

# International Conference

*on*

## Residual Stresses

### ICRS-11

27<sup>th</sup> to 30<sup>th</sup> March 2022

*organised by*



*at*

Centre Prouvé – Nancy France

## Tentative schedule



# Sessions details

S1 – **Measurement methods:** diffraction methods, line profile analysis, magnetic methods, acoustic methods, photomechanical methods, mechanical and micromechanical methods . . .

S2 – **Modelling methods:** at different scales (nano, micro, macroscales), multiscale modelling . . .

S4 – **Residual stresses in manufacturing processes:** Heat treatments, Surface treatments (mechanical, , thermochemical,. . . ), casting, additive technologies, machining, cutting, coating technologies, welding and other assembling methods, . . .

S5 – **Residual stresses in advanced materials:** Polymer based composites, Metal and/or ceramic composites, glass and amorphous materials, Functionally Graded Materials, nanocrystallised/nanostructured materials, thin films, coatings, multilayers . . .

S6 – **Residual stresses, Internal stresses and microstructures:** phase transformations, phase stresses, intergranular/intragranular stresses, dislocations . . .

S8 – **Consequences of residual stresses:** Fatigue, crack propagation, damage, chemical reactivity, stress corrosion, physical properties of solids . . .

# Schedule Sunday 27<sup>th</sup> March

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17h00

Registration

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**Schedule Monday 28<sup>th</sup> March** – Auditorium – Morning sessions

<b>08:30</b>	<b>Opening</b>
<b>09:00</b>	<b>Plenary talk :I.C. Noyan</b> – Columbia University – New York – USA <b>State of the art of the residual stress measurements by diffraction and challenges for the future</b>
<b>9:55</b>	Keynote: S1 – <b>Yashar Javadi</b> – , University of Strathclyde – Glasgow – United Kingdom S1 Yashar Javadi, Alistair Hutchison, Jonathan Singh, Ehsan Mohseni, Salaheddin Rahimi, Jorn Mehnen, Charles MacLeod, Gareth Pierce, Katherine Tant, Anthony Gachagan <b>Feasibility Study of Residual Stress Measurement Using Phased Array Ultrasonic Method</b>
<b>10:20</b>	S1 – <b>Abdellahi Abderahmane</b> – Université Paris-Saclay, CEA-LIST – Gif-sur-Yvette – France Abdellahi Abderahmane, Alain Lhémy, Laurent Daniel <b>An elastic guided wave tomographic method for multiaxial stress imaging</b>
<b>10:40</b>	S1 – <b>Yuri Kudryavtsev</b> – SINTEC Inc. – Thornhill, ON – Canada Yuri Kudryavtsev, Jacob Kleiman <b>Ultrasonic Measurement of Residual Stresses in Welded Elements and Structures</b>
<b>11:00</b>	<b>Coffee break</b>
<b>11:20</b>	S1 – <b>Xingxing Zhang</b> – Technische Universität München – Garching – Germany Xingxing Zhang, Joana Rebelo Kornmeier, Michael Hofmann, Shadi Alameddin, Felix Fritzen, Anika Langebeck, Annika Bohlen <b>Residual stresses in laser-processed metal matrix composite coatings</b>
<b>11:40</b>	S1 – <b>Miguel Angel Vicente Alvarez</b> – Laboratorio Argentino de Haces de Neutrones -CNEA – Bariloche – Argentina Miguel Angel Vicente Alvarez, Martin Gonzalez Fuster, Karina Pierpauli, Javier Santisteban <b>ANDES, a new neutron strain scanner for LAHN</b>
<b>12:00</b>	S1 – <b>Samantha Veck</b> – The Open University – Milton Keynes – United Kingdom Samantha Veck, Foroogh Hosseinzadeh, P John Bouchard <b>Feasibility Study of Near Surface Residual Stress Field Reconstruction using Eigenstrain and Stress Function Methods</b>
<b>12:40</b>	<b>Lunch</b>

**Schedule Monday 28<sup>th</sup> March** – Auditorium – Afternoon sessions

13:45	Keynote: S4 – <b>Thomas Niendorf</b> – Universität Kassel – Kassel – Germany Thomas Niendorf, Behzad Aminforoughi, Sebastian Degener, Alexander Liehr <b>Determination of residual stresses in materials processed by additive manufacturing – challenges and consequences</b>
14:10	S4 – <b>Maximilian Sprengel</b> – Bundesanstalt für Materialforschung und -Prüfung (BAM) – Berlin – Germany Maximilian Sprengel, Gunther Mohr, Simon J. Altenburg, Alexander Evans, Itziar Serrano-Munoz, Arne Kromm, Thilo Pirling, Giovanni Bruno, Thomas Kannengiesser <b>Surface and bulk Residual Stress in Laser Powder Bed Fused 316L: Influence of Inter Layer Time and Scanning Velocity</b>
14:30	S4 – <b>Alexander Evans</b> – Bundesanstalt fuer Materialforschung und -prüfung (BAM) – Berlin – Germany Alexander Evans, Itziar Serrano-Munoz, Maximilian Sprengel, Tatiana Mishurova, Tobias Fritsch, Alexander Ulbricht, Jakob Schröder, Arne Kromm, Thomas Kannengiesser, Giovanni Bruno <b>Diffraction based residual stress analysis for metal additive manufacturing</b>
14:50	S4 – <b>Felix Schmeiser</b> – Technische Universität Berlin, Institute for Materials Science and Technology, Metallic Materials – Berlin – Germany Felix Schmeiser, Erwin Krohmer, Eckart Uhlmann, Walter Reimers <b>In situ stress analysis during laser powder bed fusion using synchrotron radiation diffraction</b>
15:10	S4 – <b>Prabhat Pant</b> – Linköping University – Linköping – Sweden Prabhat Pant, Vladimir Luzin, Sebastian Proper, Seyed Hosseini, Johan Moverare, Kjell Simonsson, Ru Lin Peng <b>Effect of re-melting strategies on the residual stresses in additively manufactured L-shaped IN718 parts</b>
15:30	S4 – <b>Lucas Robatto</b> – Aeronautics Institute of Technology – São José dos Campos – Brazil Lucas Robatto, Ronnie Rego, Jose Mascheroni, Arthur Kretzer, Izabel Criscuolo, Anderson Borille <b>Laser powder bed fusion of 20MnCr5 steel: process maps based on X-ray diffraction analyses</b>
15:50	S4 – <b>Halsey Ostergaard</b> – University of Sydney – Sydney – Australia Halsey Ostergaard, Anna Paradowska <b>In-situ and ex-situ neutron tools for probing residual stress and microstructure interactions during additive manufacturing and subsequent heat treatment</b>
16:10	Coffee break
16:30	S1 – <b>Andrzej Baczmanski</b> – AGH University of Science and Technology, WFiIS – Krakow – Poland Andrzej Baczmanski, Marianna Marciszko-Wiackowska, Adrian Oponowicz, Manuela Klaus, Christoph Genzel, Mirosław Wrobel, Chedly Braham <b>Evolution of stresses and elastic properties below sample surface studied using X-ray diffraction</b>
16:50	S1 – <b>Fabien Lefebvre</b> – CETIM – Senlis – France Fabien Lefebvre, Simon Robbe, Eric Usmaal, Elia Zgheib, Benoit Malard, Manuel François, Jean-Marie Le Roux, Nicolas Ratel-Ramond, Charles Mareau, Thierry Bergey, Edouard Daniel, Ewan Gautier, Guillaume Geandier <b>Material removal correction for residual stress analysis with X-ray diffraction</b>
17:10	S1 – <b>Chedly Braham</b> – PIMM, Arts et Metiers Institute of Technology – Paris – France Chedly Braham, Léo Morin, Pouya Tajdary, Gonzalo Gonzalez <b>A deconvolution method for the mapping of residual-stresses by X-ray diffraction</b>
17:30	S1 – <b>Jeremy Robinson</b> – University of Limerick – Limerick – Ireland Elizabeth Sackett, Jeremy Robinson <b>Experimental validation of nanoindentation as a technique for rapid residual stress measurements on heat treatable aluminium alloys</b>
17:35	S1 – <b>Tommaso Grossi</b> – University of Pisa – Pisa – Italy Marco Beghini, Tommaso Grossi, Ciro Santus, Emilio Valentini <b>A calibration bench to validate systematic error compensation strategies in hole drilling measurements</b>

**Schedule Monday 28<sup>th</sup> March** – ROOM 101 – Morning sessions

<b>9:55</b>	Keynote: S2 – <b>Regis Kubler</b> – Arts et Metiers Institute of Technology – Aix en Provence – France Regis Kubler, Monzer Daoud, Pierre Osmond, Arnaud Polette <b>Data-driven hybrid FE-AI model of residual stress profiles after shot peening based on a design of experiment methodology</b>
<b>10:20</b>	S2 – <b>Afia Kouadri-Henni</b> – LS2N, ROMAS, Centrale Nantes – Nantes – France Afia Kouadri-Henni <b>Simulation of low-cycle fatigue residual stresses in DP600 dual-phase steel laser-welded structures</b>
<b>10:40</b>	S2 – <b>Sevan Garois</b> – IRT – Metz – France Sevan Garois, Khouloud Derouiche, Monzer Daoud, Khalil Traidi, Francisco Chinesta <b>Data-driven modeling for residual stress prediction after induction treatment process of C45 steel</b>
<b>11:00</b>	Coffee break
<b>11:20</b>	S2 – <b>Thomas Schenk and Stéphane Berbenni</b> – Institut Jean Lamour – Nancy / LEM3 – Metz – France Alain Jacques, Thomas Schenk, Komlavi Elohi, Ablam Massa, Stéphane Berbenni <b>Modelling the evolution of the (200) diffraction peak of a Single Crystal Superalloy during a creep test</b>
<b>11:40</b>	S2 – <b>Nicolas Gort</b> – University of Applied Sciences and Arts Northwestern Switzerland – Windisch – Switzerland Nicolas Gort <b>Holistic approach for simulation of residual stresses in high temperature composite structures</b>
<b>12:00</b>	S2 – <b>Komlavi Mawuli Senyo</b> – Université de Lyon, INSA-Lyon , CNRS UMR5259, LaMCoS – Villeurbanne – France Komlavi Mawuli Senyo, Thibaut Chaise, Éric Feulvarch, Aurélien Chazottes-Leconte, Jean-Michel Bergheau, Daniel Nelias <b>Electromagnetic Peening Design for Welding or Additive Manufacturing</b>
<b>12:40</b>	Lunch

**Schedule Monday 28<sup>th</sup> March** – ROOM 101 – Afternoon sessions

<b>13:45</b>	Keynote: S5 – <b>Ines Gilch</b> – Technical University Munich – Garching – Germany Ines Gilch, Benedikt Schauerte, Kay Hameyer, Wolfram Volk <b>Influence of embossing point density on residual stress distribution and magnetic material properties of non-oriented electrical steel</b>
<b>14:10</b>	S5 – <b>Michael Meindlhumer</b> – Christian Doppler Laboratory for Advanced Synthesis of Novel Multifunctional Coatings at the Department of Materials Science, Montanuniversität Leoben – Leoben – Austria Michael Meindlhumer, Nikolaus Jäger, Stefan Spor, Martin Rosenthal, Hynek Hruby, Julius F. Keckes, Christian Mitterer, Rostislav Daniel, Jozef Keckes, Juraj Todt <b>Cross-sectional X-ray nanodiffraction reveals nanoscale residual stress and microstructure gradients across the cutting edge area of a TiN coating on WC-Co</b>
<b>14:30</b>	S5 – <b>Jozef Keckes</b> – Montanuniversität Leoben – Leoben – Austria Jozef Keckes, Juraj Todt, Michael Meindlhumer, Sabine Bodner, Christina Krywka, Manfred Burghammer <b>Cross-Sectional X-ray Micro- and Nano-Diffraction on Thin Films, Coatings and Near-Surface Regions</b>
<b>14:50</b>	S5 – <b>Praveen Karebasannanavar Ramachandrapa</b> – The Open University – Milton Keynes – United Kingdom Praveen K R, Forough Hosseinzadeh, P John Bouchard, Fabien Lefebvre, Damien Guillon <b>Advancing the Contour Method for the Measurement of Residual Stress in Polymer Composites</b>
<b>15:10</b>	S5 – <b>J.P. Nobre</b> – Univ Coimbra, CFisUC, Department of Physics – Coimbra – Portugal J.P. Nobre, T.C. Smit, R.G. Reid, T. Wu, T. Niendorf, D. Marais, A.M. Venter <b>Through-thickness residual stress evaluation in a cross-ply fibre-metal laminate using incremental hole drilling</b>
<b>15:30</b>	S5 – <b>Vincent Ji</b> – ICMMO/SP2M, UMR CNRS 8182, Université Paris-Saclay – Orsay – France Vincent Ji, Nathalie Prud'Homme <b>Oxide layer stresses studied on a Zr-based metallic glass alloy during oxidation</b>
<b>15:50</b>	S5 – <b>Thibault Chommaux</b> – Université de Poitiers – Poitiers – France Thibault Chommaux, Pierre-Olivier Renault, Philippe Goudeau, Dominique Thiaudière <b>In situ electrical and mechanical study of Indium Tin Oxide films deposited on flexible substrate: a synchrotron investigation</b>
<b>16:10</b>	Coffee break
<b>16:30</b>	S8 – <b>Joana Rebelo Kornmeier</b> – Heinz Maier-Leibnitz Zentrum (MLZ), Technical University of Munich – Garching – Germany Joana Rebelo Kornmeier, Simon Vitzthum, Michael Hofman, Maximilian Gruber, Emad Maawad, Wolfram Volk <b>Onset of yielding – macro and micro evidence</b>
<b>16:50</b>	S8 – <b>Pengfei Gao</b> – LASMIS, University of Technology of Troyes (UTT) – Troyes – France Pengfei Gao, Zhidan Sun, Delphine Retraint <b>Experimental study on multiaxial fatigue properties of a AA7075 alloy treated by surface mechanical attrition treatment</b>
<b>17:10</b>	S8 – <b>Olivier Castelnau</b> – PIMM – Paris – France Vincent Jacquemain, Doriana Viinci, Christophe Cheuleu, Vincent Michel, Véronique Favier, Olivier Castelnau, Cristain Mocuta, Dominique Thiaudière, Nicolas Ranc <b>In situ investigation of the gigacycle fatigue domain using ms – ns time resolved x-ray diffraction at synchrotron facility</b>
<b>17:30</b>	S8 – <b>Johan Ahlström</b> – Chalmers Univ Tech – Gothenburg – Sweden Can Yildirim, Yubin Zhang, Erika Steyn, Fang Liu, Carsten Detlefs, Johan Ahlström <b>Exploring Three Dimensional Orientation and Residual Stresses in Railway Steels</b>
<b>17:35</b>	S8 – <b>Fabian Jaeger</b> – Center for Structural Materials MPA-IfW, Technische Universität Darmstadt – Darmstadt – Germany Fabian Jaeger, Alessandro Franceschi, Holger Hoche, Peter Groche, Matthias Oechsner <b>Improvement of the fatigue properties of cold extruded austenitic stainless steel by optimization of the residual stress state and its stability</b>

**Schedule Tuesday 29<sup>th</sup> March** – Auditorium – Morning sessions

<b>08h30</b>	<p>Plenary talk : <b>Yann Le Bouar</b> – Université Paris-Saclay, ONERA, CNRS, LEM - France Yann Le Bouar <b>Internal stresses and microstructures -modelling</b></p>
<b>09h25</b>	<p>Keynote: <b>S4 – David Canelo-Yubero</b> – Helmholtz-Zentrum Hereon – Geesthacht – Germany David Canelo-Yubero, Guilherme Abreu Faria, Manuel Sanchez-Poncela, Peter Staron, Juan Manuel Martinez, Emad Maawad, Norbert Schell <b>On the influence of thermal treatment on residual stresses in an additively manufactured austenitic steel 316L</b></p>
<b>09h50</b>	<p><b>S4 – Ardeshir Sarmast</b> – Fraunhofer Institute for Mechanics of Materials (IWM) – Freiburg – Germany Jan Schubnell, Ardeshir Sarmast, Felix Altenhöner, Shahram Sheikhi, Moritz Braun, Sören Ehlers <b>Residual stress analysis of butt welds made of additive and traditionally manufactured 316L stainless steel plates</b></p>
<b>10h10</b>	<p><b>S4 – Sandra Cabeza</b> – Insitute Laue Langevin – Grenoble – France Sandra Cabeza, Burak Ozcan, Jonathan Cormier, Thilo Pirling, Ines Puente, Thomas Hansen, Inmaculada Lopez, Elena Lopez <b>Neutron in-situ monitoring of additively manufactured Ni-superalloys: a comprehensive overview from fabrication to post heat treatment and mechanical performance.</b></p>
<b>10h30</b>	<p><b>S4 – Claire Gong</b> – Light, Nanomaterials, Nanotechnologies, CNRS ERL 7004, University of Technology of Troyes – Troyes – France Claire Gong, Joseph Marae Djouda, Abdelhamid Hmima, Fabrice Gaslain, Mahdi Chemkhi, Thomas Maurer, Benoît Panicaud <b>Influence of mechanical attrition treatment on 17-4 PH stainless steel: Comparison at sub-micron scale between SENT specimens</b></p>
<b>10h50</b>	Coffee break
<b>11h10</b>	<p><b>S4 – Mohamed Fares Slim</b> – ESRF – The European Synchrotron – Grenoble – France Mohamed Fares Slim, Guillaume Geandier, Fabien Rouillard, Benoit Malard <b>Residual stress gradient in austenitic stainless-steel cladding after exposure in carburizing nuclear liquid sodium</b></p>
<b>11h30</b>	<p><b>S4 – Yanxue Zhang</b> – Arts et Métiers – Aix en Provence – France Yanxue Zhang <b>On residual stress development during gaseous nitriding of M2 steel</b></p>
<b>11h50</b>	<p><b>S4 – Sébastien Jégou</b> – MSMP Lab., Arts et Métiers – Aix-en-Provence – France Sébastien Jégou, Laurent Barrallier <b>Residual stresses after nitriding on as quenched bearing steel</b></p>
<b>12h10</b>	<p><b>S4 – Michael Zürn</b> – Institute of Applied Materials - Materials Science (IAM-WK), Karlsruhe Institute of Technology (KIT) – Karlsruhe – Germany Michael Zürn, Ogün Baris Tapar, Jérémy Epp, Fabian Wilde, Jens Gibmeier <b>Real-time monitoring of the near-surface stress development during quenching after low-pressure carburizing</b></p>
<b>12h30</b>	Lunch



**Schedule Tuesday 29<sup>th</sup> March** – Auditorium – Afternoon sessions

<b>13h45</b>	<b>Poster session</b>
<b>15h15</b>	Keynote: S2 – <b>Claire Maurice</b> – Mines Saint-Etienne, CNRS – Saint-Etienne – France Claire Maurice, Florent Coudon, Stéphane Gourdin, Daniel Gaky <b>Residual stress field beneath spherical indentation in Ni-based superalloy: HR-EBSD vs CPFEM</b>
<b>15h40</b>	S2 – <b>Björn Andersson</b> – Chalmers University of Technology – Gothenburg – Sweden Björn Andersson, Johan Ahlström, Lennart B Josefson, Magnus Ekh <b>Simulation of welding in pearlitic steels - Phase transformations, homogenization and cyclic plasticity</b>
<b>16h00</b>	S2 – <b>Vincent Robin</b> – EDF – Chatou – France Vincent Robin, Sofiane Hendili, Charles Demay, David Iampietro, Josselin Delmas, David Albrecht <b>Digital abacus for welding of thick section steel tubes</b>
<b>16h20</b>	<b>Coffee break</b>
<b>16h40</b>	S1 – <b>Abir Boujnah</b> – Laboratoire de Mécanique des Sols, Structures et Matériaux – GIF-SUR-YVETTE – France Abir Boujnah, Jan Negggers, Denis Solas, Aurélie Jamoneau, Véronique Aubin <b>Dissolving as a means to determine residual stress in wires</b>
<b>17h00</b>	S1 – <b>Alexander Liehr</b> – Institute of Materials Engineering, University of Kassel – Kassel – Germany Alexander Liehr, Sebastian Degener, Artjom Bolender, Thomas Wegener, Felix Wittich, Thomas Niendorf, Andreas Kroll <b>Non-destructive residual stress analysis using micromagnetic and energy dispersive diffraction methods – Opportunities and Challenges</b>
<b>17h20</b>	S1 – <b>Rahel Jedamski</b> – Leibniz Institute for Materials Engineering - IWT – Bremen – Germany Rahel Jedamski, Jonas Heinzl, Bernhard Karpuschewski, Jérémy Epp <b>In-process measurement of Barkhausen noise for detection of thermo-mechanical influenced surface areas during grinding</b>
<b>17h40</b>	S1 – <b>Muneyuki Imfuku</b> – Tokyo City University – Tokyo – Japan Muneyuki Imfuku, Kouhei Sato, Kotaro Kawasaki, Taro Ohtsubo, Masaki Fujita, Takehito Ikeuchi <b>Evaluation of non-Joulian magnetostriction in giant magnetostrictive alloys, Terfenol-D and Galfenol</b>
<b>19h00</b>	<b>Reception at Town Hall</b>
<b>20h00</b>	<b>Gala Dinner at Town Hall</b>

**Schedule Tuesday 29<sup>th</sup> March** – Room 101 – Morning sessions

<b>09h25</b>	<p>Keynote: S5 – <b>Pierre-Olivier Renault</b> – University of Poitiers – Poitiers – France          Pierre-Olivier Renault, Patrice Kreiml, Barbara Putz, Shuhel Altaf Husain, Damien Faure, Megan Jo Cordill</p> <p><b>Mechanical influence of layer order in bilayer thin films during biaxial straining: synchrotron diffraction investigation</b></p>
<b>09h50</b>	<p>S5 – <b>Radomir Kužel</b> – Faculty of Mathematics and Physics, Charles University – Prague – Czech Republic          Radomir Kužel, Lukáš Horák, Milan Dopita</p> <p><b>X-Ray Diffraction Study of Stresses and Textures in Strongly Oriented Thin Films</b></p>
<b>10h10</b>	<p>S5 – <b>Manuela Klaus</b> – Helmholtz-Zentrum Berlin – Berlin – Germany          Manuela Klaus, Christoph Genzel, Elmeri Österlund, Mervi Paulasto-Kröckel</p> <p><b>Residual stress analysis of epitaxial MOVPE AlN films deposited on silicon wafers</b></p>
<b>10h30</b>	<p>S5 – <b>Przemyslaw Kot</b> – AGH - University of Science and Technology, WFiIS – Krakow – Poland          Przemyslaw Kot, Andrzej Baczmanski, Marcin Wronski, Vadim Sikolenko, Gizo Bokuchava, Christian Scheffzuk, Sebastian Wronski</p> <p><b>Diffraction measurement of stress evolution for selected groups of grains in textured polycrystalline materials</b></p>
<b>10h50</b>	<b>Coffee break</b>
<b>11h10</b>	<p>S1 – <b>Jaroslav Vaclavik</b> – Vyzkumny a zkusebni ustav Plzen s.r.o. – Plzen – Czech Republic          Jaroslav Vaclavik, Radka Musilova, Bohuslav Reha</p> <p><b>Groove grinding method for near the surface residual stress measurement</b></p>
<b>11h30</b>	<p>S1 – <b>Xavier van Heule</b> – University of Bristol – Bristol – United Kingdom          Xavier van Heule, Chris Truman, Harry Coules, Ronald Clark</p> <p><b>Adaptation of the ICHD method for spent AGR fuel cladding</b></p>
<b>11h50</b>	<p>S1 – <b>Diego Britez</b> – University of Bordeaux – Talence – France          Diego Britez, Michael B. Prime, Sana Werda, Raynald Laheurte, Philippe Darnis, Olivier Cahuc</p> <p><b>An improved methodology based on a non-consecutive polynomial order selection in a residual stress inverse solution problem.</b></p>
<b>12h10</b>	<p>S1 – <b>Zhe Cai</b> – Department of Mechanical, Aerospace and Civil Engineering, University of Manchester – Manchester – United Kingdom          Zhe Cai, Jan Roman Hönnige, Matthew Roy</p> <p><b>A correction method for measuring residual stress of irregular cross-section weldments with the contour method</b></p>
<b>12h30</b>	<b>Lunch</b>

**Schedule Tuesday 29<sup>th</sup> March** – Room 101 – Afternoon sessions

<b>13h45</b>	Poster session
<b>15h15</b>	Keynote: S8 – <b>Harry Coules</b> – University of Bristol – Bristol – United Kingdom Harry Coules, Matthew Weltevreden, Isabel Hadley <b>Residual stresses in probabilistic structural integrity assessment</b>
<b>15h40</b>	S8 – <b>Amir-Hossein Mahmoudi</b> – Bu-Ali Sina University – Hamedan – Islamic Republic of Iran Amir-Hossein Mahmoudi, Fatemeh Karamifard, Ava Khajeian, Ehsan Froozmehr, Mahmood M. Shokrieh <b>An Experimental Study on the Effects of Manufacturing Parameters on Residual Stresses in a Stainless Steel using Selective Laser Melting Method</b>
<b>16h00</b>	S8 – <b>Michael Rhode</b> – Bundesanstalt für Materialforschung und -prüfung (BAM) – Berlin – Germany Michael Rhode, Arne Kromm, Tobias Mente, Denis Czeskleba, Eugen Wilhelm, Thomas Kannengiesser <b>Residual stresses and hydrogen assisted cracking in thick-walled submerged arc weld joints for offshore applications</b>
<b>16h20</b>	Coffee break
<b>16h40</b>	S2 – <b>Joel Rech</b> – Centrale Lyon - ENISE – Saint-Etienne – France Maxime Dumas, Dorian Fabre, Frédéric Valiorgue, Guillaume Kermouche, Bertrand Truffart, Mathieu Girinon, Alexandre Brosse, Habib Karaoui, Joel Rech <b>3D numerical modelling of turning-induced residual stresses for a fillet radius in 15-5PH stainless steel</b>
<b>17h00</b>	S2 – <b>Daniel Weber</b> – Institute for Manufacturing Technology and Production Systems, Technische Universität Kaiserslautern – Kaiserslautern – Germany Daniel Weber, Benjamin Kirsch, Julianne E. Jonsson, Chris R. D’Elia, Barbara S. Linke, Michael R. Hill, Jan C. Aurich <b>Simulation based investigation on the effect of the topology and size of milled thin-walled monolithic aluminum parts on the part distortion due to residual stresses</b>
<b>17h20</b>	S4 – <b>Lorenz Engelking</b> – Bundesanstalt für Materialforschung und -prüfung (BAM) – Berlin – Germany Lorenz Engelking, Antonia Eissel, Dirk Schröpfer, Kai Treutler, Thomas Kannengießer, Volker Wesling <b>Optimisation of surface residual stresses using hybrid milling processes for additive manufactured Ni alloy components</b>
<b>17h40</b>	S4 – <b>Amadeus Becker</b> – Bundesanstalt für Materialforschung und -prüfung – Berlin – Germany Amadeus Becker, Karsten Wandtke, Dirk Schröpfer, Arne Kromm, Thomas Kannengießer, Ronny Scharf-Wildenhain, André Hälsig <b>Residual stress evolution during slot milling for repair welding and WAAM of high-strength steel components</b>
<b>19h00</b>	Reception at Town Hall
<b>20h00</b>	Gala Dinner at Town Hall

**Schedule Wednesday 30<sup>th</sup> March** – Auditorium – Morning sessions

<b>08h30</b>	<p>Plenary talk : <b>Giovanni Bruno</b> - University of Potsdam, Institute of Physics and Astronomy and BAM (Bundesanstalt für Materialforschung und -prüfung) Berlin</p> <p><b>Redefining residual stress analysis to tackle the challenges posed by additively manufactured materials and structures</b></p>
<b>09h25</b>	<p>Keynote: <b>S1 – Can Yildirim</b> – European Synchrotron Radiation Facility – Grenoble – France</p> <p>Can Yildirim, Philip Cook, Hugh Simons, Henning Poulsen, Raquel Rodriguez-Lamas, Mustafacan Kutsal, Julia Garriga-Ferrer, Carsten Detlefs</p> <p><b>3D mapping of strain and orientation of embedded crystalline structures using dark field X-ray microscopy</b></p>
<b>09h50</b>	<p><b>S4 – Dhia Charni</b> – Leibniz Institute for Materials Engineering - IWT – Bremen – Germany</p> <p>Dhia Charni, Heiner Meyer, Svetlana Ishkina-Ortmann, Lasse Langstädtler, Christian Schenck, Norbert Schell, Bernd Kuhfuss, Jeremy Epp</p> <p><b>Numerical analysis and experimental investigation of strain fields during rotary swaging of steel by in-situ synchrotron X-ray radiation</b></p>
<b>10h10</b>	<p><b>S4 – Florian Lang</b> – Institute for Applied Materials (IAM-WK), Karlsruhe Institute of Technology (KIT) – Karlsruhe – Germany</p> <p>Florian Lang, Johannes-Christian Schmitt, Sandra Cabeza, Thilo Pirling, Jochen Fiebig, Robert Vaßen, Jens Gibmeier</p> <p><b>Residual stresses of large cavities filled by cold gas repair spray</b></p>
<b>10h30</b>	<p><b>S4 – Mate Sepsi</b> – University of Miskolc, Institute of Physical Metallurgy, Metal forming and Nanotechnology – Miskolc – Hungary</p> <p>Mate sepsi</p> <p><b>Residual stress monitoring as a quality assurance process supporting manufacturing and development</b></p>
<b>10h50</b>	Coffee break
<b>11h10</b>	<p><b>S4 – Yutaka Tsumura</b> – The University of Sydney – Sydney – Australia</p> <p>Yutaka Tsumura, Gengxian Lim, Anna Paradowska, Andrei Rode, Steve Madden, Meera Mohan, Gwénaëlle Proust</p> <p><b>Investigation of Residual Stress and Mechanical Properties of Steelwork After Laser Cleaning</b></p>
<b>11h30</b>	<p><b>S4 – Simone Carone</b> – Politecnico di Bari – Bari – Italy</p> <p>Simone Carone, Vincenzo Moramarco, Giovanni Pappalettera, Giuseppe Barbieri, Caterina Casavola</p> <p><b>Application of the Contour Method for residual stress measurement in Ti - Inconel welded joints</b></p>
<b>11h50</b>	<p><b>S4 – Tim Richter</b> – Bundesanstalt für Materialforschung und -prüfung – Berlin – Germany</p> <p>Tim Richter</p> <p><b>Residual stress distribution on TIG and FSW welded component like samples of CoCrFeMnNi high- and CoCrNi medium entropy alloy</b></p>
<b>12h10</b>	<p><b>S4 – Eckehard Mueller</b> – Bochum University of Applied Sciences – Bochum – Germany</p> <p>Eckehard Mueller, Thomas Hermann</p> <p><b>Formation of residual stresses at welding seams with S235 and S355</b></p>
<b>12h30</b>	Lunch

**Schedule Wednesday 30<sup>th</sup> March** – Auditorium – Afternoon sessions

<b>13:45</b>	<p>Keynote: S1 – <b>Guilherme Abreu Faria</b> – Helmholtz-Zentrum Hereon – Hamburg – Germany  Guilherme Abreu Faria, Gleb Dovzhenko, Thomas Wroblewski, Peter Staron, Martin Müller  <b>New Opportunities for Synchrotron Residual Stress Analysis: The New White Beam Beamline P61A at PETRA III</b></p>
<b>14:10</b>	<p>S1 – <b>Christoph Genzel</b> – Helmholtz-Zentrum Berlin für Materialien und Energie – Berlin – Germany  Christoph Genzel, Manuela Klaus, Daniel Apel  <b>Residual stress analysis at the inner wall of small boreholes by energy-dispersive diffraction: Synchrotron versus laboratory</b></p>
<b>14:30</b>	<p>S1 – <b>Sebastian Degener</b> – Institute of Materials Engineering, University of Kassel – Kassel – Germany  Sebastian Degener, Alexander Liehr, Artjom Bolender, Guilherme Abreu Faria, Gleb Dovzhenko, Peter Staron, Martin Müller, Thomas Niendorf  <b>Assessing residual stress states using high energy white beam synchrotron radiation – prospects at P61A at DESY</b></p>
<b>14:50</b>	<p>S1 – <b>Daniel Apel</b> – Helmholtz-Zentrum Berlin für Materialien und Energie – Berlin – Germany  Daniel Apel, Mirko Boin, Manuela Klaus, Roland Mainz, Guido Wagener, Christoph Genzel  <b>The potential of high-flux liquid anode X-ray sources for micro-structure and stress analysis</b></p>
<b>15:10</b>	<p>S1 – <b>Valeria Mertinger</b> – University of Miskolc, Institute of Physical Metallurgy, Metal forming and Nanotechnology – Miskolc – Hungary  Valeria Mertinger, Mate Sepsi, Marton Benke  <b>How to take advantage of the metallurgical problems associated with residual stress measurement?</b></p>
<b>15:30</b>	Coffee break
<b>15:50</b>	<p>S4 – <b>David Easton</b> – Advanced Forming Research Centre, University of Strathclyde – Glasgow – United Kingdom  David Easton, Salaheddin Rahimi, James Wood  <b>Residual Stress Modification in Dissimilar Tungsten-Steel Joint for Fusion Reactor Applications</b></p>
<b>16:10</b>	<p>S4 – <b>P John Bouchard</b> – The Open University – Milton Keynes – United Kingdom  P John Bouchard, Ruiyao Zhang  <b>Measured Residual Stresses in a Ring-weld After PWHT</b></p>
<b>16:30</b>	<p>S4 – <b>Thomas Nitschke-Pagel</b> – Technische Universität Braunschweig, Institute of Joining and Welding (ifs) – Braunschweig – Germany  Morteza Dadkhah, Michael Georg Zuern, Jens Gibmeier, Thomas Nitschke-Pagel  <b>Residual stress generation in cold-formed welded steels - Part II: Interaction of weld thermal cycles and stability of strain hardening induced micro residual stresses</b></p>
<b>16:50</b>	<p>S4 – <b>Glen Sloan</b> – University of Adelaide – Adelaide – Australia  Glen Sloan  <b>Measurement of Residual Stresses Induced at the Weld toes of High Strength T butt Welds by the Toe Dressing Process Using Gas Tungsten Arc Welding With No Addition of Filler Metal</b></p>
<b>17h10</b>	Closing ceremony

**Schedule Wednesday 30<sup>th</sup> March** – Room 101 – Morning sessions

<b>09h25</b>	Keynote: S1 – <b>Paolo Scardi</b> – University of Trento – Trento – Italy Paolo Scardi <b>What can we understand about the strain by analyzing the diffraction line profile?</b>
<b>09h50</b>	S1 – <b>Lalith Kumar Bhaskar</b> – Indian Institute of Technology-Madras – Chennai – India Lalith Kumar Bhaskar, Gobind Kumar, Nedunchezian Srinivasan, Ravi Kumar <b>Design and development of a miniaturized multiaxial test setup for in situ x-ray diffraction experiments</b>
<b>10h10</b>	S8 – <b>Ewann Gautier</b> – ENSTA Bretagne, UMR CNRS 6027, IRDL – Brest – France Ewann Gautier, Bruno Leveil, Cédric Doudard, Sylvain Calloch, Anthony Ezanno <b>Calibration and validation of XEC for in-situ stress assessment under cyclic loading</b>
<b>10h30</b>	S8 – <b>Simon Strodick</b> – Chair of Materials Test Engineering (WPT), TU Dortmund University – Dortmund – Germany Simon Strodick, Felix Roman Hühn, Robert Schmidt, Dirk Biermann, Andreas Zabel, Frank Walther <b>Evolution of the residual stress state in BTA deep-drilled components under quasi-static and cyclic loading</b>
<b>10h50</b>	Coffee break
<b>11h10</b>	S8 – <b>Johannes Preußner</b> – Fraunhofer IWM – Freiburg – Germany Jan Schubnell, Johannes Preußner, Majid Farajian <b>Decreasing and increasing the value of the compressive residual stresses induced by high frequency mechanical impact treatment during cyclic loading</b>
<b>11h30</b>	S8 – <b>Arne Kromm</b> – Bundesanstalt für Materialforschung und -prüfung (BAM) – Berlin – Germany Arne Kromm, Dirk Schröpfer, Michael Rhode, Robert Wimpory, Sergej Gook, Thomas Kannengießer <b>Influence of residual stresses on stress relief cracking of thick-walled creep-resistant steel welds</b>
<b>11h50</b>	S8 – <b>Antoine Deheeger</b> – TechnipFMC – Le Trait – France Antoine Deheeger, Romain Ferré, Didier Hanonge <b>Residual Stresses in Flexible Pipe Tensile Armour Wires</b>
<b>12h10</b>	S8 – <b>Daniel Pérez Gallego</b> – Universidad Politecnica de Madrid – Madrid – Spain Daniel Pérez Gallego, Jesus Ruiz Hervías, David Cendón Franco <b>Shear residual stresses induced by torsional loading</b>
<b>12h30</b>	Lunch

**Schedule Wednesday 30<sup>th</sup> March** – Room 101 – Afternoon sessions

<b>13:45</b>	<p>Keynote: S6 – <b>Nicola Simon</b> – Institute for Applied Materials (IAM-WK), Karlsruhe Institute of Technology (KIT) – Karlsruhe – Germany  Nicola Simon, Ulrich Lienert, Malte Blankenburg, Jens Gibmeier  <b>Evolution of lattice strain pole figures for uniaxial deformation of textured duplex stainless steel</b></p>
<b>14:10</b>	<p>S6 – <b>Lisa Germain</b> – MSMP Laboratory – Aix-en-Provence – France  Lisa Germain, Sébastien Jégou, Laurent Barrallier  <b>Effects of stress and strain gradients on the kinetics of thermochemical surface treatments (gas nitriding) of steels</b></p>
<b>14:30</b>	<p>S6 – <b>Julien Teixeira</b> – Institut Jean Lamour, Univ. Lorraine CNRS – Nancy – France  Karthikeyan Jeyabalan, Julien Teixeira, Sabine Denis, Guillaume Geandier, Jacky Dulcy, Benoît Denand, Grégory Michel, Simon Catteau, Marc Courteaux  <b>Effect of carbon and nitrogen enrichment in the austenitic field on the formation of microstructures and residual stresses in carburized and carbonitrided low-alloyed steel parts: experimental study and simulation</b></p>
<b>14:50</b>	<p>S6 – <b>Mathias Lamari</b> – Institut Jean Lamour – Nancy – France  Mathias Lamari, Sébastien Allain, Guillaume Geandier, Astrid Perlade, Kangying Zhu  <b>In situ determination of phase stress states in unstable medium manganese steels by high energy X-ray diffraction on synchrotron beamline</b></p>
<b>15:10</b>	<p>S6 – <b>Benoît Malard</b> – Université de Toulouse, CIRIMAT, CNRS/INPT/UPS – Toulouse – France  Benoît Malard  <b>Coupling high-energy synchrotron and finite element modeling to study shape memory alloy behavior at the grain scale</b></p>
<b>15:30</b>	Coffee break
<b>15:50</b>	<p>S4 – <b>Franck Decroos</b> – Université de Bourgogne Franche-Comté – Sévenans – France  Franck Decroos, Eric Bourillot, Cécile Langlade  <b>Characterization of Thermal Spray coatings via residual stress fields investigations: compare and contrast macro and micro-scales studies</b></p>
<b>16:10</b>	<p>S5 – <b>Olivier Thomas</b> – Aix Marseille Univ – Marseille – France  Olivier Thomas, Henry Proudhon, Thomas Cornelius, Etienne Navarro, Stéphanie Escoubas, Chaogang Ding, Jie Xu, Rahul Sahay, Pooi See Lee, Nagarajan Raghavan, Arief Budiman  <b>Shear loading of FCC/BCC Cu/Nb nanolaminates studied by in-situ X-Ray micro-diffraction</b></p>
<b>16:30</b>	<p>S5 – <b>Henry Pan</b> – EPCO Test Tech. Ltd. – Shanghai – China  Wenlong Zhu, Chuanhai Jiang, Henry Pan  <b>Influences of Shot Peening on Residual Stress and Microstructure of CNT/Al-Cu-Mg Composite</b></p>
<b>16:50</b>	<p>S5 – <b>Laurent Barrallier</b> – Arts et Métiers, Institute of Technology – Aix-en-Provence – France  Jabrane Kanboui, Nathalie Mangelinck-Noël, Laurent Barrallier  <b>XRD residual stress measurement in grains of casting photovoltaic silicon</b></p>

# Posters list

## Session 1

- Bruno Lima, Ronnie Rego, André Oliveira, and Thiago Oliveira. *Early Stages Fatigue Detection Using Magnetic Barkhausen Noise for Evaluation of Residual Stress Relaxation*
- Wen Cui, Manuel Sánchez Poncela, Romain Badyka, Philipp Mayr, Ricardo Fernández Gutiérrez, Philip J. Withers, and Matthew J. Roy. *EASI-STRESS Standardization of Industrial Residual Stress Measurement: Benchmark Specimen Design*
- Aboubakar Sedick Ibrahim Mamane, Sylvain Giljean, Marie-José Pac, and Gildas L'Hostis. *Numerical and Experimental Study of the Residual Stress Profile in Fiber Reinforced Composites: Optimization of the Incremental Hole Drilling Method*
- Sebastian Send, Dominik Dapprich, and Mikko Palosaari. *Fast residual stress determination by means of two-dimensional X-ray diffraction using the  $\sin^2\psi$ -method*
- Jonas Holmberg. *Influence of different electrolytes and electrolytical polishing methods for residual stress profile measurements with lab-XRD*
- Leila Sellami, Virgil Optasanu, Rémi Martin, Laurent Kubat, Manuel François, and Éric Bourillot. *Micromechanical analysis of materials by Scanning Microwave Microscopy (SMM)*
- Mohammed Belassel, James Pineault, and Michael Brauss. *Introducing Triaxial Stress Field for Residual Stress Measurement Using Cos-Alpha Technique*
- Robert C. Wimpory, Michael Hofmann, Joana Rebelo Kornmeier, and Jan Šaroun. *Factors influencing the sampled gauge volume (SGV) when measuring in the out of plane (normal) direction.*
- Kenji Suzuki, Ayumi Shiro, Takahisa Shobu, Hidenori Toyokawa, and Choji Saji. *Stress Measurement of Shrink-Fit Ring using Double-Exposure Method with Hard Synchrotron X-Rays*
- Tobias Fritsch, Maximilian Sprengel, Alexander Evans, Lena Farahbod-Sternahl, Romeo Saliwan-Neumann, Michael Hofmann, and Giovanni Bruno. *Determination of residual stresses in additively manufactured lattice structures*
- Peter Szobota, Mate Sepsi, and Valeria Mertinger. *Innovative Application of Centerless Diffractometers for Non-Destructive Qualification of Surface Treatment Processes*
- Shyjumon Ibrahimkutty. *Rigaku solution for micro area X-ray Stress analysis – SmartLab and AutoMATE II*
- Marco Beghini, Tommaso Grossi, Ciro Santus, and Emilio Valentini. *A calibration bench to validate systematic error compensation strategies in hole drilling measurements*
- Antoine Proust, Thibaux Blanc, Marouane Brahimi, Yves Royal, and David Quidort. *Mapping residual stress in quenched and tempered high strength steels plates*
- Yoshihisa Sakaida, Kenji Suzuki, and Keisuke Tanaka. *Standard of the  $\cos\alpha$  method for X-ray stress measurement using two-dimensional detector*
- Carola Corazza, Alessio Benincasa, and Enrico Boccini. *Experimental Investigations on the Hole Drilling Method for the Residual Stress Measurement on Different Materials According to the new ASTM E837-20*



- Jeffrey Bunn, Christopher Fancher, Ray Gregory, Paris Cornwell, and Andrew Payzant. *Recent Upgrades to the Residual Stress Diffractometer at the High Flux Isotope Reactor (HIDRA)*
- Arnold C. Vermeulen. *Challenges for Retained Austenite analysis with XRD*
- Fabien Lefebvre, Simon Robbe, Eric Usmial, and Thierry Bergey. *GFAC (French Association for residual stress analysis)*
- Henri Walaszek, Fabien Lefebvre, Fan Zhang, Eric Wasniewski, and Patrick Bouteille. *Contribution of Non-Destructive Methods for residual and applied stress assesment*
- Jörg Behler. *Fast X-ray Residual Stress Determination using the cos-alpha Method and Measurement Automation*
- Julien Vaïssette, Manuel Paredes, Catherine Mabru, and Hervé Orcière. *Proposing a method for characterizing residual stresses in small diameter drawn wires*
- Maximilian Krause and Thomas Böhlke. *Full-Field X-Ray Elastic Constant Calculation*
- Richard Moat, Joe Kelleher, and John Brokx. *Modelling the effect of defects in a neutron gauge volume*
- Eric Usmial, Simon Robbe, Elia Zgheib, Manuel François, Benoit Malard, P. Le-bec, Nicolas Ratel-Ramond, Charles Mareau, Thierry Bergey, E. Daniel, Ewann Gautier, Guillaume Geandier, and Fabien Lefebvre. *Material removal correction for residual stress analysis with X-ray diffraction*
- Philippe Bocher, Romane Le Pellec, Dorian Delbergue, and Pierre Maurel. *Normal shear stress contribution on surface residual stress estimation using X-ray diffraction methods: a sensitive question*
- Gary Schajer and Michael B. Prime. *Why is it so Challenging to Measure Residual Stresses ?*

## Session 2

- Jose Jimenez and Lakhdar Taleb. *About the Memory of Transformation Induced Plasticity in 35NCD16 Carbon Steel Subjected to Various Thermomechanical Histories*
- André Luiz Oliveira, Guilherme Guimarães, Ronnie Rego, and Alfredo Faria. *Design for Residual Stress: Understanding the finishing processes interaction predictively.*
- Valentine Legrand, Serge Prigent, Pierre-Louis Reydet, Florent Krajcarz, and Nadège Streich. *Understanding of Satoh trials to assess the residual stresses occurring during welding of Invar®*
- Jakob Bialowas, Thomas Antretter, and Jürgen Maierhofer. *Process model of the rim hardening of railway wheels*
- Thomas Nitschke-Pagel and Jiamin Sun. *Influence of strain hardening models on the predicted welding residual stresses*
- Philippe Pilvin, Denis Carron, and Florent Bridier. *Isotropic-kinematic hardening model for predicting residual stress in multipass weldments of a high strength steel*
- Mohamed Sokore, Rija-Nirina Raelison, Sihao Deng, and Hanlin Liao. *Numerical investigation of the thermomechanical stresses due to the high-speed collision in cold spray additive manufacturing.*

- Alexander Bodewig, Florian Pape, and Gerhard Poll. *Application of stainless steel bearings with pre-induced residual stresses*
- Laura Millán García, Gabriel Carro Sevillano, Gabriel Kronberger, Óscar Garnica Alcázar, Ignacio Collado Roperro, Gizo Bokuchava, Ricardo Fernández Serrano, Jose Ignacio Hidalgo Pérez, Patricie Halodova, Alberto Sáez Maderuelo, and Gaspar González Doncel. *Genetic Programming and FEM simulation for a microscopic residual stress description in polycrystals using neutron diffraction and EBSD data.*

#### Session 4

- Lorène Héraud, Hugo Tryla, Laurent Barrallier, and Philippe Bristiel. *XRD study of the residual stresses induced by welding and their redistribution under polycyclic solicitation.*
- Steffen Heikebrügge, Bernd Breidenstein, Christian Dänekas, and Peter Schaumann. *Residual stresses of thick sheet butt welds influenced by deep rolling*
- Glen Sloan. *Residual Stress Profile Through Thickness at the End of a High Strength Plate Rolled to Achieve Curvature to Form Part of a Ring Stiffened Cylindrical Structure*
- Piotr Nikiel, Mirosław Wrobel, Stefan Szczepanik, Michał Stepien, Krzysztof Wierzbowski, and Andrzej Baczmanski. *Mechanical properties, microstructure and residual stress of Titanium grade 23 produced by Selective Laser Melting*
- Olivia Kendall, Ralph Abrahams, Anna Paradowska, Mark Reid, Cong Qiu, Peter Mutton, and Wenyi Yan. *Effect of tempering and grinding on residual stress in laser clad hypereutectoid rail components using neutron diffraction*
- Peiying Bian, Kewei Xu, Yunliang Zhang, and Fangxia Ye. *An overview of the evolution of residual stress and its effect in additive manufacturing by a selective laser melting technology*
- Cheng-Han Yu, Maximilian Sprengel, Jakob Schröder, Alexander Evans, Arne Kromm, Ru Peng, Thomas Kannengiesser, Giovanni Bruno, and Johan Moverare. *Effect of the thickness on the residual stress distribution in thin-walled laser powder bed fused structures*
- Angelo Carvalho, Ronnie Rego, André Oliveira, Tiago Colombo, and Rafael Galdino. *Residual stress evolution of microalloyed steels along the gear manufacturing chain*
- Juliette Theodore, Laurent Couturier, Baptiste Girault, and Bruno Courant. *Towards control of residual stresses in multi-material stainless steel part produced by Dual-Wire and Arc Additive Manufacturing (D-WAAM)*
- Ioannis Pantelis, Mike Smith, Anastasia Vasileiou, and Matthew Roy. *Measuring the effect of PWHT on residual stress relaxation of EB welds made of SA508 steel using the contour method*
- Marc-André Nielsen, Sabine Bodner, Emad Maadwad, Florian Resch, Jozef Keckes, Peter Staron, and Martin Müller. *Influence of geometry on residual stresses in additively manufactured aluminum alloy parts*
- Olivia McLatchie, Aneeqa Khan, Anastasia Vasileiou, Ed Pickering, John Francis, and Thilo Pirling. *Evaluation of neutron diffraction measurement uncertainties on the residual stress of electron beam welded P91 steel*
- Anastasia Vasileiou, Michael Smith, Ed Pickering, Alex Carruthers, Matthew Roy, Steve Falder, Paul Plumb, Chris Punshon, and Michael Blackmore. *Residual stress at the slope-out of electron beam welds*

- M.J. Marques, A.C. Batista, J.P. Nobre, L. Coelho, and A.M.P. de Jesus. *Residual stresses evaluation by X-ray diffraction and incremental hole drilling in AISI 316L and AISI 18Ni300 samples produced by Selective Laser Melting*
- Sebastien Rouquette, Issam Bendaoud, and Fabien Soulié. *Residual stresses in SS316L specimens after deposition of melted filler wire*
- Jiawei Tu, Anna Paradowska, Andrei Rode, Ludovic Rapp, Steve Madden, Meera Mohan, and Gwénaëlle Proust. *Analysis of Residual Stresses on Steels Subjected to Laser Ablation Treatment*
- Yuri Kudryavtsev and Jacob Kleiman. *Inducing of Compressive Residual Stresses in Surface Layers of Materials by Ultrasonic Impact Treatment*
- Fabien Lefebvre, Eric Usmaal, and Simon Robbe. *Comparative analyses and results obtained on an additive manufactured sample (an arch) built on 316L austenitic stainless steel, gathering many different residual stress characterization methods*
- Quentin Gaillard, Hussein Mbarak, Nathalie Peillon, Gilles Blanc, Xavier Boulnat, Sylvain Dancette, Sophie Cazottes, and Christophe Desrayaud. *X-Ray diffraction measurements of residual stresses after successive electro-polishing of Ti-6Al-4V parts built by L-PBF*
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- Neel Kamal Gupta, G. Ganesan, X. Siddhartha, Saim Abbas, Avinash Kumar Mehta, and K. P. Karunakaran. *Effect of Multiple Technologies on Minimizing the Residual Stress in Additive Manufacturing*

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- Alireza Dashti, Clément Keller, Benoit Vieille, and Alain Guillet. *Dependence of the Residual Stress Profile on the Fiber-Matrix Configuration in Cu-Al Composite Wires*
- Mohamed El Garah. *Effect of nitrogen content on structural and mechanical properties of AlTiTaZrHf(-N) high entropy films deposited by reactive magnetron sputtering*
- Zihao Guo, Jianqiang Zhou, Bruno Guelorget, Zhidan Sun, Delphine Retraint, and Benoît Panicaud. *Effect of residual stress on the tensile properties of gradient microstructure materials obtained by Surface Mechanical Attrition Treatment*
- David Canelo-Yubero, Guilherme Abreu Faria, Manuel Sanchez-Poncela, Peter Staron, Juan Manuel Martinez, Emad Maawad, and Norbert Schell. *On the influence of thermal treatment on residual stresses in an additively manufactured austenitic steel 316L*
- Renno Reitsnik, Kauni Kiviste, Ander Kangro, Harri Lille, and Alexander Ryabchikov. *The effect of shrinkage stresses of admixtures and surface hardeners of concrete floors*
- Emma Kruck, Lucas Autones, Gilles Rolland, Thomas Girard, Aurélie Quet, Manuel François, and Yann De Carlan. *Determinations of residual stresses in Oxide Dispersion Strengthened steel coatings obtained by Cold Spray*
- Jean-Philippe Tinnes, Julien Martin, Gregory Marcos, and Thierry Czerwiec. *Internal stress estimation into a nitrified iron aluminide (FeAl40 Grade 3) using synchrotron WAXS measurements*

- Haithem Ben Khalifa, Wissem cheikhrouhou, and Guy Schmerber. *Screening of the synthesis route on the structural, magnetic and magnetocaloric properties of La<sub>0.6</sub>Ca<sub>0.2</sub>Ba<sub>0.2</sub>MnO<sub>3</sub> manganite: A comparison between solid-solid state process and a combination polyol process and Spark Plasma Sintering*

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- Osman Adiguzel. *Internal-External Stresses and Reversible-Irreversible Memory In Shape Memory Alloys*
- Huabing Liu, Chuanhai Jiang, and Bevin Pan. *Effects of Precipitates on Microstructure, Residual Stress and Mechanical Properties of Shot Peened Mg-8Gd-3Y Alloys*
- Michael Georg Zuern, Morteza Dadkhah, Thomas Nitschke-Pagel, and Jens Gibmeier. *Residual stress generation in cold-formed welded steels - Part I: Impact of pre-deformation on residual stresses*
- Julien Teixeira, David Maréchal, Robert Wimpory, Sabine Denis, Fabien Lefebvre, and Renaud Frappier. *Formation of residual stresses during quenching of Ti17 and Ti-6Al-4V alloys: influence of phase transformations*
- Roxane Tréhorel, Thomas Schenk, Jonathan Cormier, Alain Jacques, Alice Cervellon, Svetlana Tsareva, and Zoltan Hegedüs. *In situ studies of high temperature plasticity of a monograin superalloy by far-field X-ray diffraction*

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- Michele Angelo Attolico, Claudia Barile, Caterina Casavola, Vincenzo Moramarco, and Gilda Renna. *Fatigue performance enhancement of laser peened aircraft components*
- Ioannis Violatos, Stephe Fitzpatrick, and Salaheddin Rahimi. *Bulk residual stresses and their contribution to distortion during machining of aluminium AA7075 blocks*
- James Pineault, Casey Gales, and Al Conle. *Evolution and Redistribution of Residual Stress in Welded Plates During Fatigue Loading*
- Lucas Brasileiro, Zhidan Sun, Catherine Mabru, Rémy Chieragatti, Gwénaëlle Proust, and Delphine Reira. *Effects of residual stresses and grain size gradient introduced by SMAT on rotating bending fatigue properties of a CoCrMo alloy*
- Afia Kouadri-Henni. *Influence of the laser welding direction of thin DP600 and the consequence of the fatigue strength on Residual stresses relaxation obtained by neutron diffraction*
- Andreas Jobst and Marion Merklein. *Stability of Forming Induced Residual Stresses in Stainless Steel Parts at Elevated Temperature*
- Eric Usmial, Simon Robbe, Julie Marteau, Marion Risbet, Hind Orkhis, Hervé Rognon, and Fabien Lefebvre. *Relationship between residual stress, retained austenite and fatigue behaviour in gear box*
- Florian Pape, Simon Dechant, Berd Breidenstein, Berend Denkena, and Gerhard Poll. *Influence of turning and deep rolling processes on bearing fatigue life*
- Solenne Collomb, Svetlana Tsareva, Thomas Schenk, Jean-Philippe Tinnes, Abdelkrim Redjaimia, Xiaolei Chen, Stephane Berbenni, and Alain Jacques. *Internal stresses and early type 4 fracture of welded joints in Grade 91 steel : an in situ study*