Monday, 5th October, Preliminary Agenda

9:00	**Registration, Breakfast and Get-Together**		
9:20	**Opening**		
9:40	Greeting under the patronage of the Federal Government **Plenary Talk** Prof. Dr.-Ing. Christoph Broeckmann (RWTH Aachen)		
10:40	**Break** from 10:40 to 11:00		
11:00	**Talk** Dr.-Ing. Sven Donisi (Rosswag GmbH) **Plenary Talk** Prof. Dr. Andreas Pautz (Paul Scherrer Institut)		
12:20	**Lunch** from 12:20 to 13:20		
13:20	NUCLEAR SAFETY & FUSION	"Evaluation of UT-Data by use of adapted AI Algorithms in Nuclear" by J. Schors (Nuclear Power Plant Leibstadt)	"In-service welding on hydrogen pipelines - a brief summary of the results of the "H2SuD" project" by M. Rhode (BAM)
13:40		"Validation of engineering methods based on Fatigue Damage Parameters FDPs for Multiaxial Fatigue Assessment of Power Plant Components" by J. Rudolph (Framatome)	"Probabilistic Fatigue Crack Growth Assessment of Hydrogen Pipelines" by E. Hosseini (Empa, Switzerland)
14:00		"Failure assessment of nuclear power plant components in severe accident scenarios using finite element simulations" by C. Bläsius (GRS)	"The role of oxygen in mitigating hydrogen embrittlement in pipeline steels" by M. Cauwels (Ghent University)
14:20		"Durability of residual stresses and microstructure evolution in cavitation-peened Alloy182 under simulated nuclear service conditions" by D. Annesha (PSI)	"Influence of Hydrogen and Hydrogen Containing Gas Mixtures on the Mechanical Properties of AISI 321 at Room and Elevated Temperatures" by P. Dasari (MPA Stuttgart)
14:40		**Break** from 14:40 to 15:00	
15:00		"Can thermal stratifications cause stress corrosion cracking?" by S. Faust (GRS)	"Towards realistic diffusion coefficients for predictive modelling of hydrogen-assisted cold cracking of welded joints" by D. Czeskleba et. al (BAM)
15:20		"Specimen and component testing of nuclear pipe material with regard to fatigue issues" by N. Grözinger (MPA Stuttgart)	„Atomistic Insights into Hydrogen Behavior in Fe–Cr–Ni Alloys: Diffusion, Segregation, and Phase Evolution" by S. Starikov (Ruhr-Universität)
15:40		"EPRI EAF Component Test NDE Qualification and Flaw Sizing" by T. Damiani (EPRI)	"Hydrogen Effects on Strain-Induced Martensitic Transformation and Fatigue Crack Development in Metastable Austenitic Stainless Steels" by M. Herzig (MPA Stuttgart)
16:00		**Break** from 16:00 to 16:20	
16:20		"Survey on the the R&D project TEAR: Investigations on High Cycle Fatigue induced by swirl penetration" by J. Rudolph (Framatome)	"Thermomechanical Fatigue Behavior of Nickel Base Alloys under the Influence of Hydrogen" by M. Schlesinger (IWM Freiburg)
16:40		"Additive Manufacturing of High Temperature Heat Pipes for Micro Modular Reactors" by S. Biswas (IKE, University of Stuttgart)	"Effect of Hydrogen and Temperature on the LCF Behavior of Metallic Materials 2.4663 and 2.4795" by S. Schönborn (Fraunhofer LBF)
17:00		"On the Applicability of the Master Curve Method for Ductile Cast Iron" by M. Holzwarth (MPA Stuttgart)	"Comparison of External and Internal Hydrogen Effects on the Mechanical Properties of Alloy 617 and 17-4 PH" by S. Bauder (MPA Stuttgart)
17:20	**Get-Together – Evening Event – Dinner – Carl v. Bach Medal**		

Tuesday, 6th October, Preliminary Agenda

9:00	**Plenary Talk** Prof. Dr.-Ing. Matthias Oechsner (TU Darmstadt) **Plenary Talk** Prof. Dr.-Ing. Tilmann Beck (RPTU Kaiserslautern-Landau)		
10:20	**Break** from 10:20 to 10:40		
10:40	**Plenary Talk** Dr.-Ing. Kai Karhausen (Speira GmbH) **Plenary Talk** Dr.-Ing. Sebastian Piegert (Siemens Energy AG)		
12:00	**Lunch** from 12:00 to 13:00		
13:00	HYDROGEN	"Influence of Hydrogen on the Fatigue Lifetime of Three Cast Iron Alloys with Different Microstructures" by M. Metzger (IWM Freiburg)	An introduction into iWeld - Overview by A. Schumm (EDF)
13:20		"Fatigue testing in forming gas as a substitute for pure hydrogen gas" by N. Ensminger (MPA Stuttgart)	"iWeld Manufacturing" by G. Klenk (MPA)
13:40		"Modeling low cycle fatigue life of alloy 718 in a hydrogen environment" by F. Schweizer (IWM Freiburg)	"iWeld Simulation" by X. Chengdan (Transvalor)
14:00		**Break** from 14:00 to 14:20	
14:20		„Mobile High Pressure Hydrogen Storage System for Underfloor Installation" by M. Kagay (Robert Bosch GmbH)	"AI weld model and CIVA" by. C. Reboud (CEA)
14:40		"Hydrogen-Induced Fracture Transition in Resistance Spot Welded 1.8 GPa Hot-Stamped Steel" by J. Jo (Dong-Eui University)	"Complex tensor determination" by M. Kalowski (University of Southampton)
15:00		"Effect of Microstructure on Hydrogen Diffusion Behavior in Selective Laser Melted Ti-6Al-4V" by G. Linto (Chemnitz University of Technology)	"Imaging with uncertain microstructure" by M. Kalowski (University of Southampton) & N. Leymarie (CEA)
15:20		**Break** from 15:20 to 15:40	
15:40	AM SOLID STATE	"Heat Treatability of Wire-Based Friction Stir Additively Manufactured Age Hardening Aluminium Alloys" by O. Kessler (Rostock University)	"Weld inversion" by M. Kalowski (University of Southampton)
16:00		"Determination of Orientation-Dependent Mechanical Properties of Additively Manufactured Aluminum using Friction Stir Welding" by F. Weber (RWTH Aachen)	"Adaptive imaging" by A. Boukham (CEA)
16:20		"Repair of aluminium parts by AM: The use of Multi-Layer Friction Surfacing" by G. Snoeck (University of Liège)	"Real time imaging with material information" by V. Sameitis (Kaunas University of Technology)
16:40	**MPA "LÄB" Tour & Live Ignition of AM Rocketengine** (from 16:40 to 18:00)		
18:00	**Dinner in Stuttgart City** (from 18:00, open end)		

iWELD intelligent weld inspection

Wednesday, 7th October, Preliminary Agenda

09:00	FATIGUE & FAILURE	"China Speed" vs. "made in Germany" or pragmatic vs. perfect – a discussion of different fatigue strength concepts for innovative materials for e-mobility, med-tec or additive manufacturing" by S. Einbock (DHBW Stuttgart)	"Examination of surface breaking cracks in concrete with ultrasound" by U. Rabe (Fraunhofer IZFP)	NON DESTRUCTIVE TESTING
09:20		"A General Signal Analysis Method for Multiaxial Fatigue Life Prediction Under Variable and Superimposed Vibrational Loads" by A. Schmidt (Robert Bosch GmbH)	"Ultrasonic Imaging of Defects in a Thick-Walled Impeller Test Block Using Total Focusing Method and Plane Wave Imaging" by P. K. Chinta (Waygate Technologies, Baker Hughes Digital Solutions GmbH)	
09:40		"Application of the Averaged Strain Energy Density Approach to Variable Amplitude Rotating Bending Fatigue of S690 Steel" by K. Hectors (Ghent University)	"Challenges and Solutions in the Design and Construction of Automated Non-Destructive Inspection Stations for Aerospace Applications" by J. Walz (RohTech-DST GmbH)	
10:00		**Break** from 10:00 to 10:20		
10:20		"Application of GISSMO Damage Model in Welding Simulation to Predict Failure of Welded Joints" by C. Schröder (TIME)	"Enhancing NDT Training and Qualification with Simulation Tools" by P. Benoit (EXTENDE)	
10:40		„Fatigue assessment of butt welded joints using the implicit stress gradient method" by J. Qi (Ghent University)	„An Approach to Robot-Based Ultrasonic Testing of Complex Geometries Using Array Probes" by T. Heckel (BAM)	
11:00		"Uses of Electron Channelling Contrast Imaging (ECCI) to Study Defects in Fatigue and Beyond" by R. Scales (Oxford University)	"Project UltrasonAIc – A human-centered AI approach to Ultrasonic Weld Testing" by T. Heckel (BAM)	
11:20		**Break** from 11:20 to 11:40		
11:40		"Resonance Fatigue Testing Machines for Structural Steel Fatigue Assessment" by F. Simeon (Uni Innsbruck)	"Pseudo-alloying of Fe-Ag via Laser Powder Bed Fusion for Permanent Implants" by L. Kaspersmeier (Paderborn University)	ADVANCED MANUFACTURING – MEDICAL
12:00		"Applicability of Plastic Runners in Model Tests of Hydraulic Machinery: Dynamic Strain Prediction" by J. Bareis (IHS, University of Stuttgart)	"Accelerating the Development of Medical Titanium Alloys via In Situ Alloying in LPBF: Insights from Ti-6Al-7Nb-Cu" by P. Steinmeier (Paderborn University)	
12:20		t.b.a. by Florian Mailänder (CADFEM Germany)	"Comparison of Multi-Material Manufacturing Methods for Rigid-Flexible Material Bonding in Medical Applications" by P. Szczygieł (Kielce University of Technology)	
12:40		**Lunch** from 12:40 to 13:40		
13:40	BIG DATA & AI METHODS	"Will Materials Test Themselves? AI, Autonomy, and the Future of Structural Integrity" by M. Braun (DLR)	"Practical challenges in determining the HCF load resistance of additively manufactured AlSi10Mg" by J. Rosenthal (OTH Amberg-Weiden)	ADVANCED MANUFACTURING – FATIGUE
14:00		"A Method for fast identification of material model parameters based on machine learning" by F. Bauer (fem Forschungsinstitut, Schwäbisch Gmünd)	"Evolution of the cellular structure in 316L stainless steel manufactured by laser powder bed fusion during High cycle fatigue" by J. Zhang (RWTH Aachen)	
14:20		"FE-Based Data Generation for Structural Integrity Verification with Neural Networks" by M. Posner (IMA, University of Stuttgart)	"High-Cycle Fatigue Properties of DED-Arc Manufactured Steel and Aluminum" by M. Köhler (TU Chemnitz)	
14:40		**Break** from 14:40 to 15:00		
15:00		"Hybrid modelling Methods for metal manufacturing processing" by H. Autenrieth (Robert Bosch GmbH)	"Electroslag Additive Manufacturing (ESAM) for the production of thick-section components" by A. Stevens (Oak Ridge National Laboratory)	ADVANCED MANUFACTURING – HT & ENERGY
15:20		"Integrated Quality Prediction of Resistance Spot Welding via 3D Indentation Big Data" by Y. Park (Dong-Eui University)	"Application of serial metal additive manufacturing at Siemens Energy" by P. Findeklee (Siemens Energy)	
15:40		"Causal Discovery of Signal Morphology Drivers in Steel Resistance Spot Welding: A High-Dimensional Data Analysis" by H. Schulz (TU Berlin)	"ModuMix – Modular and Function-Optimized Static Mixers Enabled by Additive Manufacturing (LPBF)" by P. Schwarz (Rosswag GmbH)	
16:00		"Agentic Industrial AI for Cross-Layer Automation: Enabling Process Development and Automation with Causal AI" by T. Freudenmann (EDI AG)	"Design of High Entropy Alloys through Laser Powder Bed Fusion using Commercial Powders" by A. H. Seidou (University of Liège)	
16:20		**Break** from 16:20 to 16:40		
16:40		"Real-Time Process Monitoring in Resistance Spot Welding via Physics-Informed Machine Learning" by J. Koal (TU Dresden)	"Electron beam powder bed fusion of a Mo-Si-B alloy: How modeling informs process design and microstructure analysis" by B. Wahlmann (FAU Erlangen-Nürnberg)	ADVANCED MANUFACTURING – PROCESS MODELLING
17:00		"Quality prediction using machine learning for consecutive spot welds of aluminium alloys EN AW-5182 and EN AW-6014" by R. Nagel (MPA Stuttgart)	"Generative Models for Efficient Monitoring and Simulation of LPBF Processes" by F. Ogoke (Carnegie Mellon University)	
17:20		"Damage Monitoring of Glass Fiber Reinforced Plastic (GFRP) Panels Using Classical Machine Learning Methods" by F. Hennig (TU Wildau)	"Influence of Melt Pool Geometry in Laser Powder Bed Fusion of 316L" by S. Sewalski (MPA Stuttgart)	