NMIJ), Japan
30. **Non-standard acquisition- and reconstruction configurations: adapting legacy CT systems for challenging high-throughput applications**
    Rankin Kathryn Elizabeth from University of Southampton, United Kingdom
31. **VERTEX - versatile in-situ testing rig for X-ray scanners**
    Fila Tomas from Czech Academy of Sciences, Czech Republic
32. **Non-destructive wear analysis of aged polyethylene hip inserts: Comparison of gravimetric investigations with three-dimensional microstructure analysis in micro-CT after 10 million cycles**
    Trieb Klemens from University of Applied Sciences Upper Austria, Austria
33. **Inspection of flexible risers through high energy computed tomography**
    Oliveira Davi from Federal University of Rio de Janeiro, Brazil
34. **Comparison campaign of XCT systems using machined standards representative of additively manufactured parts**
    Obaton Anne-Françoise from Laboratoire National de Métrologie et d'Essais, France
35. **Benchmarking of different reconstruction algorithms for industrial cone-beam CT**
    Rathore Jitendra Singh from CEA List, France
36. **Scanning strategies for composite overwrapped high pressure vessels for hydrogen**
    Jatzlau Philipp from RayScan Technologies GmbH, Germany
37. **Development of a novel gauge filled with resin for X-ray CT**
    Watanabe Mari from National Metrology Institute of Japan (NMIJ), Japan

Poster

1. **Discrete Terahertz tomography: a simulation study**
   Christopher Jana from University of Antwerp, Belgium
2. **Blast and Shock Loading of a Novel and Complex Cellular Material**
   Butler Celia from Synopsys & University of Exeter, United Kingdom
3. **Improving the dimensional accuracy of computed tomography data obtained with highresolution 3D X-ray microscopes**
   Villarraga-Gomez Herminso from Carl Zeiss Industrial Metrology, LLC, USA
4. **AI-Supported Segmentation of Industrial CT Data**
   Lang Thomas from Fraunhofer EZRT, Germany
5. **Evaluation of 3D-printed polymeric triple periodic lattice structure by means of 3D micro-computed tomography and in-situ mechanical testing**
   Karlsson Patrik from Örebro University, Sweden
6. **Comparison of two different approaches for Spatial Resolution determination for X-ray computed tomography with helical scanning trajectory**
   Laznovsky Jakub from Brno University of Technology, Czech Republic
7. **Projection Image Interpolation for 4DCT Data using Optical Flow**
   Komiya Tomoki from Tokyo Metropolitan University, Japan
8. **New Level of high-resolution Computed Tomography with a 450kV Meso Focus x-ray Source**
   Stickler Daniel from YXLON International GmbH, Germany

9. **Deep learning based sinogram interpolation applied to X-ray CT measurements of polymer additive manufacturing parts**
   Bellens Simon from Materialise NV & KU Leuven, Belgium
10. **Effect of detector in-plane rotation misalignment on dimensional measurements using helical CT acquisition**
    Blažek Pavel from Brno University of Technology, Czech Republic
11. **Novel method for stitching of high resolution and large Field-Of-View XCT images**
    Garbout Amin from The University of Manchester, United Kingdom
12. **Characterization of metal 3D-printed triple periodic lattice structure by means of mechanical testing, advanced microscopy and computed tomography**
    Karlsson Patrik from Örebro University, Sweden
13. **3D characterization of materials: a key enabler in material development**
    Pierrat Sebastien from SABIC, Netherlands
14. **Non-destructive characterization of internal surfaces in Laser Powder Bed Fused Inconel 718 channels after post-treatment**
    Kasperovich Galina from German Aerospace Center (DLR), Cologne, Germany
15. **The long journey to the training of a deep neural network for segmenting pores and fibers**
    Yosifov Miroslav from University of Applied Sciences Upper Austria, Austria
16. **Influence of surface extraction algorithms on the porosity analysis of a multilayer carbon-fiber workpiece using X-ray computed tomography**
    Yagüe-Fabra José A. from I3A, Universidad de Zaragoza, Spain
17. **Fully volumetric tracking of melting fronts in phase change materials with computed tomography**
    Martinez-Garcia Jorge from Lucerne University of Applied Sciences and Arts, Switzerland
18. **Identification of steel wire rope technical condition based on the residual magnetic field measurement**
    Mazurek Paweł from AGH University of Science and Technology, Poland

Late posters can be still included!