

# ECRS-11 Program

## Tuesday, June 4

10.00	<b>ECRS-11 Opening</b>					<i>Chair: Jozef Keckes</i>		
10.20	<b>Philip Withers</b> University of Manchester, United Kingdom	Internal stress redistribution during fatigue crack growth in long fibre metal matrix composites				<i>PL1 – page 97</i>		
11.10	<b>Marie-Ingrid Richard</b> Université Grenoble Alpes, CEA Grenoble, France	Imaging strain and defects in nanocrystals using in situ Bragg coherent diffraction imaging				<i>PL2 – 98</i>		
12.00	<b>Adrien Sprauel</b> MRX, France	MRX products for residual stress evaluation through X-ray diffraction				<i>EL1 – 229</i>		
12.30	Exhibition opening, Lunch							
	<b>Room 1</b>			<i>David Rafaja</i>		<b>Room 2</b>		<i>JP Nobre</i>
14.00	<b>Peter Bouchard</b> Stress-Space Ltd., Oxfordshire, UK	Simultaneous Neutron and X-ray Diffraction Measurements of Strain	<i>KL1 102</i>	<b>Xavier van Heule</b> University of Bristol, UK	Multi-Scale Characterization of Residual Stresses in Spent AGR Fuel Cladding	<i>KL2 103</i>		
14.30	<b>Session 01 – Diffraction Methods 1</b>			<b>Session 03 – Mechanical Relaxation Methods 1</b>				
14.30	<b>Guillaume Geandier</b> Institut Jean Lamour - CNRS - UL, France	Characterization of retained austenite stability in medium manganese duplex steels by High energy X-ray diffraction and DIC.	<i>S1-1 122</i>	<b>Teubes Christiaan Smit</b> University of the Witwatersrand, South Africa	Experimental validation of IHD calibration coefficients determined by machine learning for layered composite materials	<i>S3-1 138</i>		
14.50	<b>Alexander Liehr</b> Universität Kassel, Germany	A Study on Minimizing Measurement Time Based on Active Experimentation for Energydispersive X-Ray Diffraction	<i>S1-2 124</i>	<b>Miguel Yescas</b> Framatome, France	Residual stress measurements of a nuclear power plant pipe before and after weld repairs	<i>S3-2 140</i>		
15.10	<b>Alexandra Ludwik</b> AGH - University of Krakow, Poland	Study of plastic deformation in two-phase CuZn39Pb3 brass alloy using neutron diffraction	<i>S1-3 125</i>	<b>Christopher Edward Truman</b> University of Bristol, UK	Measurements of residual stress in an international benchmark specimen – NeT TG8	<i>S3-3 141</i>		
15.30	<b>Balder Ortner</b> Montanuniversität Leoben, Austria	Diffraction Stress Measurement in Single Crystals	<i>S1-4 126</i>	<b>Alexis Ratier</b> SNCF Voyageurs, France	Railway Axle: Residual stresses measurements by three complementary methods	<i>S3-4 141</i>		
15.50	<b>Sabine C. Bodner</b> Montanuniversität Leoben, Austria	X-ray micro- and nano-diffraction analysis of residual stresses in the compound layer and diffusion zone of a gas-nitrided steel	<i>S1-5 127</i>	<b>Min Jae Baek</b> Korea institute of Materials Science	Residual Stress-based hole expansion process optimization and investigation of residual stress effect on fatigue crack growth	<i>S3-5 142</i>		
16.10	Break, refreshment							
	<b>Session 02 – Diffraction Methods 2</b>			<i>Andrzej Baczmanski</i>		<b>Session 04 – Mechanical Relaxation Methods 2</b>		<i>JP Nobre</i>
16.40	<b>Sylwia Nowak</b> AGH - University of Krakow, Poland	Role of the second order plastic incompatibility stresses in deformed titanium	<i>S2-1 129</i>	<b>Omar Mohamed</b> University of Surrey, UK	The use of Plasma Focused Ion Beam Digital Image Correlation to Investigate Micro-Residual Stresses in Fusion Reactor Dissimilar Joints	<i>S4-1 143</i>		
17:00	<b>Kenji Suzuki</b> Niigata University, Japan	Residual stress measurement of welded pipe with small bore using double exposure method	<i>S2-2 131</i>	<b>Karsten Wandtke</b> BAM, Germany	Residual stress analysis in an additive manufactured high-strength steel component using the contour method	<i>S4-2 144</i>		
17:20	<b>Joana Rebelo Kornmeier</b> Technical University of Munich, Germany	In-situ diffraction analysis of elastic-plastic behaviour of DP1000	<i>S2-3 132</i>	<b>Jonas Holmberg</b> RISE Research Institutes of Sweden	Sensitivity analysis of the contour method: influence from measuring and processing of the deformation data	<i>S4-3 144</i>		
17:40	<b>Ogün Baris Tapar</b> Leibniz Institute for Materials Engineering-IWT, Germany	Investigation of the Effect of Laser Shock Peening on the Fatigue Resistance of Riveted Lap Joints of Aerospace Grade 7xxx Series Aluminum	<i>S2-4 134</i>	<b>Alessio Benincasa</b> SINT Technology Srl, Florence, Italy	An algorithm for correcting the zero-depth error in hole-drilling measurements	<i>S4-4 145</i>		
18:00	<b>David Canelo-Yubero</b> Helmholtz-Zentrum Hereon, Germany	Synchrotron diffraction: a suitable tool for residual stress analysis in a Ni-based welded plate	<i>S2-5 135</i>	<b>Neil Hollyhoke</b> The Open University, UK	Mapping residual stresses in non-conductive materials using the contour method	<i>S4-5 145</i>		
18:20	<b>Wenli Song</b> Institute of High Energy Physics, Chinese Academy of Sciences, Beijing	Probing deformation behavior of a refractory high-entropy alloy using in situ neutron diffraction	<i>S2-6 136</i>	<b>Robert Grant Reid</b> University of the Witwatersrand, South Africa	The use of non-standard triaxial strain gauge rosettes for incremental hole-drilling in composite laminates	<i>S4-6 146</i>		
19.00	Welcome drink, refreshment							
<i>Color</i>	<b>Plenary lecture</b>	<b>Keynote Lectures</b>	<b>Presentations of exhibitors</b>	<b>Parallel Sessions</b>	<b>Parallel Sessions</b>	<b>Breaks</b>	<b>Chairs</b>	<b>Code - page</b>

## Wednesday, June 5

9.00	<b>Christoph Genzel</b> Helmholtz-Zentrum Berlin, Germany	X-ray residual stress analysis through the ages: From laboratory to synchrotron - and back?			<i>Giovanni Bruno</i>			
9.50	<b>Can Yildirim</b> ESRF, France	Dark Field X-ray Microscopy: A New Way of 4D Mapping of Strain and Orientation of Embedded Crystalline Structures			<i>PL3 – 99</i>			
10.20	Break, refreshment							
10.50	<b>Mohamed Fares Slim</b> Arts et Métiers Institute of Technology, Aix-en-Provence, France	Multi-scale mechanical behaviour of carburized austenitic stainless steels cladding for the new generation of sodium-cooled fast nuclear reactors			<i>KL4 – 105</i>			
11.20	<b>Benedikt Schrode</b> Anton Paar GmbH, Austria	Anton Paar – X-ray analysis solutions			<i>Alexander Evans</i>			
11.40	<b>Kurt Erlacher</b> Bruker AXS, Germany	Residual stress analysis with a new table top multipurpose XRD instrument (D6 PHASER)			<i>EL2 - 230</i>			
12.00	<b>Tom Faske</b> Rigaku Europe SE, Germany	Innovations in Residual Stress Measurement: Rigaku's Cutting-Edge X-ray Solutions			<i>EL4 – 230</i>			
12.20	<b>Jörg Böhler</b> Pulstec, Sentenso, Germany	Demonstration of Residual Stress Measurements by X-Ray Diffraction with the Cos-Alpha Method			-			
12.40	Lunch							
	<b>Room 1</b>			<i>Arne Kromm</i>		<b>Room 2</b>		
14.00	<b>Robin C Laurence</b> University of Manchester, UK	The Reproducibility of Residual Stress in Additively Manufactured Benchmark Samples as Measured by Neutron and Synchrotron X-ray Diffraction	<i>KL5</i> <i>106</i>	<b>Miroslav Neslušan</b> University of Zilina, Slovak Republic	Barkhausen noise in term of stress state	<i>KL6</i> <i>108</i>		
14.30	<b>Session 05 – Additive Manufacturing</b>			<i>Alexander Liehr</i>				
14.30	<b>Jakob Schröder</b> Bundesanstalt für Materialforschung und -prüfung BAM, Berlin, Germany	Diffraction and single-crystal elastic constants of laser powder bed fused Inconel 718	<i>S5-1</i> <i>148</i>	<b>Eric Wasniewski</b> CETIM, France	Stress assessment from incremental permeability measurements	<i>S6-1</i> <i>154</i>		
14.50	<b>Julien Witte</b> BAM, Berlin, Germany	Optimizing residual stresses in additively manufactured high-performance materials through ultrasonic-assisted milling.	<i>S5-2</i> <i>150</i>	<b>Thomas Noel Nitschke-Pagel</b> Technische Universität Braunschweig, Germany	Characterization of the solidification state of welded cold-formed steels using X-ray diffraction	<i>S6-2</i> <i>155</i>		
15.10	<b>Marc-André Nielsen</b> Helmholtz-Zentrum Hereon, Germany	Influence of component geometry on residual stress in additively manufactured aluminium structures	<i>S5-3</i> <i>151</i>	<b>Pavel Romanov</b> Linköping University, Sweden	Residual stresses in steel bars quenched with water impinging jet quenching technique	<i>S6-3</i> <i>156</i>		
15.30	<b>Antonio Carlos de F. Silveira</b> Leibniz-Institute fuer Werkstofforientierte Technologien-IWT, Germany	Microstructure and stress evolution during laser directed energy deposition of tool steel by in-situ synchrotron X-ray diffraction	<i>S5-4</i> <i>152</i>	<b>Hyeonil Park</b> Korea Institute of Materials Science, Republic of South Korea	Stress-concentration behavior in several deformation modes susceptible to hydrogen embrittlement	<i>S6-4</i> <i>157</i>		
15.50	<b>Alexander Evans</b> BAM, Berlin, Germany	Diffraction based residual stress analysis for laser powder bed fusion alloys	<i>S5-5</i> <i>152</i>	<b>Thomas Pogrietz</b> Montanuniversität Leoben, Austria	Time- and Depth-Resolved Characterization of Hydrogen Diffusion into Duplex Steel: Lattice Swelling and Stress Evolution	<i>S6-5</i> <i>158</i>		
16.10	<b>Nicole Offner</b> Montanuniversität Leoben, Austria	Hydrogen Interaction with Additively Manufactured Steels Characterized by in-situ Synchrotron X-ray Diffraction	<i>S5-6</i> <i>153</i>	<b>Jiří Malec</b> PCS, Czech Republic	The contribution to complex evaluation of surface integrity using instrumental methods	<i>S6-6</i> <i>159</i>		
16.30	<b>Poster Session, refreshment</b>							
18:30								
<i>Color</i>	<b>Plenary lecture</b>	<b>Keynote Lectures</b>	<b>Presentations of exhibitors</b>	<b>Parallel Sessions</b>	<b>Parallel Sessions</b>	<b>Breaks</b>	<b>Chairs</b>	<b>Code - page</b>

## Thursday, June 6

9.00	<b>David Rafaja</b> TU Bergakademie Freiberg, Germany	Interplay between the residual stress and microstructure features			<i>Marc Seefeldt</i> <i>PL4 – 100</i>
9.50	<b>Koichi Akita</b> Tokyo City University, Japan	Simultaneous improvement of fatigue strength and biocompatibility of Ti-6Al-4V by low-energy laser peening			<i>KL7 – 109</i>
10.20	Break, refreshment				
10.50	<b>Michael Meindlhuber</b> Montanuniversität Leoben, Austria	Evolution of stress fields during crack growth and arrest in micro-cantilevers during in situ bending assessed by cross-sectional X-ray nanodiffraction			<i>KL8 – 110</i>
11.20	<b>Andrzej Wojtas</b> , Proto XRD	Residual Stress Measurement on a pitch circle of a gear tooth flank			<i>Jakob Schröder</i> <i>EL5 – 231</i>
11.40	<b>Mikko Palosaari</b> , Stresstech Oy, Finland	Stresstech solutions in X-ray diffraction, Barkhausen noise analysis and in ESPI hole drilling			<i>EL6 – 231</i>
12.00	<b>Ed Kingston</b> , VEQTER Ltd, UK	Novel residual stress measurement applications			<i>EL7 – 231</i>
12.20	<b>Martin Čalkovský</b> , Thermofisher Scientific, Czech Republic	Threading dislocation's strain fields visualized and classified in Scanning Electron Microscope (SEM)			<i>EL8 – 232</i>
12.40	Lunch				
	<b>Room 1</b>		<i>Michael Meindlhuber</i>	<b>Room 2</b>	
14.00	<b>Michael Burtscher</b> University of Manchester, UK	Micro- and Nanomechanical in-situ investigations of distinct interfaces	<i>KL9</i> <i>111</i>	<b>Thomas Noel Nitschke-Pagel</b> Techn. Universität Braunschweig, Germany	Residual stresses in cold-formed welded high strength steels <i>KL10</i> <i>113</i>
14.30	<b>Session 07 – Electron Microscopy, DIC, diffraction</b>			<b>Session 09 – Welding, Fatigue and Fracture 1</b>	
14.30	<b>Akshay Mundayadan Chandroth</b> KU Leuven, Belgium	Microscale residual stress distribution induced by abrasive wheel cutting of Ti-6Al-4V	<i>S7-1</i> <i>160</i>	<b>Yoshio Mizuta</b> Osaka University, Japan	Improvement of surface residual stress in thin weld metal materials by low-energy short-pulse laser peening <i>S9-1</i> <i>172</i>
14.50	<b>Jaromír Kopeček</b> Institute of Physics of the CAS, Czech Rep.	Microstructure and deformation state in rotary swaged copper	<i>S7-2</i> <i>161</i>	<b>Jani Tapani Riski</b> LUT University, Finland	Effect of HFMI treatment on resulting weld toe geometry and residual stresses <i>S9-2</i> <i>173</i>
15.10	<b>Anna Garambois</b> ONERA, France	Experimental study and modelling of the effect of SMAT treatment on nickel-based superalloys	<i>S7-3</i> <i>161</i>	<b>Konrad Mäde</b> Linköping University, Sweden	Combination of Synchrotron EDXRD and dilatometry to determine stress development in structural steels as a result of laser beam welding <i>S9-3</i> <i>174</i>
15.30	<b>Jong-Hwa Hong</b> Korea Institute of Materials Science (KIMS), Republic of South Korea	A Numerical Study on the Effect of Internal Residual Stress induced by Surface Severe Plastic Deformation Process on Mechanical Behavior	<i>S7-4</i> <i>163</i>	<b>Yunji Cho</b> Korea Institute of Materials Science	Analysis of the effect of residual stress formed by surface treatment process on the mechanical properties of S45C welded joints. <i>S9-4</i> <i>176</i>
15.50	<b>Adam Cretton</b> DTU France	Multiscale microstructure and strain characterisation in aluminium using Dark-Field X-ray microscopy	<i>S7-5</i> <i>164</i>	<b>Donato Gallitelli</b> SONATS - Europe Technologies, France	Assessment of the Ultrasonic Impact Treatment (UIT) for improving lifetime of in-service metallic welded structures <i>S9-5</i> <i>176</i>
16.10	Break, refreshment				
	<b>Session 08 – Ni-based and Light Metals</b>		<i>Karen Pantleon</i>	<b>Session 10 – Welding, Fatigue and Fracture 2</b>	
16.40	<b>Julien Teixeira</b> Institut Jean Lamour, France	Formation of residual stresses during quenching of Ti17 and Ti-6Al-4V alloys: influence of phase transformations	<i>S8-1</i> <i>165</i>	<b>Martin Huebner</b> BAM, Germany	Influence of the weld geometry on the residual stress reduction using low transformation temperature welding consumables <i>S10-1</i> <i>178</i>
17.00	<b>Florian Lang</b> Karlsruhe Institute of Technology (KIT), Germany	IN718 Cold Gas Repair Spray of Large Cavities – Influence of Different Geometries on Residual Stress Distribution	<i>S8-2</i> <i>166</i>	<b>Masaru Ogawa</b> Kogakuin University, Japan	Non-destructive estimation of three-dimensional residual stresses in spot-welded joints using X-ray diffraction and eigenstrain theory <i>S10-2</i> <i>179</i>
17.20	<b>Dong Jun Lee</b> Korea Institute of Materials Science (KIMS), Republic of South Korea	Microstructure and mechanical properties of Ni-based powder metallurgy superalloy treated by surface modification processes	<i>S8-3</i> <i>168</i>	<b>Levin Reichel</b> BAM, Germany	Residual stress formation during repeated gouging and repair welding cycles of high-strength steels <i>S10-3</i> <i>181</i>
17.40	<b>Dingge Fan</b> Harbin Institute of Technology, China	Residual stress and precipitation behaviour during heat treatment of FGH96 alloy	<i>S8-4</i> <i>168</i>	<b>Peter Dewald</b> RWTH Aachen University, Germany	Investigation of residual stresses in hole filling repair welds by tensile testing and digital image correlation <i>S10-4</i> <i>181</i>
18.00	<b>Jiří Čapek</b> Czech Technical University in Prague, Czech Republic	X-ray diffraction analysis of additively manufactured AlSi10Mg alloy	<i>S8-5</i> <i>169</i>	<b>Enrico Salvati</b> University of Udine, Italy	Residual Stress Evaluation in Laser Welded Plates: Wave-like vs. Linear <i>S10-5</i> <i>183</i>
18.20	<b>Przemysław Andrzej Kot</b> CoE Nomaten, NCBJ, Poland	Plastic deformation study for magnesium AZ31 using neutron diffraction during various directions of loading	<i>S8-6</i> <i>170</i>	<b>Michael Georg Zuern</b> Karlsruhe Institute of Technology (KIT) Germany	Evaluability of X-ray diffraction stress analyses for highly deformed high manganese steels <i>S10-6</i> <i>184</i>
20.15 22:15	<b>Boat trip with raut (on Vltava river)</b>				

## Friday, June 7

	Room 1	Jens Gibmeier	Room 2	Enrico Salvati			
9.30	<b>Andrzej Baczmanski</b> AGH of Krakow, Poland University	X-ray stress factors in diffraction stress analysis used for interior and surface of the sample	<i>KL11</i> <i>114</i>	<b>Yuji Sano</b> Osaka University, Japan	Mechanism of surface residual stress generation by laser peening and influence of coefficient of thermal expansion	<i>KL13</i> <i>116</i>	
10.00	<b>Manuela Klaus</b> Helmholtz-Zentrum für Materialien und Energie, Berlin, Germany	Energy-dispersive X-ray stress analysis in presence of residual stress-, composition- and grain interaction depth gradients	<i>KL12</i> <i>115</i>	<b>Bruno Leveil</b> ENSTA Bretagne, IRDL—UMR CNRS, Brest, France	Experimental study of the variation of x-ray elastic constants with plastic deformation	<i>KL14</i> <i>118</i>	
10.30	Break, refreshments						
10.50	<b>Session 11 – Microelectronics, Thin Films and Coating</b>	Christoph Genzel	<b>Session 12 – Neutrons</b>	Petr Lukáš			
10.50.	<b>Tobias Ziegelwanger</b> Montanuniversität Leoben, Austria	Thermomechanical fatigue of thin Cu films at high strain rates characterized by 20 kHz X-ray diffraction	<i>KL15</i> <i>119</i>	<b>Guilherme Abreu Faria</b> Helmholtz-Zentrum hereon, Germany	Between neutrons and X-rays, an overview of the high energy white beam beamline P61A @ PETRA III	<i>KL16</i> <i>121</i>	
11.20	<b>Kevin Kutlesa</b> Montanuniversität Leoben, Austria	Nanoscale gradients of residual stresses and microstructure in performance-critical regions of hard ceramic thin films	<i>S11-1</i> <i>186</i>	<b>Xiaolong Liu</b> China Institute of Atomic Energy, China	Introduction to the Engineering and Scientific Stress Diffractometer at China Advanced Research Reactor and its applications	<i>S12-1</i> <i>193</i>	
11.40	<b>Jens Gibmeier</b> Karlsruhe Institute of Technology, Germany	Residual stress in cold gas sprayed Titanium coatings – role of substrate material and process parameters	<i>S11-2</i> <i>187</i>	<b>Arnold Paecklar</b> Institut Laue-Langevin (ILL), Grenoble, France	Highlighting the Capabilities of Neutron Diffraction for Residual Stress Determination in Industrial Relevant Aluminium Cast Components	<i>S12-2</i> <i>193</i>	
12.00	<b>Erik Walz</b> Technical University of Munich Research Neutron Source Heinz Maier-Leibnitz, Germany	Macroscopic and microscopic residual stresses in nickel-aluminum bronze matrix composite surface deposits manufactured via laser melt injection	<i>S11-3</i> <i>189</i>	<b>Gergely Nemeth</b> Nuclear Physics Institute of CAS, Rez, Czech Republic	Study of residual stresses on the HK4-strain scanner instrument	<i>S12-3</i> <i>195</i>	
12.20	<b>Laurent Barrallier</b> Arts et Métiers Institute of Technology, Aix-en-Provence, France	Residual stress field in CIGS photovoltaic solar cell	<i>S11-4</i> <i>190</i>	<b>Thilo Pirling</b> Institut Laue-Langevin (ILL), Grenoble, France	The accuracy of neutron diffraction stress determination	<i>S12-4</i> <i>196</i>	
12.40	<b>Lucas Rousseau</b> University of Lyon, France	Subsurface characterization of femtosecond-laser peened aluminium	<i>S11-5</i> <i>191</i>	<b>Masayoshi Kumagai</b> Tokyo City University, Japan	Neutron diffraction line profile analysis on quenched medium carbon steel with tempering at different temperatures	<i>S12-5</i> <i>197</i>	
13.10	Poster prizes, closing						
13.30	Lunch						
<i>Color</i>	Chairs	Keynote Lectures		Parallel Sessions	Parallel Sessions	Breaks	Code - page