

# ICTMS 2022

5<sup>th</sup> International Conference on Tomography of Materials & Structures  
27<sup>th</sup> June- 1<sup>st</sup> July 2022, Grenoble, France

## Program



## Foreword

Dear colleagues, dear ICTMS participants,

On behalf of the local organizing committee, we are very happy to welcome you to the 5th International Conference on Tomography of Materials and Structures (ICTMS2022) in Grenoble after Ghent, Quebec, Lund, Cairns. After these COVID periods with travel restrictions, we are really happy to welcome you in person in 2022 instead of 2021.

The scientific programme includes oral presentations in two parallel sessions, six keynotes and two poster sessions. We would like to thank all those involved who helped us to put together a very rich conference programme. In particular, we are grateful to the six keynote speakers: Alexandra Pacureanu (ESRF, France), Joost Batenburg (University of Leiden, The Netherlands), Christian Schlepütz (PSI - SLS, Switzerland), Stephen Hall (Lund University, Sweden), Karen Chen-Wiegart (Stony Brook University, USA) and Jean Susini (Soleil, France) and to our speakers (oral and poster). Thank you all!

We would also like to thank all our sponsors: CNRS, UGA, G-INP, Fed 3G, ILL, InGe'Lyse, INSA de Lyon, Grenoble Alpes Métropole, IntACT, ESRF-Streamline, ILL, MATH2MARKET, DRAGONFLY, TESCANA, NOVITOM, ZEISS, Reactiv'IP, RX Solutions, xnovotech, Excillum, Neoscan, Decathlon, Brucker. Thank you!

We wish you all a stimulating and successful conference.

With kind regards,










Eric and Sabine



## Program at a glance









	Monday 27 <sup>th</sup> June	Tuesday 28 <sup>th</sup> June	Wednesday 29 <sup>th</sup> June	Thursday 30 <sup>th</sup> June	Friday 1 <sup>st</sup> July
09:00		Keynote	Keynote	Keynote	Keynote
10:00		A : Acquisition B : Biology	A: in situ testing B : Geomaterials	A : Processing B : Porous media	A : Processing B : Additive manufacturing
10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00		A : Acquisition B : Biology	A: in situ testing B : Geomaterials	A : Processing B : Porous media	A : Processing B : Additive manufacturing
12:00		Welcome			
12:30	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break
13:30	Opening ceremony				
14:00	Keynote	A: Acquisition and in situ testing	Keynote	Visits of ESRF or ILL	
15:00	A : Acquisition B : Geomaterials	B : Biological and biomedical structures	A : From data to simulation B : Biology		
15:45	Coffee Break	Coffee Break	Coffee Break		
16:15	A : Acquisition B : Geomaterials	A: in situ testing	A : reconstruction B : Composites and energy materials		
17:30	Poster clip	B : Metallurgy			
18:00	Welcome pot	Wine & Cheese	General assembly of INTACT		
19:30					

## Monday 27<sup>th</sup> June - afternoon










13h30	<b>Opening ceremony</b>	
14h00	<b>Keynote</b> <u>Alexandra Pacureanu</u> : <i>Hard X-ray nano-imaging for life sciences</i>	
	<b>Session A : Acquisition</b>	
15h00	<i>3D X-ray nano-imaging at the ESRF for academic and industrial research</i> <u>Gravier Pauline</u> , Boller Elodie, Cloetens Peter, Villanova Julie	
15h15	<i>In-situ micro CT at the PETRA III P05 beamline</i> <u>Wilde Fabian</u> , Hammel Joerg , Beckmann Felix, Julian Moosmann , Khokhriakov Igor, Lottermoser Lars, Burmester and et al.	
15h30	<i>BM18, the new ESRF-EBS beamline for hierarchical phase-contrast tomography on large samples</i> <u>Tafforeau Paul</u>	
15h45	<i>NeXT 2.0 : the upgrade of the neutron and x-ray tomograph at ILL</i> <u>Alessandro Tengattini</u> -	
16h00	Coffee break	
16h30	<i>Synchrotron X-Ray Refraction during in-situ heat treatments</i> <u>Serrano-Munoz Itziar</u> , Roveda Ilaria, Kupsch Andreas, Mueller Bernd R, Bruno Giovanni	
16h45	<i>Tomography at PSICHE, SOLEIL : Current status and future plans</i> <u>King Andrew</u> , Piault Pierre Etienne, Henry Laura, Guignot Nicolas, Deslandes Jean-Pierre, Itié Jean-Paul	
17h00	<i>X-Ray Diffraction Laminography for the Quasi In Situ 3D Imaging of Dislocation Dynamics in Semiconductors</i> <u>Bode Simon</u> , Haenschke Daniel, Kabukcuoglu Merve et al.	
17h15	<i>Understanding spurious X-ray signal: noise, sampling and phase,</i> Andrew Matthew, Andreyev Andriy, Sanapala Ravikumar and <u>Nicolas Gueninchault</u>	
17h30	<b>Poster Clip and Session during welcome pot</b>	

## Monday 27th June - afternoon

### Session B: Geomaterials I









15h00	<i>Understanding the influence of pore-scale structural heterogeneity in CO2 geosequestration</i> <u>Daraei Ghadikolaei Farshad</u> , Knackstedt Mark, Saadatfar Mohammad	
15h15	<i>Insight into gas mobility by pore scale imaging with micro-CT time series</i> <u>Gao Ying</u> , Sorop Tibi, Georgiadis Apostolos, Brussee Niels, Coorn Ab, Van Der Linde Hilbert, Berg Steffen	
15h30	<i>Evaluation of physical characteristics of oilsands by CT image analysis</i> <u>Yang Jiaxi</u> , Sakamoto Ryoga, Mukunoki Toshifumi, Shionoya Gen	
15h45	<i>Ultra-fast in-situ X-ray phase contrast imaging of dynamic failure of geomaterials using versatile Split Hopkinson Pressure bar systems</i> <u>Lukic Bratislav</u> , Saletti Dominique, Cordonnier Benoit et al	
16h00	Coffee break	
16h30	<i>Cone penetration testing in snow: new insights with tomography and discrete element models</i> <u>Hagenmuller Pascal</u> , Hery Clémence, Chambon Guillaume Peinke	
16h45	<i>Is XCT suited to study fine-grained rocks?</i> Saur Hugo, Aubourg Charles, <u>Moonen Peter</u>	
17h00	<i>Imaging 3D clay fabric with X-ray nano- and micro- tomography</i> Georgios Birmpilis, Villanova Julie, Mohammadi Amir Saeid, Ando, Edward <u>Dijkstra Jelke</u>	
17h15	<i>Investigation of the mechanical properties of a bio-cemented contact using X-ray tomography</i> <u>Sarkis Marilyn</u> , Naillon Antoine, Emeriault Fabrice, Geindreau Christian	
17h30	<b>Poster Clip and Session during welcome pot</b>	

## Tuesday 28<sup>th</sup> June – morning








9h00	<b>Keynote</b> <u>Stephen Hall</u> : <i>ND imaging of processes in granular- and geo-materials from intra-granula to bulk scale</i>	
<b>Session A : Acquisition</b>		
10h00	<i>Beyond the limits of lab-based submicron CT for metrology</i> <u>Salplachta Jakub</u>	
10h15	<i>A multi-scan refinement technique for limited-angle cone-beam micro-tomography</i> Delgado-Friedrichs Olaf, <u>Kingston Andrew</u> et al	
10h30	Coffee break	
11h00	<i>4D X-ray microtomography of vibrating multiscale structures</i> <u>Klos Antoine</u> , Bailly Lucie, Rolland Du Roscoat Sabine, Orgéas Laurent, Henrich Bernardoni Nathalie, Broche Ludovic et al	
11h15	<i>3D particle tracking in flowing granular media with only X-ray radiography: application to two case studies</i> <u>Stamati Olga</u> , Ando Edward, Marks Benjy, Roux Stephane et al	
11h30	<i>Imaging Intact Human Organs with Near-cellular Resolution using Hierarchical Phase-Contrast Tomography</i> <u>Lee Peter</u> , Tafforeau Paul, Walsh Claire, Wagner Willi et al	
11h45	<i>Sub-resolution pore size quantification based on tuneable X-ray dark-field imaging</i> <u>Benjamin Blykers</u> , Organista Caori, Boone Matthieu, Kagias Matias et al	
12h00	<i>Hierarchical region-of-interest tracking for in situ nano-scale X-ray laminography</i> <u>Hurst Mathias</u> , Helfen Lukas, Morgeneuyer Thilo et al	
12h15	<i>Modulation-Based dark-field tomography for micro-structures orientation studies</i> <u>Quenot Laurene</u> ,Bravin Alberto, Sylvain Bohic, Bayat Sam et al	

## Tuesday 28th June – morning








### Session B : Biological & biomedical structures

10h00	<i>Bone nanostructure in 3D by synchrotron tomography in mice having impaired control of mineralization</i> <u>Ostergaard Maja</u> , Hoac Betty, Jensen Alexander B, Wittig Nina K. et al	
10h15	<i>High-resolution imaging of whole human heart using synchrotron X-ray tomography</i> <u>Brunet Joseph</u> , Walsh Claire, Tafforeau Paul, Lee Peter	
10h30	Coffee break	
11h00	<i>In situ <math>\mu</math>CT of Push-Out Tests for Screw Implants - Analysis of Material Dependent Bone Morphology and Peri-Implant Strain</i> <u>Bruns Stefan</u> , Moosmann Julian, Krueger Diana, Galli Silvia, et al	
11h15	<i>Time-Resolved Microstructural Characterization of the Apis Mellifera Honeycomb</i> <u>Franklin Rahul</u> , Niverty Sridhar, Harpur Brock, Chawla Nikhilesh	
11h30	<i>Visualization of bacterial biofilms in porous media using X-Ray and neutron microtomography</i> <u>Ivankovic Tomislav</u> , Rolland Du Roscoat Sabine, Geindreau Christian et al	
11h45	<i>Optimization of contrast-enhanced microCT for vascular applications</i> <u>Leyssens Lisa</u> , Petre Maite, Kerckhofs Greet	
12h00	<i>X-ray based 3D histology of heart valves using microfocus computed tomography and contrast-enhanced computed tomography</i> <u>Pestiaux Camille</u> , Quirynten Louise, Beauloye Christophe et al	
12h15	<i>Serial tomography and semi-automated analysis of insects</i> <u>Van De Kamp Thomas</u> , Loesel Philipp, Farago, Heuveline Vincent, Krogmann Lars, Baumbach Tilo	

## Tuesday 28<sup>th</sup> June – afternoon I








Session A : Acquisition & in situ testing		
14h00	<i>Optimizing acquisition conditions for monitoring air drying of 3d cellulose printed part with fast lab X-ray microtomography</i> <u>Habib Murtaza</u> .	
14h15	<i>Fly scan solutions for multi-modal x-ray computed tomography</i> <u>Hagen Charlotte</u> , Lioliou Grammatiki, Ha Amy, Roche I Morgo Oriol, Zekavat Amir, Pelt Daniel, Olivo Alessandro, Cipiccia Silvia	
14h30	<i>Rheological surveys in combination with fast X-ray (tensor-) tomography</i> <u>Stefan J. Gstoehl</u> , Kim Jisoo, Schleputz Christian M., Marone Federica, Stampanoni Marco	
14h45	<i>4D X-ray microtomography under extreme conditions</i> <u>Elena Giovenco</u> , Perrillat Jean-Philippe, Boulard Eglantine, Le Godec Yann, King Andrew, Henry Laura, Guignot Nicolas	
15h00	<i>Heitt Mjolnir: an internally heated miniature triaxial deformation apparatus for experiments with 4D synchrotron X-ray microtomography</i> Freitas Damien, Butler Ian, <u>Fusseis Florian</u> , Elphick Stephen Rizzo Roberto	
15h15	<i>Characterization of the hydromechanical behavior of sandstones through in-situ triaxial testing with X-ray and neutron tomography</i> <u>Vieira Lima Fernando</u> , Hall Stephen, Engqvist Jonas, Tudisco Erika et al	
15h30	<i>Correlative tomography-based characterization of a newly developed liquid assisted healable Al alloy</i> Gheysen Julie, <u>Grzegorz Pyka</u> , Winiarski Bartlomiej, Hannard Florent et al	
15h45	Coffee break	










<b>Session B: Civil Engineering &amp; biosourced materials</b>		
14h00	<i>Reinforced concrete structures: a non destructive and non invasive study of corrosion</i> <u>Alhede Andreas</u> , Robuschi Samanta, Tengattini Alessandro et al	
14h15	<i>Machine learning for the detection of cracks in concrete - dealing with obstacles in combining 2D microscopy and 3D computed tomography</i> <u>Hadlich Christiane</u> , Osburg Andrea	
14h30	<i>Spatial analysis of interfaces in concrete</i> <u>Landis Eric</u> , Hassefras Emiel, Oesch Tyler, Niederleithinger Ernst	
14h45	<i>4D early age cement hydration analysis by ptychographic X-ray computed tomography and machine learning segmentation</i> <u>Shirani Shiva</u> , Cuesta Ana, Diaz Ana, Trtik Pavel, Holler Mirko, et al	
15h00	<i>X-ray tomography to study enzymatic degradation of plant biomass</i> <u>Blosse Sarah</u> , Duru Paul, Montanier Cedric, Bouchoux Antoine	
15h15	<i>Hysteresis of coupled hygromechanical behavior of wood</i> <u>Sarah Kyamani</u>	
15h30	<i>Unravelling the deformation process of a compacted paper: in-situ tensile loading, 4D X-ray tomography and image-based analysis</i> <u>Wu Dan</u> , Engqvist Jonas, Barbier Christophe, Karlsson Christopher, Hall S.	
15h45	Coffee break	

## Tuesday 28<sup>th</sup> June – afternoon II

### Session A : Acquisition & in situ test

16h15	<i>3D characterisation of a multi-scale foam</i> <u>Le Barbenchon Louise</u> , Girardot Jeremie, Kopp J-B, Viot Philippe	
16h30	<i>Quasi-simultaneous neutron and X-ray tomography of crystallization-induced damage in porous rocks.</i> <u>Okumko Victor</u> , Derluyn Hannelore, Tengattini Alessandro, Helfen L. et al	
16h45	<i>Investigation of Silicon-Based Anodes for Li-Ion Batteries Using X-Rays and Neutron 3D/4D Imaging Techniques</i> <u>Lubke Erik</u> , Helfen Lukas, Brunner Roland, Vorauer Thomas et al	
17h00	<i>"Fast" X-ray nano-tomography for in situ investigation of energy related devices</i> <u>Vanpeene Victor</u> , Villanova Julie, Drnec Jakub, Schulli Tobias et al	
17h15	<i>Accuracy in cement hydration investigations: combined X-ray microtomography and powder diffraction analyses</i> <u>Salcedo Ines R</u> , Cuesta Ana, Shirani Shiva, Lein-Reina Laura et al	
17h30	<i>Integration, characterisation and setup optimization of PixiRad-2/PixiIII for absorption and K-edge laboratory X-ray tomography</i> <u>Granger Remi</u> , Murtaza Habib, Lhuissier Pierre, Salvo Luc et al	
17h45	<i>Bragg Magnifier Optics for Dose-efficient X-Ray Imaging with <math>\mu\text{m}</math> Resolution</i> <u>Spiecker Rebecca</u> , Hessdorfer Holger, Biswal Adyasha Anapurba et al	
18h00	<b>Wine and cheese &amp; poster session</b>	

<b>Session B : Metallurgy</b>		
16h15	<i>Pseudo in-situ observations of wear in metal-metal contacts</i> <u>Aleksejev Jure</u> , Williamson Marcus, Marrow James, Huber John	
16h30	<i>Structural defects in metal injection moulded parts revealed by tomography</i> <u>Jakata Kudakwashe</u> , Machaka Ronald, Boller Elodie, Cook Philip	
16h45	<i>In situ ductile damage analysis in large X-ray tomography dataset</i> <u>Le Bourlot Christophe</u> , Azman Amin, Maire Eric, Fabregue Damien	
17h00	<i>3D micro and nano-imaging in creep test of stainless steel</i> <u>Oguz Ozdemir</u>	
17h15	<i>Bulk polycrystal plasticity in Ti7Al observed by topotomography</i> <u>Proudhon Henry</u> , Stinville Jean-Charles, Callahan Patrick, Echlin Mclean Pollock Tresa, Ludwig Wolfgang	
17h30	<i>In-situ 3D study of fatigue crack growth with overload effects in AISi alloy</i> <u>Sanciet--Munier Lucas</u> , Limodin Nathalie, Buffiere Jean-Yves, Witz Jean-Francois, Coret Michel, Bahaj Filali Ghita , Gaillard Yves, et al	
17h45	<i>In situ 3D nano-imaging during high-temperature tensile tests in aerospace alloy aluminium 2050</i> <u>Harrup Anthony</u> , Villanova Julie, Lhuissier Pierre Ollat Melanie et al	







## Wednesday 29<sup>th</sup> June – morning

9h00	<b>Keynote</b> <u>Christian Schlepütz</u> : <i>Time-resolved microtomography for materials science.</i>	
<b>Session A : Acquisition &amp; in situ test</b>		
10h00	<i>Exploring the merits of cycloidal-spiral scanning in micro-CT techniques based on a structured X-ray beam</i> <u>Grammatiki Lioliou</u> , Ha A. Roche I Morgo O., Olivo A, Hagen C.	
10h15	<i>Application of stoichiometric calibration method for dual-energy CT to identify common minerals</i> <u>Martini Margherita</u> , Francus Pierre, Di Schiavi Trotta Leonardo, et al	
10h30	Coffee break	
11h00	<i>Improved resolution in x-ray tomography by super-resolution</i> <u>Dreier Till</u> , Peruzzi Niccola, Lundstrom Ulf, Bech Martin	
11h15	<i>A New Device for In-Situ Laboratory and Synchrotron Studies of Sand During High Pressure Triaxial Tests,</i> <u>Hurley Ryan</u> , Shahin Ghassan	
11h30	<i>Operando X-ray tomography of laser beam-assisted processes</i> <u>Kamm Paul H</u> , Boerner Stephan, Neu Tillmann R., Von Der Eltz Nadine, Schlepütz Christian M, Dittrich Dirk, Banhart John, Garcia-Moreno	
11h45	<i>In-situ tests for fibrous materials used for insulation</i> <u>Meftah Redouane</u> , Seck Mamadou, Flesselles Jean-Marc, Mimoun Emmanuel, Berline Ivan	
12h00	<i>In situ monitoring of the setting of alpha-plaster using synchrotron X-ray tomography with high spatial and temporal resolutions</i> <u>Tadier Solène</u> , Seiller Joanna, Bonnal Thomas Adrien Jerome, et al	
12h15	<i>On the precision of rotation axis estimation in Computed Tomography</i> <u>Zemek Marek</u>	

Session B : Geomaterials II		
10h00	<i>How the microstructure affects fluid displacement within different lithologies? - UKGEOS-Glasgow case study</i> <u>Charalampidou Elli Maria</u> , Madankan Mohammad, Kardjilov Nikola et al	
10h15	<i>Characteristics and scales of the three-phase microstructure of saline spray ice</i> <u>Carolin Willibald</u>	
10h30	Coffee break	
11h00	<i>Multi-scale characterization of heterogeneous carbonates: from full core tomography to fine scale flow models</i> <u>Jan Dewanckele</u> , Berg Steffen, De Boever Wesley, Boone Marijn et al	
11h15	<i>Multi-scale analysis of a porous carbonate rock under triaxial conditions</i> Dore-Ossipyan Catherine, <u>Bornert Michel</u> , Aïmediou Patrick et al	
11h30	<u>Arash Nemati</u> - <i>Investigation of water condensation in a fractured porous media using Neutron fast tomography</i>	
11h45	<i>5D Tomography of couscous exposed to high relative humidity</i> <u>Vego Ilija</u>	
12h00	<i>3D Evolution of Particle Scale Contact Force Network in Natural Silica Sand</i> Amirrahmat Siavash, Imseeh Wadi, Kenesei Peter, Jarrar Zaher, Sharma Hemant, <u>Alshibli Khalid</u>	
12h15	<i>Deep learning for semi-automated 3D mineral liberation analysis</i> <u>Tung Patrick</u> , Halim Amalia, Wang Helen, Rich Anne, Marjo Christopher Regenauear-Lieb Klaus	

## Wednesday 29<sup>th</sup> June – afternoon

14h00	<b>Keynote <u>Joost Batenburg</u> : Advanced X-Ray Tomography Reconstruction: Classical methods and Machine learning approaches.</b>	
<b>Session A : From data to simulation</b>		
15h00	<i>X-ray tomography simulation software for generating deep learning training database - Application to artifact correction</i> <u>Autret Awen</u> , Nguyen Duy, Fayard Barbara,	
15h15	<i>Large Deformations of Metal Foams: Dynamic CT Results, Simulations, and Modeling</i> <u>Griesser Andreas</u> , Humbert Martina, Rief Sebastian et al	
15h30	<i>From images of porous media generated using a medical CT-scanner to CFD numerical simulations</i> <u>Hammouti Abdelkader</u> , Oukaili Fatna, Larmagnat Stephanie et al	
15h45	Coffee break	
<b>Session A : Advances in reconstruction</b>		
16h15	<i>Faster iterative spectral reconstruction within the CIL framework</i> <u>Ametova Evelina</u> , Burca Genoveva, Chilingaryan Suren, Fardell G. et al	
16h30	<i>Tomographic reconstruction from moving projections</i> <u>Roux Stephane</u> , Jailin Clement, Neggers Jan	
16h45	<i>Variance data and its applications in quantitative x-ray computed tomography</i> <u>Yang Qiheng</u> , Paziresh Mahsa, Myers Glenn, Latham Shane et al	
17h00	<i>Dynamic <math>\mu</math>CT of pore-scale fluid displacements: Improving the reconstructed temporal resolution</i> <u>Goethals Wannes</u> , Aelterman Jan, Bultreys Tom, Boone Matthieu	
17h15	<i>Computational imaging methods by 3d ptychography and hyperspectral by phase contrast: algorithms and applications</i> <u>Da Silva Julio</u> , Kulow Anico, Boudjehem Mohamed Redhouane et al	
17h30	<i>Intragranular strain field reconstruction from scanning far-field X-ray diffraction measurements</i> <u>Henningsson Axel</u> , Hall Stephen, Hendriks Johannes	
17h45	<i>Joint Reconstruction of <math>\Sigma</math> 3n Twin Related Domain in Polycrystalline Ni Using Six-dimensional Diffraction Contrast Tomography</i> <u>Liu Zheheng</u> , Ludwig Wolfgang, Vigano Nicola et al	
18h00	<i>A forward model based 3D grain mapping by laboratory X-ray diffraction contrast tomography (LabDCT)</i> <u>Fang Haixing</u> , Ludwig Wolfgang, Lhuissier Pierre	

Session B : Biology applications		
15h00	<i>Quantitative characterisation of rodent fetoplacental vasculature morphology in micro-CT images</i> <u>Patalwala Diana</u> , Yutthapong Tongpob, Shushan Xia, et al	
15h15	<i>Multiscale X-ray computed tomography in bone research</i> <u>Wittig Nina Kolln</u> , Thomsen Jesper Skovhus, Birkedal Henrik	
15h30	<i>Characterization of nanocrystalline carbonated hydroxyapatite microspheres by Synchrotron radiation X-ray microtomography</i> <u>Martinez-Zelaya Victor</u> , Perez Harelline, Costa Gabriel et al	
15h45	Coffee break	
Session B : Composites & energy materials		
16h15	<i>Macroscopic mapping of microscale fibers in freeform injection molded fiber-reinforced composites using X-ray scattering tensor tomography</i> <u>Kim Jisoo</u> , Slyamov Azat, Lauridsen Erik, Birkbak Mie, et al	
16h30	<i>Defect segmentation and quantification of fatigue damage in fiber-reinforced polymers</i> <u>Helwing Ramon</u> , Huelsbusch Daniel, Walther Frank	
16h45	<i>Application of in-situ synchrotron x-ray nano-tomography in investigating the evolution of sintering of ceramic powder systems</i> <u>Venkatesh Aatreya Manjulagiri</u> , Bouvard Didier, Lhuissier Pierre et al	
17h00	<i>XRDCT as a tool to characterize operando battery degradation</i> <u>Partha Paul</u> , Di Michiel Marco, Withers Philip J	
17h15	<i>Nanobeam scanning 3D X-ray Diffraction Microscopy of a CdTe Solar Cell</i> <u>Shukla Aditya</u> , Stieglitz Hergen, Poulsen Henning Friis, Stuckelberger Michael, Besley Luke, Baur Christian, Krywka Christina et al	
17h30	<i>Advanced reconstruction algorithms for X-ray fluorescence tomography of cycled active cathode particles for Li-ion batteries</i> <u>Monaco Federico</u> , Vigano Nicola, Qian Guannan, Liu Yijin, Cloetens Peter	
17h45	<i>X-ray CT for electric vehicle battery application : quantitative investigation of heterogeneities induced by lithium metal electrode oxidation and reduction--</i> <u>Magnier Lucile</u> , Devaux Didier, Lachambre Joel et al	
18h00	<i>Wicking through complex interfaces - X-ray imaging and free energy analysis of interlaced yarns</i> <u>Fischer Robert</u> , Schleputz Christian, Rossi Rene, Derome Dominique et al	




## Thursday 30<sup>th</sup> June – morning

9h00	<b>Keynote</b> <u>Karen Chen-Wiegart</u> : <i>Synchrotron X-ray nano-tomography and multimodal characterization of materials for energy applications.</i>	
<b>Session A : Data processing</b>		
10h00	<i>Facilitating High-Quality Tomographic Reconstruction with approximate computing</i> <u>Chilingaryan Suren</u> , Ametova Evelina, Farago Tomas, Harihara H. et al	
10h15	<i>PI2 software for terapixel-scale image analysis</i> <u>Miettinen Arttu</u>	
10h30	Coffee break	
11h00	<i>Physics-based registration applied to battery degradation observed using X-ray tomography</i> <u>Ait Hamouda Sonia</u> , Dufour Alexandre, Moonen Peter	
11h15	<i>Regional variation of fibre kinematics in the intervertebral disc</i> <u>Disney Catherine</u> , Lee Peter, Bay Brian	
11h30	<i>Assisting Digital Volume Correlation with mechanical Image-based modeling: An application to kinematic measurements in cellular materials</i> <u>Rouwane Ali</u> , Bouclier Robin, Passieux Jean-Charles, Perie Jean Noel et al	
11h45	<i>In-situ monitoring of castable refractory fracture</i> <u>Vargas Rafael</u> , Bresciani Canto Rodrigo, Hild François	
12h00	<i>Deformation mechanisms in a clay rock at the micron-scale</i> <u>Besuelle Pierre</u> , Ando Edward, Stamati Olga, Charrier Pascal	
12h15	<i>Morse Theory-based Segmentation of angular sands</i> <u>Manasa K I Bhat</u>	
12h30	<i>Simulation of phase contrast tomography: a tool to improve fatigue crack detection in metals</i> Xiao Ce, Letang Jean Michel, <u>Buffiere Jean-Yves</u>	
12h45	<i>Metrological advances on contact detection from X-ray tomography images</i> <u>Pinzon Gustavo</u> , Ando Edward, <u>Tengattini Alessandro</u> , <u>Viggiani Cino</u> et al	

## Thursday 30<sup>th</sup> June – afternoon

14h00 **ESRF & ILL visits**



<b>Session B : Porous media</b>		
10h00	<i>Hydrogen flow through porous media</i> <u>Thaysen Eike Marie</u> , Butler Ian, Hassanpouryouzband Aliakbar, Freitas Damien, Alvarez Borges Fernando, Atwood Robert, Humphreys Bob et al	
10h15	<i>Measuring 3D flow fields in porous media by micro-CT based particle tracking</i> <u>Cnudde Veerle</u> , Bultreys Tom, Van Offenwert Stefanie, Aelterman Jan et al	
10h30	Coffee break	
11h00	<i>Fast x-ray tomography of immiscible fluid fingering in porous sandstone</i> <u>Couture Cyrille</u> , Tengattini Alessandro, Lukic Bratislav, Bésuelle Pierre, Viggiani Cino	
11h15	<i>A sub-micron investigation of the role of surface roughness on multiphase flow hysteresis using fast time-resolved X-ray microtomography</i> <u>Mascini Arjen</u> , Novak Vladimir, Schleputz Christian, Kalyoncu G. et al	
11h30	<i>Illuminating nanoparticle retention mechanisms in porous media - an X-ray <math>\mu</math>-CT approach</i> <u>Adrian Schiefler</u>	
11h45	<i>Observation of water transport in a heterogeneous swelling material using x-ray tomography and 4D image analysis</i> <u>Yliharju Janne</u> , Harjupatana Tero, Tanttuni Joni, Miettinen Arttu,, Kataja M.	
12h00	<i>3D fatigue-induced structure evolution of EVA foams reinforced with biobased nanofillers and used for running shoes</i> <u>Aimar Clara</u> , Bordage Romain, Rolland du Roscoat Sabine Orgéas L. et al	
12h15	<i>Relating microstructure to deformation mechanisms in open-cell polymer foams imbibed or not with fluid by in situ X-ray tomography</i> <u>Lacaj Endri</u> , Doumalin Pascal, Bouyer Jean , Jolly Pascal, Henry Yann et al	
12h30	<i>Snow sample compression monitored with X-ray tomography</i> <u>Bernard Antoine</u> , Hagenmuller Pascal, Montagnat Maurine, Chambon Guillaume, Buffet Alexis	
12h45	<i>X-ray micro-computed tomography to study salt precipitation and salt damage in multilayered porous materials</i> <u>Chekai Tinhinane</u>	

## Friday 1<sup>st</sup> July – morning

9h00	<b>Keynote</b> <u>Jean Susini</u> : <i>Synchrotron-Based X-ray Imaging: Trends, Challenges, and new Opportunities</i>	
<b>Session A : Processing</b>		
10h00	<i>DTHE : Double Tomograph for High Energy computed tomography,</i> <u>Maire Eric</u>	
10h15	<i>X-ray tomography for porosity quantification and classification: a study of thresholding and machine learning approaches</i> <u>Du Plessis Anton, Marsh Mike, Piche Nicolas</u>	
10h30	Coffee break	
11h00	<u>Kathleen Dollman</u> - <i>The application of deep learning models to palaeontological CT scan datasets</i>	
11h15	<u>Athanasios Tsamos</u> - <i>Synthetic CT data generation and their application in post-CT Conditioning and Segmentation of Al-Si MMCs with Deep Learning techniques</i>	
11h30	<i>Beyond Hardware Imaging and Modelling of Porous Structures and Hydrogen Fuel Cells with Deep Learning</i> <u>Wang Ying Da, Meyer Quentin, White Robin, Iacoviello Francesco et al</u>	
11h45	<i>Segmentation of 3D-CT Drill Core Data using Active Learning</i> <u>Hassler Ulf, Michen Markus, Ennen Alexander, Firsching Markus</u>	
12h00	<i>Analysis of the benefits of msdnet IA algorithm for reconstruction of dataset with low number of projections</i> <u>Salvo Luc, Nwade Justice, Lhuissier Pierre, Pelt Daniel</u>	
12h30	<b>Closing ceremony</b>	

<b>Session B : Additive manufacturing</b>		
10h00	<i>Quantification of porosity reduction processes during in-situ compression of paperboard</i> <u>Johansson Sara</u> , Schleputz Christian M, Engqvist Jonas, Hall Stephen	
10h15	<i>The effects of magnetic field on the additive manufacturing of nickel superalloy</i> <u>Atwood Robert C</u> , Fan Xianqiang, Fleming Tristan, Marussi Sebastian, et al	
10h30	Coffee break	
11h00	<i>4D microstructure evolution in titanium alloys for additive manufacturing</i> <u>Bugelnig Katrin</u> , Barriobero-Vila Pere, Breitbarth Eric, Strohmann Tobias, Silva Kenneth, Gussone Joachim, Haubrich Jan, Villanova Julie et al.	
11h15	<i>Bragg edge tomography characterization of additively manufactured 316L steel</i> <u>Busi Matteo</u> , Strobl Markus	
11h30	<i>Porosity detection in additive manufacturing: Lab CT vs. Synchrotron CT</i> <u>Rathore Jitendra Singh</u> , Escoda Julie, King Andrew, Vienne Caroline	
11h45	<i>New Insights into Laser Additive Manufacturing from in-situ Synchrotron X-ray Imaging</i> <u>Chen Yunhui</u> , Tang Yuanbo, Collins David, Clark Samuel, Leung Alex et al	
12h00	<i>Unwrapping X-ray tomography images for surface characterization</i> <u>Vijayakumar Jaianth</u> , Fiers Geraldine, Schrijnemakers Koen, Cnudde Veerle, Boone Matthieu	

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