

Conference Agenda

Session

SES-01: Non-destructive Testing I

Time: Wednesday, 05/Feb/2025: 9:10am - 10:30am

Presentations

One-Shot Segmentation of Battery Cells with Gradual Learning

Johann Christopher Engster¹, Nele Blum¹, Laura Hellwege^{1,2}, Thorsten M. Buzug^{1,2}, Maik Stille¹

¹Fraunhofer IMTE, Fraunhofer Research Institution for Individualized and Cell-Based Medical Engineering, Germany; ²Institute of Medical Engineering, University of Lübeck, Germany

Transverse cracking in glass fibre-reinforced composites monitored with synchrotron X-ray multi-projection imaging

Elise Van Vlierberghe¹, Jeroen Soete¹, Eleni Myrto Asimakopoulou², Zisheng Yao², Julia Rogalinski², Yuhe Zhang², Kannara Mom³, Bratislav Lukić^{4,5}, Christian Breite¹, Pablo Villanueva Perez², Yentl Swolfs¹

¹Department of Materials Engineering, KU Leuven, Belgium; ²Department of Synchrotron Radiation Research, Lund University, Sweden; ³CREATIS, INSA Lyon, France; ⁴European Synchrotron Radiation Facility, France; ⁵Henry Royce Institute, Department of Materials, United Kingdom

High-energy dual-energy computed tomography for the characterization of large and thick objects

Alix SARDET, Daniel ECK, Nicolas ESTRE, Frédéric MOUTET, Emmanuel PAYAN, Cécilia TARPAU

CEA DES IRESNE DTN SMTA LMN, France

X-ray micro-laminography of customized frequency acoustic panels

Lidija Korat Bensa, Uroš Bohinc, Rok Rudolf, Rožle Repič

Slovenian National Building and Civil Engineering Institute, Slovenia

Conference Agenda

Session

SES-02: Material Characterization I

Time: Wednesday, 05/Feb/2025: 11:00am - 12:40pm

Presentations

CO2 adsorption on microporous metal–organic frameworks unravelled by high-resolution X-ray computed tomography

Diponker Karmoker^{1,3}, Jorge Martinez-Garcia², Damian Gwerder², Benjamin Fumey¹, Philipp Schuetz²

¹Comptence Centre for Thermal Energy Systems and Process Engineering, Lucerne University of Applied Sciences and Arts; ²Competence Centre for Thermal Energy Storage, Lucerne University of Applied Sciences and Arts,; ³Department of Civil Engineering, Indian Institute of Technology Roorkee

Scale-up of zinc-air battery electrodes enhanced by 3D X-ray imaging

Benedetto Bozzini¹, Alessandro Alleva¹, Elisa Emanuele¹, Sheraz Gul², Tianzhu Qin², Wenbing Yun², Lucia Mancini³

¹Department of Energy, Politecnico di Milano, via Lambruschini 4, 20156 Milano, Italy; ²Sigray, 1590 Solano Way, Suite A, Concord, CA 94520, USA; ³Slovenian National Building and Civil Engineering Institute (ZAG), Dimičeva ulica 12, SI-1000 1000 Ljubljana, Slovenia

X-Ray imaging method for in-situ study of particle-laden flows

Julian Kattinger, Phi-Long Chung, Mike Kornely, Julian Ehrler, Marc Kreutzbruck, Christian Bonten

University of Stuttgart, Institut für Kunststofftechnik, Germany

Highly attenuating tracer fibers for fiber orientation determination in short-fiber-reinforced plastics

Mike Kornely, Marc Kreutzbruck

University of Stuttgart, Institut für Kunststofftechnik, Germany

Assessment of the variability of unidirectional prepregs at multiple scales

Silvia Gomasasca¹, Amin Hosseini¹, Ran Tao¹, Daniel Peeters¹, Bilim Atli-Veltin¹, Clemens Dransfeld¹, Benedikt Boos², Christoph Queck², Martin Gurka²

¹Delft University of Technology, Netherlands, The; ²Leibniz-Institut für Verbundwerkstoffe GmbH, Germany

Conference Agenda

Session

SES-03: Deep Learning and Visualization Techniques

Time: Wednesday, 05/Feb/2025: 1:40pm - 3:20pm

Presentations

Super-resolution X-ray tomography for architected lattice materials using artificial intelligence

Antoine Klos, Luc Salvo, Pierre Lhuissier

Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, F-38000 Grenoble, France

DIPNet: Integrating Deep Image Prior into Kernel Basis Network for Noise Suppression in Edge Illumination Phase Contrast X-ray Imaging

Neam Halat, Jan Sijbers, Jan De Beenhouwer

imec vision lab, Department of Physics, University of Antwerp

Dual Domain Swin Transformer based Reconstruction method for Sparse-View Computed Tomography

Jonas Van der Rauwelaert, Caroline Bossuyt, Jan Sijbers

University of Antwerp, Belgium

Visual Exploration of Large SCT Scans using AccuStripes

Anja Heim¹, Thomas Lang¹, Christoph Heinzl^{1,2}

¹Fraunhofer Institute for Integrated Circuits IIS, Division Development Center X-ray Technology, Germany; ²University of Passau, Germany

Deep Incremental Angle Refinement Model for Limited-Angle CT Reconstruction - A Case Study on Concrete Specimens

Xingyu Liu, Guangpu Yang, Faizan Ahmad, Ammar Alsaffar, Steffen Kiess, Sven Simon

Department of Computational Imaging Systems, ITI, University of Stuttgart, Germany

Conference Agenda

Session

SES-04: Instrumentation and New Methods I

Time: Wednesday, 05/Feb/2025: 3:50pm - 5:10pm

Presentations

Exploring image quality improvements in high-speed dual threshold photon-counting micro-CT

Till Dreier¹, Spyridon Gkoumas²

¹Excillum AB, Sweden; ²DECTRIS Ltd., Switzerland

High-Energy Microtomography using Synchrotron Radiation at PETRA III / DESY

Felix Beckmann, Julian Moosmann, Joerg U. Hammel, Fabian Wilde

Helmholtz-Zentrum Hereon, Germany

Gulliver – A new kind of industrial CT

MICHAEL SALAMON¹, NILS REIMS¹, DIMITRI PRJAMKOV¹, DENNIS AK², MARKUS KRONENBERGER³, KATJA SCHLADITZ³, CLAUDIA REDENBACH⁴, SZYMON GRZESIAK⁴, CHRISTOPH DE SOUSA⁴, CATHERINA THIELE⁴, MATTHIAS PAHN⁴

¹Fraunhofer-Institut für Integrierte Schaltungen (IIS), Germany; ²OHB Digital Connect GmbH, Germany; ³Fraunhofer-Institut für Techno- und Wirtschaftsmathematik (ITWM), Germany; ⁴Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau (RPTU), Germany

Correcting for focal spot drift in edge illumination X-ray phase contrast imaging

Nicholas Francken, Jonathan Sanctorum, Ben Huyge, Jan Sijbers, Jan De Beenhouwer

University of Antwerp, Belgium

Conference Agenda

Session

SES-05: Deep Learning-based Inspection

Time: Thursday, 06/Feb/2025: 9:00am - 10:20am

Presentations

Single-Shot X-ray to Multi-View Projections for 3D Pork Shoulder Bone Analysis

Michiel Pieters¹, Pieter Verboven¹, Bart Nicolai^{1,2}

¹Ku Leuven, Belgium; ²Flanders Centre of Postharvest Technology, Belgium

Superimposing Synthetic Defects into Real CT Scans for Advanced Probability of Detection Evaluation

Miroslav Yosifov^{1,2}, Bernhard Fröhler¹, Jan De Beenhouwer², Jan Sijbers², Johann Kastner¹, Christoph Heinzl^{3,4}

¹University of Applied Sciences Upper Austria, Wels, Austria; ²imec-Vision Lab, Dept. of Physics, University of Antwerp, Universiteitsplein 1, 2610 Antwerpen, Belgium; ³University of Passau, Innstraße 43, Passau, Germany; ⁴Fraunhofer Institute for Integrated Circuits IIS, Division Development Center X-ray Technology, Flugplatzstraße 75, Fürth, Germany

Combining Deep Learning and scatterControl for High-Throughput X-ray CT based Non-Destructive Characterization of Large-Scale Casted Metallic Components

Amir Koushyar Ziabari¹, Mohamed Hakim Bedhief², Obaidullah Rahman¹, Singanallur Venkatakrisnan¹, Paul Brackman³, Peter Katuch²

¹Oak Ridge National Lab, United States of America; ²Carl ZEISS IMT GmbH; ³ZEISS Industrial Quality Solutions

Proximal Neural Networks based reconstruction for few-view CT applications

Hoang Trieu Vy LE¹, C. Bossuyt², J. Escoda¹, M. Costin¹, J. De Beenhouwer², J. Sijbers²

¹CEA, France; ²IMEC - Vision Lab, University of Antwerp, 2610 Antwerpen, Belgium

Conference Agenda

Session

SES-06: Reconstruction, Algorithms and Optimization I

Time: Thursday, 06/Feb/2025: 10:50am - 12:30pm

Presentations

From Uncertainty to Calibration: Online Pose Estimation of an Industrial Twin Robotic Computed Tomography System with Unknown Fiducials

Niklas Handke¹, Yiqun Q. Ma², Anton Weiss¹, Simon Wittl¹, Gabriel Herl¹

¹Deggendorf Institute of Technology; ²Johns Hopkins University

Surface fitting of geometric defects in CT scans of lattice structures

Dorian BICHET^{1,2}, Robin BOUCLIER^{1,2}, Jean-Charles PASSIEUX², Jean-Noël PERIE²

¹Institut de Mathématiques de Toulouse, France; ²Institut Clément Ader, France

Compensating Sparse-view Inline Computed Tomography Artifacts with Neural Representation and Incremental Forward-Backward Network Architecture

Manuel Buchfink¹, Faizan Ahmad¹, Guangpu Yang¹, Charles Clark¹, Ahmed Baraka², Xingyu Liu¹, Sven Simon¹

¹Department of Computational Imaging Systems, ITI, University of Stuttgart, Germany; ²RWTH Aachen University, Campus-Boulevard 30, 52074 Aachen, Germany

Improving CT reconstructions of multi-material assemblies by multi-position data fusion: a case study

Javier Sánchez Prieto, Filippo Zanini, Simone Carmignato

University of Padova, Italy

An Adaptive View Selection Algorithm for Practical Cone-Beam CT Reconstruction

Jingsong Lin¹, Singanallur Venkatakrishnan², Obaidullah Rahman², Gregery Buzzard¹, Amirkoushyar Ziabari², Charles Bouman¹

¹Purdue University, United States of America; ²Oak Ridge National Lab, United States of America

Conference Agenda

Session

SES-07: Reconstruction, Algorithms and Optimization II

Time: Thursday, 06/Feb/2025: 1:30pm - 3:10pm

Presentations

Uncertainty quantification of CT regularized reconstruction within the Bayesian framework

Negin Khoeniha, Patricio Guerrero Prado, Wim dewulf

KU Leuven, Belgium

Volumetric Denoising of XCT Data Using Quantum Computing

Anastasia Papadaki, Thomas Lang, Kilian Dremel, Dimitri Prjamkov, Markus Firsching, Mareike Weule, Stefan Kasperl, Theobald OJ Fuchs

Fraunhofer Institute of Integrated Circuits IIS, Division Development Center X-ray Technology, Flugplatzstraße 75, 90768 Fürth, Germany

Differentiable Few-view CT-Reconstruction for Arbitrary CT-Trajectories including Prior Knowledge

Linda-Sophie Schneider^{1,2}, Adrian Waldyra², Yipeng Sun^{1,2}, Andreas Maier^{1,2}

¹Pattern Recognition Lab, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; ²Fraunhofer EZRT, Flugplatzstraße 75, 90768 Fürth, Germany

Segmentation of a CFRP weave structure for material characterization and simulation

Benedikt Boos, Kevin Chen, Martin Gurka

Leibniz-Institute for Composite Materials, Germany

Learning-Based Image Restorations of Sparse-View CT Data: Is It Reliable?

Philip Maurice Trapp^{1,2}, Elias Eulig^{1,3}, Joscha Maier¹, Frederic Ballach², Raoul Christoph², Ralf Christoph², Marc Kachelrieß^{1,3}

¹German Cancer Research Center (DKFZ), Germany; ²Werth Messtechnik GmbH, Germany; ³Ruprecht Karl University of Heidelberg, Germany

Conference Agenda

Session

SES-08: Non-destructive Testing II

Time: Thursday, 06/Feb/2025: 3:40pm - 5:00pm

Presentations

Application of in-situ Tensile Testing and XCT for Characterization on Damage Behavior of Nonmetallic Inclusion in Steel

Michaela Hufnagl^{1,2}, Sergiu Ilie², Johann Angeli¹, Johann Kastner¹

¹Research Group Computed Tomography, University of Applied Sciences Upper Austria, Stelzhamerstraße 23, 4600 Wels, Austria; ²voestalpine Stahl GmbH, voestalpine-Straße 3, 4020 Linz, Austria

Glovebox-CT to Enable 3D Imaging of Reactive or Hazardous Samples

Nick Brierley¹, Darius Zanke¹, Luke Peche¹, Peter Habenschaden²

¹diondo GmbH, Germany; ²M. BRAUN Inertgas-Systeme GmbH, Germany

Digital fiber length determination for injection molded glass fiber reinforced composite materials

Andreas Griesser, Nelly Nunheim, Oliver Rimmel, Erik Glatt, Anne Blumer

Math2Market GmbH, Germany

Surface Quality Monitoring and Improvement for Dimensional Metrology in Inline CT by Denoising with Neural Networks and Fast Surface Quality Metric

Faizan Ahmad¹, Ahmed Baraka², Steffen Kiess¹, Dominik Wolfschläger², César Cardona Marin¹, Robert Schmitt², Sven Simon¹

¹Department of Computational Imaging Systems, ITI, University of Stuttgart,; ²IQS Intelligence in Quality Sensing, Laboratory for Machine Tools and Production Engineering WZL | RWTH Aachen University

Conference Agenda

Session

SES-09: Material Characterization II

Time: Friday, 07/Feb/2025: 9:00am - 10:20am

Presentations

Sparse-view Material Decomposition for Spectral X-ray CT using Neural Radiance Fields

Takumi Hotta^{1,4}, Tatsuya Yatagawa², Yutaka Ohtake¹, Toru Aoki^{3,5}

¹The University of Tokyo; ²Hitotsubashi University; ³Shizuoka University; ⁴Zodiac Co., Ltd.; ⁵ANSeeN Inc.

Volumetric sub- μ -CT imaging for forensic wood identification

Jannik Stebani^{1,2}, Tim Lewandrowski³, Kilian Dremel¹, Simon Zabler^{1,4}, Volker Haag³

¹Fraunhofer Development Center X-ray Technology EZRT; ²Lehrstuhl für Röntgenmikroskopie, Julius-Maximilians-Universität; ³Thünen Institute of Wood Research; ⁴Deggendorf Institute of Technology

Determination of the image quality in computed tomography and its standardisation

Anne-Françoise Obaton¹, Uwe Ewert², Holger Roth³, Janka Wilbig¹, Clément Remacha⁴, Nicolas Cochenec⁴, Lionel Gay⁴, Marko Katic⁵

¹Laboratoire National de Métrologie et d'Essais (LNE), France; ²Kowotest GmbH, Germany; ³Waygate Technologies, Baker Hughes, Germany; ⁴Safran Tech, France; ⁵University of Zagreb, Croatia

Single X-ray Projection Material Decomposition using a Mesh Projector

Fleur Linsen¹, Domenico Iuso^{1,2}, Jan Sijbers^{1,2}

¹imec-Vision Lab, Department of Physics, University of Antwerp, Antwerp, Belgium; ²DynXlab: Center for 4D Quantitative X-ray Imaging and Analysis, Antwerp, Belgium

Conference Agenda

Session

SES-10: Instrumentation and New Methods II

Time: Friday, 07/Feb/2025: 10:50am - 12:30pm

Presentations

Automatisation developments on ESRF-EBS BM05 beamline

Fabien Léonard, Florian Jürries, Elodie Boller

The European Synchrotron Radiation Facility, France

Safeguarding accuracy for CT imaging with industrial robots: Efficient calibration methods for arbitrary trajectories

Anton Weiss¹, Simon Wittl¹, Gabriel Herl¹, Simon Zabler¹, Anna Trauth², Markus G. R. Sause²

¹Deggendorf Institute of Technology, Germany; ²Institute for Materials Resource Management, University of Augsburg

Cracks in refractory concrete: Transgranular or intergranular?

Christian Jung¹, Katja Schladitz², Claudia Redenbach¹, Anna Nowacka^{1,2}, Jana Hubálková³

¹RPTU, Germany; ²Fraunhofer ITWM, Germany; ³TUBAF, Germany

CT of Clinch Points – Enhancing Interface Detectibility Using Galvanised Layers of Radiopaque Materials

Daniel Köhler, Robert Kupfer, Juliane Troschitz, Maik Gude

Institute of Lightweight Engineering and Polymer Technology, TUD Dresden University of Technology

Conference Agenda

14th Conference on Industrial Computed Tomography (ICT 2025)

Session

P-01: Poster Session, light dinner & live music

Time:

Wednesday, 05/Feb/2025:

5:30pm - 7:30pm

Presentations

In-situ holotomography to study longitudinal debonding in glass fibre-reinforced composites

Yentl Swolfs, Thanasis Chatziathanasiou, Martin Diehl, Mahoor Mehdikhani, Christian Breite

KU Leuven, Belgium

Enhanced Geometrical Self-calibration of planar CT

Erfan Bagheri³, **Amirhossein Saedpanah**^{1,2}, **Abbas Mohammadkazemi**^{1,4}, **Seyed Roohollah Hosseini**^{1,5}

¹Arman Moj Fanavar co, Iran, Islamic Republic of; ²Department of Physics, Sharif university of technology, Tehran, Iran; ³Department of Survey Engineering and Spatial Information, University of Tehran, Tehran, Iran; ⁴Department of physics, University of Qom, Qom, Iran; ⁵Department of Physics, University of Tehran, Tehran, Iran

Optimization of Analytical Reconstruction Algorithms for Arbitrary CBCT Trajectory Using Deep Learning

Yuzhong Zhou¹, **Linda-Sophie Schneider**^{1,2}, **Yipeng Sun**^{1,2}, **Andreas Maier**^{1,2}

¹Fraunhofer EZRT, Germany; ²Friedrich-Alexander-Universität Erlangen-Nürnberg

Compensating CBCT Motion Artifacts with Any 2D Generative Model

Yipeng Sun^{1,2}, **Linda-Sophie Schneider**^{1,2}, **Mingxuan Gu**¹, **Siyuan Mei**¹, **Siming Bayer**¹, **Andreas Maier**^{1,2}

¹Pattern Recognition Lab, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; ²Fraunhofer EZRT, Flugplatzstraße 75, 90768 Fürth, Germany

Denosing and deconvolving CT images of unknown origin: comparing linear Wiener-deconvolution with deep convolutional neural network Noise2Inverse

Simon Zabler¹, **Antoine Klos**², **Luc Salvo**², **Mazyar Farahmandi**¹, **Simon Wittl**¹

¹Deggendorf Institute of Technology, Germany; ²Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, France

Influence of Optical Features on Image Reconstruction Quality in Lens-Coupled X-Ray Detectors

Hamidreza Safari^{1,2}, **Pouya Parvizian**¹, **Amirhossein Saedpanah**^{1,3}, **Abbas Mohammadkazemi**^{1,4}, **Seyed Roohollah Hosseini**^{1,5}

¹Arman Moj Fanavar co, Iran, Islamic Republic of; ²School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran; ³Department of physics, Sharif university of technology, Tehran, Iran; ⁴Department of physics, University of Qom, Qom, Iran; ⁵Department of Physics, University of Tehran, Tehran, Iran

Task-Based Optimization of CT Trajectories Using a Learned Defect Visibility Metric

Linda-Sophie Schneider^{1,2}, **Anshul Dhingra**^{1,2}, **Andreas Maier**^{1,2}

¹Friedrich-Alexander-Universität Erlangen-Nürnberg, FAU; ²Fraunhofer-Entwicklungszentrum Röntgentechnik EZRT

µCT system & reconstruction algorithms for large artwork pieces

Eusebio Solorzano¹, **Daniel Cuadra-Rodriguez**¹, **Michael Schwarzenberg**², **Marian Willner**²

¹Novadep NDT Systems, Calle Castaño 10, 47193 La Cisterniga (Valladolid), Spain; ²MITOS GmbH, Hohenzollernstr. 60, 80801 München, Germany

ANAXAM @ TOMCAT 2.0: easy access to cutting-edge tomographic microscopy for industry

Margie Olbinado^{1,2}, **Vladimir Novak**², **Christian Gruenzweig**², **Anne Bonnin**¹, **Federica Marone**¹, **Christian Matthias Schlepuetz**¹, **Goran Lovric**¹, **Marco Stampanoni**^{1,3}

¹Paul Scherrer Institut, Forschungsstrasse 111, 5232 PSI-Villigen, Switzerland; ²ANAXAM, Park Innovaare, Parkstrasse 1, 5234 Villigen, Switzerland; ³Institute for Biomedical Engineering, University and ETH Zürich, 8092 Zürich, Switzerland

The flavours of CT from a simulation perspective

Marius Costin, Victor Bussy, Julie Escoda, Hermine Lemaire, Jitendra-Rathore Singh, Adrien Stolidi, Anthony Tournon
Université Paris-Saclay, CEA List, France

Impact of JPEG compression on the metrological characteristics of industrial CT data

Steffen Kieß¹, Robin Trostorf², Markus Bartscher², Jainabalkya Guhathakurta¹, Sven Simon¹, Ulrich Neuschaefer-Rube²
¹CT Lab and University of Stuttgart, Germany; ²PTB Braunschweig

In-depth imaging of in-vitro tissue models using electrical impedance tomography

Jian Deng¹, Babu Linkoon P Meenaketan^{2,3}, Saeedeh Ebrahimi Takalloo², Dries Braeken², Jan De Beenhouwer¹, Jan Sijbers¹
¹Imec-Visionlab, University of Antwerp, Universiteitsplein 1, 2610 Antwerpen, Belgium; ²IMEC, IMEC, Remisebosweg 1, 3001 Leuven, Belgium; ³KU Leuven, Oude Markt 13, 3000 Leuven, Belgium

Accurate Reconstruction of Gas Turbine Blade Geometry Using 3D/2D Rigid-Registration and CT View Optimization

Hristo Valtchanov¹, Nicolas Piché², Vladimir Brailovski³, Justin Byers⁴, Catherine Désrosiers^{2,1}, François Guibault¹
¹Polytechnique de Montreal, QC, Canada; ²Object Research Systems Inc., Montréal, QC, Canada; ³École de technologie supérieure, Montréal, QC, Canada; ⁴Pratt & Whitney Canada, Montréal, QC, Canada

Deep learning for the processing of synchrotron-radiation tomography data

Julian Moosmann¹, Sarah Irvine¹, Tak Wong¹, Dawit Hailu¹, Thomas Jentschke¹, Vojtech Kulvait¹, Stefan Bruns¹, Berit Zeller-Plumhoff¹, Florian Wieland¹, Felix Beckmann¹, Jörg Hammel¹, Philipp Heuser², Bashir Kazimi³, Xiaogang Yang⁴
¹Helmholtz-Zentrum Hereon, Germany; ²Helmholtz Imaging, DESY IT, Germany; ³Forschungszentrum Jülich, Germany; ⁴Brookhaven National Laboratory, USA

Multiscale characterization of medical devices and pharmaceutical formulations with 3D X-ray microscopy and computed tomography

Herminso Villarraga-Gómez¹, Ria L. Mitchell²
¹Carl Zeiss Industrial Quality Solutions, LLC, USA; ²Carl Zeiss Microscopy Ltd., UK

RadalyX: Portable Multimodal Robotic Scanner

Josef Uher, Jana Boháčová, Richard Kadeřábek, Jakub Veselý
Radalytica a.s., Czech Republic

MicroCT-Based Methodology for Defect Detection and Analysis in GRFP Tube Joints

Davi Oliveira¹, Cintia Ferreira¹, Olga Maria Araújo¹, Alessandra Machado¹, Gabriela Pereira², Ricardo Lopes¹
¹Nuclear Instrumentation Laboratory, Federal University of Rio de Janeiro, Brazil; ²Laboratory of Nondestructive Testing, Corrosion and Welding, Federal University of Rio de Janeiro, Brazil

Temperature-Controlled in-situ Tensile Tests of Polymer Tape with differently shaped Single Particles

Sarah Heupl, Julia Maurer, Johann Kastner
Research Group Computed Tomography, University of Applied Sciences Upper Austria, Austria

Focal Spot Blur Reduction by Deconvolution on CT Projections

Lucas Determan, Kirk Busche, Pradeep Bhattad
North Star Imaging, United States of America

Simulating X-ray beam energy and detector signal processing of an industrial CT using implicit neural representations

Edwin Blum, Florian Stamer, Gisela Lanza
Karlsruhe Institute of Technology, Germany

A Generative Adversarial Neural Network Based Approach for Beam Hardening Reduction in Cone-Beam Industrial X-ray CT Images

Mahdi Ghafarzadeh, Mohammad Tavakoli Kejani, Pouya Sarvari Saravani, Amirreza Asadi
Amirkabir University of Technology, AISM Research Institute, Iran, Islamic Republic of

Application Assessment of OS-SART Reconstruction Algorithm with Limited Number of Projections in XCT Geometric Measurement

Kaojie Yue, Huan Shao, Stefano Petrò, Giovanni Moroni
Department of Mechanical Engineering, Politecnico di Milano, Italy

Accuracy of fast CT dimensional measurements: a case study on an additively manufactured metal part

Thiago Linhares Fernandes¹, Miroslav Yosifov², Maryam Bahrkazemi³, Filippo Zanini¹, Wim Dewulf⁴, Simone Carmignato¹
¹University of Padova, Italy; ²University of Applied Sciences Upper Austria, Austria; ³Volume Graphics GmbH, Germany; ⁴KU Leuven, Belgium

High resolution Nano-CT to detect and analyze counterfeit semiconductors across multiple size scales from package to contacts

Dominik Müller, Andreas Balles, Astrid Hölzing
Fraunhofer IIS, Germany

Conducting a comparative study of defect detection on additively manufactured AISi10Mg propeller using advanced Non-destructive Testing Methods.

siyanda Nkwanyana, Khathutshelo Shavhani
Vaal University of Technology, South Africa

A Framework for the AI-based visualization and analysis of massive amounts of 4D tomography data for end users of beamlines

Steffen Kieß¹, Thomas Lang², Tomas Sauer³, A. Michael Stock³, Andrei Chernov³, Yipeng Sun⁴, Andreas Maier⁴, Tomáš Faragó⁵, Alexey Ershov⁵, Tilo Baumbach⁵, Simon Zabler², Astrid Hölzing², Kilian Dremel², Ali Riza Durmaz⁶, Akhil Thomas⁶, Ingo Manke⁷, Nikolay Kardjilov⁷, Tobias Art⁷, Tak Ming Wong⁸, Regine Willumeit-Römer⁸, Julian Moosmann⁸, Berit Zeller-Plumhoff⁸, Dieter Froning⁹, Sven Simon¹
¹University of Stuttgart; ²Fraunhofer Institute of Integrated Circuits IIS; ³University of Passau; ⁴FAU Erlangen-Nürnberg; ⁵Karlsruhe Institute of Technology; ⁶Fraunhofer Institute for Mechanics of Materials IWM; ⁷Helmholtz-Zentrum Berlin; ⁸Helmholtz-Zentrum Hereon; ⁹Forschungszentrum Jülich

Influence of MicroCT Resolution and Segmentation Techniques on Porosity Analysis in Carbonate Rocks

Alessandra Machado, Olga Maria Araújo, Davi Oliveira, Ricardo Lopes
Federal University of Rio de Janeiro, Brazil

Dimensional X-ray CT accuracy improvement by using metrological scan geometry information for non-iterative reconstruction with flexible trajectories

Simon Burkhard, Alain Küng
Metas, Switzerland

Correlation of Image Quality Metrics with Expert Perception for industrial Computed Tomography

Patrick Weinberger, Lukas Behammer, Lukas Nepelius, Bernhard Fröhler, Miroslav Yosifov, Johann Kastner, Sascha Senck
University of Applied Sciences Upper Austria, Austria

Accelerated CT Sub-pixel Super Resolution

Lucas Determan, Kirk Busche, Pradeep Bhattad

North Star Imaging, United States of America

Towards 4D CT in Additive Manufacturing: Evaluating Algorithmic Limitations and Opportunities for Industrial Non-Destructive Testing

Nadine Mönter, Katharina Bliedtner, Frank Herold

VisiConsult X-ray Systems & Solutions GmbH, Germany

Pore structure characterization of porous building material by X-ray computed tomography (XCT) and X-ray microscopy (XRM)

Chengnan Shi¹, Jeroen Soete², Hans Janssen¹

¹KU Leuven, Department of Civil Engineering, Building Physics and Sustainable Design, Leuven, Belgium; ²KU Leuven, Department of Materials Engineering, Structural Composites and Alloys, Integrity and Nondestructive Testing, Leuven, Belgium

End-to-end Projection Optimization Net for Short Scan CBCT Reconstruction

Xuan Zhou^{1,2}, Yuedong Liu^{1,2}, Cunfeng Wei^{1,2,3}, Qiong Xu^{1,3}

¹Beijing Engineering Research Center of Radiographic Techniques and Equipment, Institute of High Energy Physics, Chinese Academy of Sciences; ²School of Nuclear Science and Technology, University of Chinese Academy of Sciences; ³Jinan Laboratory of Applied Nuclear Science

A Comparative Study of Supervised and Self-Supervised Denoising Techniques for Defect Segmentation in Industrial CT Imaging

Virginia Florian¹, Jiayang Shi², Willem Jan Palestijn², Daan M. Pelt², K. Joost Batenburg², Thomas Lang¹, Christoph Heinzl^{1,3}, Christian Kretzer¹, Stefan Kasperl¹, Dominik Wolfschläger⁴, Robert H. Schmitt^{4,5}

¹Fraunhofer IIS/EZRT, Germany; ²Leiden Institute of Advanced Computer Science, Leiden University, The Netherlands; ³University of Passau, Germany; ⁴WZL RWTH Aachen University, Germany; ⁵Fraunhofer IPT, Germany

A CT machine for inspection of Parmigiano Reggiano PDO

Alice Presenti¹, Cosimo Lorenzetto¹, Francesco Tortoli¹, Leonardo Manetti¹, Sandro Bettini², Giorgia Stocco³, Alessandro Ferragina³, Claudio Cipolat Gotet³, Andrea Summer³

¹Imaginalis srl, Italy; ²Ing Ferretti srl, Italy; ³Department of Veterinary Science, University of Parma, Italy

High resolution CT-scan for porous metallic pieces produced by additive manufacturing

Daniel Cuadra-Rodriguez, Eusebio Solorzano, Pablo Perez-Vasallo

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Advanced MicroCT Analysis of Lacustrine Carbonate Reservoirs for Fluid Flow Simulation

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Structure characterization for nitrogen content carbons by using hard X-ray dual-phase grating interferometry

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Mitigation of human factor in tomographic post processing of additive manufactured critical parts for aviation application

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RoboCT Trajectory Optimization - Practical Study on a Rubik's Cube

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