

Program



May 10-14 2015 | Conference Center

ICM 12 – KARLSRUHE

12th International Conference on
the Mechanical Behavior of Materials

SPONSORS



WELCOME!

Welcome to the ICM12 at Karlsruhe!

Following the long standing tradition dating back to the efforts of the late Professor Shuji Taira, who organized the first International Conference on Mechanical Behavior of Materials (ICM) in Kyoto, Japan in August 1971, we are more than pleased to welcome you to the 12th edition of the ICM in Karlsruhe, Germany.

This year, more than 400 papers will be presented from attendees from over 30 countries bringing together users, producers, engineers and scientists who have a common interest in the mechanical behavior of materials. Integrated approaches to design, manufacturing and mechanical reliability across length scale will be explored.

We wish you an exciting week with interesting talks, fruitful discussions and an enjoyable time at Karlsruhe.

Dietmar
Eifler

Martin
Heilmaier

Oliver
Kraft

Detlef
Löhe



Dietmar Eifler



Martin Heilmaier



Oliver Kraft



Detlef Löhe

SUNDAY 10, WELCOME RECEPTION 18:00 - 20:00

PLENARY TALKS

LOCATION: WEINBRENNER-SAAL

MONDAY 11, MORNING

- 8:45 WELCOME IN WEINBRENNER SAAL
- 9:00 WILLIAM A. CURTIN, EPFL (Switzerland)
X-Mechanics for Metal Plasticity
- 9:45 HARUYUKI INUI, Kyoto University (Japan)
Materials for Ultra High-Temperature Applications

TUESDAY 12, MORNING

- 9:00 HISAO MATSUNAGA, Kyushu University (Japan)
Tensile and Fatigue Behavior of Steels in High Pressure Hydrogen Gas Atmospheres
- 9:45 REINHARD PIPPAN, Erich-Schmid-Institut, Leoben (Austria)
Deformation, Fatigue, and Fracture of Ultrafine Grained and Nanocrystalline Materials

WEDNESDAY 13, MORNING

- 9:00 ANDREW HRYMAK, University of Western Ontario (Canada)
Modeling Long Fiber Distributions In Compression Molding
- 9:45 BOB AINSWORTH, The University of Manchester (UK)
The Treatment of Residual Stresses in Fracture Mechanics Calculations

WEDNESDAY 13, AFTERNOON

- 15:30 AKIHIKO KIMURA, Kyoto University (Japan)
Materials Innovation for Nuclear Energy - Super ODS Steels R&D
- 16:15 ROBERT O. RITCHIE, University of California, Berkeley (USA)
Damage Tolerance in Natural and Bioinspired Structural Materials

CONFERENCE DINNER

LOCATION: IFFEZHEIM

WEDNESDAY 13, EVENING

- 17:15 DEPARTURE OF THE SHUTTLE BUSES TO IFFEZHEIM
- 18:00 CONFERENCE DINNER
- 22:30 RETURN OF THE LAST BUSES TO KARLSRUHE



ICM12 TOPICS

COLOR SCHEME

A

Multiscale phenomena in plasticity

B

Residual Stresses

C

Cyclic deformation behavior, crack initiation & crack growth of metals

D

In-situ microscopy and diffraction

E

Size effects and small-scale mechanical behavior of materials

F

Advanced steels and steel composite materials

G

Fracture Mechanics

H

Materials for Fission and Fusion

I

High temperature materials

K

Polymer based composites

L

Lightweight alloys and structures

X

General Mechanical Behavior

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ICM¹²
Karlsruhe

POSTER PRESENTATIONS

ID	AUTHOR	TITLE
AP 1	MATSUMOTO, Ryosuke	Atomistic analyses of nucleation and propagation behavior of ridge shaped kink band in long-period-stacking-ordered phase
AP 2	URANAGASE, Masayuki	Quantitative evaluation of dislocation nucleation as thermal activation process via atomistic simulations
AP 3	BARANNIKOVA, Svetlana	The effect of hydrogen on the macroscopic strain localization of steels
AP 4	TSUJI, Naomchi	Adaptive boost molecular dynamics method for study of rare events in plastic deformation
AP 5	SHINYA, Ogata	Microtension behaviour of dual-phase steel subjected to pre-straining
AP 6	MATSUOKA, Ryo	Microtension behavior of hydrogen-containing metastable austenitic stainless steel
BP 1	OSTAPENKO, M.G.	The effect of residual stresses on the change of the B2 phase lattice parameter in the NiTi with Tantalum coating after pulsed electronbeam treatment
BP 2	MEISNER, L.L.	Structural phase states and residual stresses in the Ta/TiNi surface layers before and after high-current pulsed electron beam impact
BP 3	WEIDMANN, Peter	Laser assisted residual stress determination in ceramic coatings
BP 4	LEE, Min Ha	Residual stress evaluation of shot peened Ag-based contact materials via diffraction technique
CP 1	GAKAM, Herve	Determination of the Critical Resolved Shear Stress in a NiAl-Cr composite by Discrete Dislocation Dynamics
CP 2	CASALI, Ricardo A.	Resonant acoustic for nondestructive inspection of accumulated damage assessment in austenitic stainless steel subjected to fatigue tests in rotating bending
CP 4	OKAMOTO, Yuji	Fatigue properties of fine-grained AZ31 magnesium alloy
CP 5	MOMOE, Ryoichi	Influence of pre-strain on fatigue crack growth behavior in rolled AZ31 magnesium alloy
CP 6	MORITA, Shigeki	Anisotropy of cyclic deformation and fatigue properties in rolled AZ31 magnesium alloy
CP 7	ŠULÁK, Ivo	Dwell effects on low cycle fatigue behaviour of diffusion coated nickel base superalloy IN 713LC at temperature of 800°C

ID	AUTHOR	TITLE
CP 8	BENACHOUR, Mustapha	Fatigue crack initiation from notches and mean stress effect in 2024 T351 Al-alloy
CP 9	KUBENA, Ivo	Cyclic softening in the MA956 ODS steel
DP 1	LI, Xiaohu	Strain induced martensitic Transformation in Austempered Ductile Iron (ADI)
DP 2	YAN, Yabin	An in situ experimental method for evaluating the tensile property of single crystalline gold nanorod
EP 1	BONK, Simon	Ductility in cold-rolled ultrafine-grained (UFG) tungsten (W): Correlation between microstructure and mechanical properties
EP 2	RITTGEN, R.	Surface oxidation of metallic glass surfaces and its effect on nanotribology
EP 3	RATHMANN, Dominic	How to optimize the fatigue properties of bimodal microstructures of nanocrystalline (nc) and ultrafine grained (ufg) Nickel?
EP 4	GWAK, Eun-Ji	Mechanical response of nanoporous gold made from Au-Ag precursor alloys with different initial microstructure
EP 5	KANG, Na-Ri	Nanotubular ZnO for flexible gas sensor
EP 6	WOO, O Bae	Thickness-dependent tensile properties of PEDOT:PSS
EP 7	AHN, Seung-Min	Indentation Size Effect of Nanoporous Gold: Correlated by Unique Structure and its Size-Dependent Mechanical Behavior
EP 8	SABISCH, Julian E. C.	Investigation of mechanical anisotropy in Mg using Berkovich indentation
EP 9	SCHLICH, Franziska	Size- and phase-dependent mechanical properties of ultrathin silicon and Ge ₂ Sb ₂ Te ₅ films
EP 10	PEJCHAL, Vaclav	Fracture of brittle spheres in compression: testing microscopic fused quartz
EP 11	TAHAR, Sayah	Roughness behaviour of nanomaterials
EP 12	CHEN, Guang	Fabrication of Al-Cu Composite Reinforced with BN by Powder Liquid-Phase Forging
EP 13	VALDEZ, Lucy A.	Electronic properties and mechanical stability of ZnO in the bulk and nanowire structures under large uniaxial stresses

ID	AUTHOR	TITLE
EP14	BEDORF, Dennis	High temperature nanoindentation - Dynamic measurements for thin film analysis
EP 15	WANG, Xiaoyuan	First-principles study on ferroelectricity and its coupling behavior with mechanical deformation of ultrathin PbTiO ₃ nanotube
EP 16	MOHEB SHAH DIN, Abed	Improved elasticity of bilayer graphene cantilevers with interlayer shear and in-plane extension effects
EP 17	HOSSEINI-TOUDESHKY	Simulation of mechanical properties of nanotwin-strengthened metals
EP 18	SEIPP, Sebastian	Compression-shear behavior of a strongly textured Magnesium alloy AZ31 under different strain rates
FP 1	SRIBA, A.	Effect of filler metal on micro-structural, mechanical and corrosion behavior of austenitic stainless steel weldment 316L
GP 1	SPASKOVA, Elena M.	The experimental study of stress-strain states in stress concentrators with the use of the method of digital image correlation
GP 2	KIM, Jun-Yeong	Estimation of Fracture Toughness of Metallic Materials Using Instrumented Indentation Test
GP 3	TEMEROVA, Maria S.	The complex experimental studies of the mechanical properties of reinforcing elements
GP 4	TASHKINOV, Mikhail	Methods of Stochastic Mechanics for Characterisation of Microstructural Failure in Heterogeneous Materials
GP 5	SHI, YI NA	Shock loading direction effects on ejection mass and particle sizes of micro-jet from a grooved metal surface
HP 1	BENEDIKTOVITCH, Andrei	XRD examination of oxide dispersion strengthened steels irradiated by swift heavy ions
HP 2	UGLOV, Vladimir	Radiation stability of ZrSiN system under the Xe ions irradiation
HP 3	DE OLIVEIRA LEO, José R.	Creep and anelasticity of ferritic ODS steel MA956
HP 4	ŠTEFAN, Jan	Application of Automated Ball Indentation Innovative Technique on the Determination of Mechanical Properties of Nuclear Structural Materials
IP 1	KUTELIA, Elguja	Internal Friction and Shear Modulus Temperature Dependence of 9% Cr Ferritic Steel P92 in 25 -750°C Temperature Range
IP 2	HOULLE, Frederic	Atomistic Simulations of Dislocation-Interface Interactions in the γ/γ' Microstructure in Ni-base Superalloys

ID	AUTHOR	TITLE
KP 1	LOBANOV, Dmitrii S.	Deformation and fracture of aircraft fibrous polymer composites in external actuating factors and high temperature mechanical tests
KP 2	BERTRAM, Benjamin	Supervised Estimation of the Local Glass Fiber Content from 2D X-ray Imaging of Plate-like Parts made from Sheet Molding Compounds
KP 3	MATVEENKO, Valery P.	Numerical simulation for developing grounds in support of application of fiber optic sensors for monitoring of composite materials
KP 4	ARAKI, Kunihiro	Research of the Processing Parameters of Three-dimensional Printer and the Product
LP 1	SHUMPEI, Ota	Surface Nitriding of Titanium Using Atmospheric-controlled IH-FPP Treatment
LP 2	KIMIZUKA, Hajime	Ab-initio coarse-grained approach for modeling the two-dimensional packing structure of solute nanoclusters in Mg-based LPSO phases
XP 1	FENG, Zude	Dynamic Mechanical Properties of Cortical Bone Depend on Bone Mineral Content
XP 2	PARK, Sang-Youn	Modeling and observation of compressive behaviors of anisotropic aluminum cellular structures based on the Voronoi tessellation concept
XP 3	LEE, Mi Yeon	Variation of Mechanical Properties in the Pipe Bends Fabricated by High-frequency Induction Bending
XP 4	BOUKHALFA, Amirat	Effect of Ultra-violet radiation on the mechanical behavior of PMMA (polymethyl methacrylate)
XP 5	BBABOU, Hamid	Thermal ageing effect on mechanical behavior of polycarbonate
XP 6	MYUNG, Rak Choi	Effect of Strain-Rate on Tensile Properties of Nuclear Piping Materials at RT and 316oC
XP 7	VAN DER MEY, M. Michiel	Retained Austenite: Non Destructive Analysis by using X-Ray according to ASTM 975-03
XP 8	SOUIDI, Fatiha	Influence of the addition of cooked and crushed clay on the mechanical strength of a self-compacting concrete
XP 9	KHERBACHE, Souad	Study of concretes and mortars made with metallic fibers

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C1 D. EIFLER	E1 R. SCHWAIGER	A1 S. SANDFELD
11:00	<p>MAN, JIŘÍ Effect of chemical heterogeneity on the low-cycle-fatigue behavior of austenitic Cr-Ni stainless steels.</p>	<p>BUSHBY, ANDY Size dependent strength and its exploitation for length-scale engineered material systems.</p>	<p>BITZEK, ERIK Atomistic Simulations as Bridge between Experiments and Mesoscale Models: a Case-Study on Dislocation-Precipitate Interactions in Ni-base Superalloys.</p>
11:15			
11:30	<p>GIERTLER, ALEXANDER The distribution of local plastic deformation during VHCF loading of duplex stainless steel and martensitic steel.</p>	<p>HUSSER, EDGAR Three- dimensional modeling of size effects in micromechanical testing.</p>	<p>OGATA, SHIGENOBU Accelerated molecular dynamics study of grain boundary motion and dislocation nucleation from grain boundary.</p>
11:45	<p>DÖNGES, B. Fatigue mechanisms of an austenitic-ferritic duplex stainless steel at loading conditions close to conventional fatigue limit.</p>	<p>MALYAR, NATALIYA Dislocation grain boundary interaction in bi-crystalline micro pillars studied by in situ SEM and in situ μLaue diffraction.</p>	<p>UMENO, YOSHITAKA Ab initio-based atomistic model simulation of deformation and fracture in SiC power device.</p>
12:00	<p>MÜCHER, MARIO Material Development for Precision Steel Tubes for Stabilizer Bars.</p>	<p>WEYGAND, DANIEL Size effects and dislocation structure under torsion loading of single crystalline wires: a discrete dislocation dynamics study.</p>	<p>KONG, XIANGWEI Research on constitutive model of nickel-based superalloy and the numerical simulation during superalloy blade cold rolling process.</p>
12:15	<p>XI, ZHOU-JI Effect of Cementite Morphology on Fatigue Crack Propagation in Smooth Steel Specimen.</p>	<p>KOIWA, KOZO Investigation of crystal plasticity of single crystal copper by using micro scale torsion test.</p>	<p>WANG, Y. Development of Mechanism-Based and Microstructure-Sensitive Modeling Approach to Plastic Deformation in Multi-Phase Alloys.</p>
12:30	Poster Exhibition Lunch		

Forum 1	Forum 2	Konferenzraum 2.05	Konferenzraum 2.08
B1 B. SCHOLTES	G1 V. SILBERSCHMIDT	F1 W. BECK	K1 T. BÖHLKE
<p>VOORWALD, HERMAN JACOBUS CORNELIS Fatigue Strength of Anodized Al 7050-T7451.</p>	<p>BRATOV, VLADIMIR Numerical Simulation of ZrO₂(Y₂O₃) Ceramic Plate Penetration by Cylindrical Plunger.</p>	<p>SUGIMOTO, KOHICHI Mechanical Properties of A 0.2%C–1.5%Si–5%Mn Trip-Alded Annealed martensitic Steels.</p>	<p>ROBERT, GILLES Integrative simulation of short glass fibers reinforced polyamides: methodology followed to identify polymer matrix constitutive models on a wide range of solicitations, temperature, moisture and strain rate.</p>
<p>LIU, DONG The Influence of Residual Stress on the Failure Modes in a Thermal Barrier Coating System.</p>	<p>VOLKOV, GRIGORY Temporal Peculiarities of Fracture Caused by Threshold Pulses in Spallation.</p>	<p>TASAN, C. C. Nano-laminate TRIP-TWIP steel with dynamic strain partitioning and enhanced damage resistance.</p>	<p>LI, PEIFENG X-ray microtomography and finite element modelling of the failure mechanism in epoxy syntactic foams under compressive loads.</p>
<p>THIELEN, MATTHIAS Overloads on cracks: using Barkhausen microscope and SEM-based digital image correlation to evaluate mechanisms and effects on local (residual) stress fields.</p>	<p>MAYER, UWE Dynamic fracture of concrete: experimental and numerical studies on compact tension and L-specimen.</p>	<p>WEIDNER, ANJA Characterization of strain localizations during plastic deformation of TRIP/TWIP steels.</p>	<p>YUJI, TAKUBO Mechanical Properties of CFRTP Made from CF/PA Composite Yarn Sutured with PA Fiber.</p>
<p>TOUALBI, LOUISE Assessment of shot-peening on fatigue life prediction: microstructural effects.</p>	<p>MAYER, A. Multiscale model of the dynamic tensile fracture of solid and molten metals: molecular dynamics and continuum mechanics.</p>	<p>KANG, JEEHYUN Temperature evolution during tensile straining of high Mn twinning induced plasticity (TWIP) steels.</p>	<p>ZHPANSKA, OLESYA I Overall mechanical properties of composites with complex orientationally distributed microstructures.</p>
<p>STANOJEVIC, ALEKSANDAR Thermal Stability of Residual Stresses in Ti-6Al-4V components.</p>	<p>SCHÄFER, FLORIAN Stage I fatigue crack studies in order to validate the dislocation-free zone model of fracture for bulk materials.</p>	<p>SMAGA, MAREK Microstructure as well as mechanical and magnetic properties of Fe-based alloys with different contents of metastable austenites.</p>	<p>MATSUMOTO, KOKI Estimation of Dispersion Condition for PP/CNT Nano Composite by Using the New Segments with Extensional Flow for Co-Rotating Twin Screw Extruder.</p>
<p>FU, HONGWANG Development of residual stresses during cyclic loading in the very high cycle fatigue regime.</p>		<p>LEE, YONGMOON Microstructural Evolution of TRIP-aided Medium Mn Steel during Warm Deformation.</p>	<p>BAYRAK, OSMAN Characterisation of graphene-reinforced nanocomposites: optical-microscopy analysis of spatial non-uniformity.</p>

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C2 J. MAN	E2 A. BUSHBY	A2 E. BITZEK
14:00	<p>EBARA, RYUICHIRO The role of corrosion pit in corrosion fatigue crack initiation process of 12Cr stainless steel.</p>	<p>KIRCHLECHNER, C. Study of fatigue damage evolution in micron sized bending beams by in situ μLaue diffraction.</p>	<p>MORDEHAI, DAN Size-Dependent Mechanical Properties of Crystalline Nanoparticles.</p>
14:15	<p>SORICH, ANDREAS Characterization of the fatigue behavior of the metastable austenitic steel X6CrNiNb1810 from LCF to VHCF at 300°C.</p>		
14:30	<p>SKORUPSKI, ROBERT Influence of the surface morphology on the cyclic deformation behaviour of cryogenic turned metastable austenitic steel X6CrNiNb1810.</p>	<p>ZHANG, BIN A comparative study of fatigue properties of nano-scale Cu films on a flexible substrate.</p>	<p>LOUNIS, KAHINA Molecular dynamics study of the response of a nanowire containing defects to a uniaxial strain: case of nickel.</p>
14:45	<p>OMORI, TOSHIHIRO Hybrid surface treatment on austenitic stainless steel JIS SUS316 to improve fretting fatigue strength.</p>	<p>LUO, XUE-MEI Strain-dependent fatigue damage of nanocrystalline 930-nm-thick Au films.</p>	<p>TSURU, TOMOHIITO Tension/compression anisotropy in yield stress and Bauschinger effect in ultrafine-grained metals.</p>
15:00	<p>JANG, CHANGHEUI Low cycle fatigue behaviors of hot-bent 347 Stainless Steels in a simulated PWR water.</p>	<p>PAN, BO Influence of surface energy and dislocation pile-up on the size dependent strength of single-crystalline micro-pillars.</p>	<p>SCHUMACHER, PHILIPP Particle and solid solution strengthening. Part 1: experiments to control microstructure.</p>
15:15	<p>SONG, SEOK WEON Effect of Cold-Drawing on High-Cycle Fatigue Properties of Austenitic TWIP and Fully Pearlitic Steels.</p>	<p>SERNICOLA, GIORGIO In situ fracture tests of brittle materials at the microscale.</p>	<p>MOHLES, VOLKER Particle and solid solution strengthening. Part 2: modelling plastic behaviour.</p>
15:30	Coffee Break		

Forum 1	Forum 2	Konferenzraum 2.05	Konferenzraum 2.08
B2 J. WITHERS	G2 T. SEELIG	H1 A. MÖSLANG	F2 C.C. TASAN
<p>BERVEILLER, SOPHIE 3DXRD microscopy applied to study stress-induced martensitic transformation over one hundred individual grains in a shape-memory alloy polycrystal.</p>	<p>KRUZIC, JAMIE J. The Mechanics of Bridged Fatigue Cracks.</p>	<p>KURTZ, R. Effects of helium and irradiation damage on microstructure and mechanical properties of Fe base alloys for fusion applications.</p>	<p>BIERMANN, HORST Influence of temperature on fatigue-induced martensitic phase transformation in a metastable CrMnNi-steel.</p>
<p>CLAUSEN, BJØRN Measuring Residual Stresses in Monolithic Fuel Foils using Neutron Diffraction.</p>	<p>BENZ, CHRISTOPHER On the need to reconsider fatigue crack growth at negative stress ratios.</p>	<p>COENEN, J.W. New Material Developments for Applications in Fusion Reactors.</p>	<p>KOYAMA, MOTOMICHI Importance of ϵ-martensite on embrittlement and fatigue crack growth in Fe-Mn-based austenitic steels.</p>
<p>SUZUKI, SHIGERU Characterization of microscopic stress and strain evolved in polycrystalline Fe-Ga alloys using synchrotron radiation.</p>	<p>ÅMAN, MARI Effect of adjacent small defects on fatigue limit of steels.</p>	<p>QU, D. D. Functional graded tungsten/EUROFER coating systems for First Wall application.</p>	<p>YAMAMURA, YUUSUKE Importance of strain aging on fatigue limit in austenitic TWIP steels.</p>
<p>LIEHR, ALEXANDER Analysis and Assessment of Residual Stresses in Ground Steels and Ceramics.</p>	<p>BOUSFIA, MOHAMMED Comparison between three fatigue damage models and experimental results for composite materials submitted to spectrum loading.</p>	<p>QU, D. D. Functional graded tungsten/EUROFER coating systems for First Wall application.</p>	<p>KWON, SOON IL Influence of Si addition on deformation and fracture behaviors of aging treated cast Fe-Mn-Al-C lightweight steel.</p>
<p>LIEHR, ALEXANDER Analysis and Assessment of Residual Stresses in Ground Steels and Ceramics.</p>	<p>BOUSFIA, MOHAMMED Comparison between three fatigue damage models and experimental results for composite materials submitted to spectrum loading.</p>	<p>HOFFMANN, JAN CuCrZr alloys reinforced by Tungsten as structural Diver-tor applications for DEMO.</p>	<p>GUIHEUX, ROMAIN Effect of shot peening on microstructure of steels exhibiting a TRIP effect – Experimental and modeling approaches.</p>
<p>BUSLAPS, T. Assessing material properties with Neutron and Synchrotron radiation - Two complementary tools.</p>	<p>SILBERSCHMIDT, VADIM Experimental and numerical analysis of damage in random fibrous networks.</p>	<p>CAO, X. Lithium evaporation and redeposition experiments under high density linear plasma dumping.</p>	<p>MAJ, MICHAL Study of Lüders band propagation using IR thermo-graphy and DIC method in the wide range of strain rates.</p>

Coffee Break

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C3 M. ENDO	E3 D. KIENER	A3 & G3 T. SEELIG
16:00	<p>TAMURA, EIICHI Influence of characteristics of inclusion on rolling contact fatigue of bearing steel.</p>	<p>KAMIYA, SHOJI Smaller is not always stronger - inverse scale effect on metal-ceramics interface strength observed in LSI interconnect structures.</p>	<p>HWU, CHYANBIN A boundary finite element for anisotropic /piezoelectric materials containing multiple cracks.</p>
16:15	<p>KLEIN, MARCUS Evaluation of the fatigue behavior of damage tolerant TRIP-modified SAE 52100 steels using the short-time-procedures PHYBALCHT- and PHYBALLIT.</p>	<p>SCHWARK, TABEA Characterisation and Mechanical Properties of the Boundary Layers of Soft Magnetic Composites.</p>	<p>WANG, MAYAO Effect of micromorphology on crack growth in cortical bone tissue: X-FEM study.</p>
16:30	<p>BASAN, ROBERT The development of the indirect method for estimation of strain life fatigue parameters.</p>	<p>SCHEIDER, INGO Multiscale Modelling of Damage and Failure in a Biological Hierarchical Material.</p>	<p>NONN, AIDA Extended damage modelling for fracture control in modern line pipe steels.</p>
16:45	<p>UEYAMA, KENTA Fatigue Properties of DLC Coated Steel AISI1045 with Cr Diffusion Layer on the Substrate Surface by AIH-FPP Process.</p>	<p>BROGLY, MAURICE Surface properties of biopolymer films - Morphology, adhesion and friction.</p>	<p>SCHEUNEMANN, LISA Comparison of statistical descriptors for the construction of Statistically Similar RVEs.</p>
17:00	<p>NAGASHIMA, NOBUO Low cycle fatigue properties of the Fe-28Mn-5Cr-6Si-0.5NbC alloy.</p>	<p>LUO, ZHAO-PING Microstructure evolution of Cu/Au and Cu/Cr multilayers under cyclic sliding.</p>	<p>KAUPP, GERD Phase transitions' energies and activation energies from nothing else than indentation loading curves.</p>
17:15		<p>LI, XI Toward the modulation of interface barrier strength of Cu/Au nanolayered composites.</p>	<p>KACEM, MAHER EL HAJ Rate effects in finite Element modeling of transformation induced visco-plasticity.</p>

PODUSKA, JAN

Estimation of residual stress distribution in polyethylene pipes.

ACHINTHA, MITHILA

A combined experimental and numerical approach to the investigation of the influence of geometry on residual stresses in structural glass.

GUERALT, HUGUES

Benefits of Whole Powder Pattern Decomposition in the Determination of Residual Stress in Multiphase Materials.

SCHWEIZER, FRANK

Simulation-based optimization of the multiple incremental hole-drilling method for the simultaneous analysis of residual stresses and the measurement accuracy.

ULYANENKOV, ALEX

Analysis of residual stress gradients by X-ray diffraction with five-axis diffractometer.

SUN, TIANZHU

Comparison of the residual stress distributions in conventional and stationary shoulder friction stir welding.

MICHAUT, BERTRAND

Analyzing the ions radiation-induced defects and cavity swelling evolution in representative PWR internal austenitic steels.

GRAENING, TIM

Insights in microstructure of austenitic ODS steels.

SALEH, MICHAEL

Studies of high dpa ion beam irradiation effects on fcc AA-6061 and fcc-bcc duplex steel 2205: micro-mechanical modelling and nano-indentation examination of hardness variations.

FARROW, ADAM

Mechanical Behavior of Unalloyed Plutonium.

ANSPOKS, ANDRIS

Temperature dependent X-ray adsorption spectroscopy studies of Fe, Cr, and Ni local atomic structure for ferritic and austenitic ODS steels.

HASSANIFARD, SORAN

Progressive damage evaluation of Glass-Epoxy laminated composites under fatigue loading.

WIDANY, KAI-UWE

Experimental Investigation of Cold Forming of PC-Films and tensile bars using Optical Measurements.

MAROTZKE, CHRISTIAN

Failure processes of fiber reinforced composites under off-axis loading.

KREIKEMEIER, JANKO

Analysis and Simulation of the Fatigue Behaviour of CFRP Laminates.

BRABANDT, DANIEL

Inline metrology of carbon fiber preforms as an indicator of mechanical properties of consolidated CFRP parts.

HANGS, BENJAMIN

Characterization of complexly warped components made from locally reinforced UD-tape laminates.

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C4 T. BECK	E4 C. KIRCHLECHNER	A4 S. OGATA
11:00	KIKUCHI, SHOICHI Effects of nitriding temperature on the fatigue properties of Ti-6Al-4V alloy and in-situ observation of fatigue cracks in 4-points bending.	KIENER, DANIEL Probing thermally activated properties on a local scale.	SEGURADO, JAVIER Size effects in void growth from nano- to microscale.
11:15	ZHENHUA, ZHAO The influences of foreign object damage on the high cycle fatigue behavior of titanium alloy TC11.		
11:30	UEMATSU, YOSHIHIKO Effect of forging condition on fatigue behavior in AZ61 bulk nanostructured metal fabricated by multi-directional forging.	JIANG, JUNNAN Micro- and Macro-mechanical Testing of Grain Boundary Sliding (GBS).	WEYAND, DANIEL Dislocation interaction across grain boundaries and grain boundary yielding in a discrete dislocation dynamics framework.
11:45	STANZL-TSCHEGG, S.E. Variable-Amplitude of Aluminum Alloy 7075 in the VHCF Regime under Superimposed Loading Conditions.	KREUTER, THOMAS Nanoindentation at Room and Elevated Temperatures of Au/Cu-Multilayers.	HOCHRAINER, THOMAS Dislocation alignment tensors: their conservation laws and how to determine them from discrete dislocation configurations.
12:00		SCHRENKER, NADINE Mechanical behavior of the MAX-phase Nb ₂ AlC at the nanometer and micrometer scale by means of in situ indentation.	SCHMITT, SEVERIN Representation of Dislocation Interactions in a Dislocation Density Field Theory for Crystal Plasticity.
12:15		SCHACHTSIEK, ANKE Deformation behavior of copper thin films indented with patterned nanoindenter tips.	MONAVARI, MEHRAN Microstructural comparison of continuum models for dislocation plasticity.
12:30	Poster Exhibition Lunch		

Forum 1	Forum 2	Konferenzraum 2.05	Konferenzraum 2.08
B4 S. BERVEILLER	G4 J. KRUZIC	I1 G. EGGELER	K3 F. HENNING
INOUE, TATSUO Nitriding stress due to nitrogen diffusion and nitrides formation.	QIAN, XUDONG Cleavage Initiation Angle for High Strength Steels under Mixed-Mode Conditions.	LEE, JI-WON Development of a novel microstructure highly resistant to grain boundary damage during creep at 950°C in Alloy 617.	DAMMANN, CHRISTIAN RVE modeling of fibre-reinforced-polymer curing coupled to visco-elasticity.
SERIZAWA, HISASHI Influence of rotational speed in friction stir welding on heat generating behavior of MPS analysis.	RETTEMEIER, PHILIPP Experimental and numerical investigations on the crack growth stage of crane runway girders subjected to cyclic loading.	RETTIG, RALF Numerical multi-criterion optimization method for developing Ni-based superalloys: Development of a software tool and experimental validation.	ROESNER, ANDREAS Characterization and simulation of the time-dependent anisotropic deformation behaviour of continuously reinforced PA6 material.
LEE, HAN-SANG Failure analysis and optimization of welding process for 347H boiler tube of thermal power plant.	MELIANI, M. HADJ Crack Path in connection with the Two-Parameter Fracture Mechanics Approach on X52 steel pipe repairing.	VÖLKL, R. On the importance of the matrix for the creep properties of single crystal nickel.	ESTRIN, Y. Topological Interlocking Materials - Towards New Polymeric Hybrid Materials.
LIU, YANG Evaluation of the interfacial shear stress between FeCrAl coating and Zircaloy-4 fuel cladding.	GAVARDINAS, IOANNIS D. A modified Sih criterion for crack deflection in dipolar gradient elasticity.	GAO, SIWEN Influence of misfit stresses on dislocation glide in single crystal superalloys: A three-dimensional discrete dislocation dynamics study.	
ARAI, MASAYUKI Mechanical property and Residual Stress in Type304 stainless steel repaired partially by HVOF sprayed technique.	STIGH, ULF Cohesive laws for adhesive layers loaded in a state close to pure shear.	EGGELER, YOLITA M. TEM analysis of localized, planar deformation events which govern creep of single crystalline CoNi - superalloys with γ/γ' -microstructures.	KEHRER, L. Homogenisation of thermoelastic properties of short-fibre reinforced polymers and validation based on experimental characterisation.
RICKERT, THEO Comparative residual stress measurements on shot-peened spring steel by XRD and PRISM hole-drilling method.	MARTÍNEZ-PAÑEDA, E. The role of Geometrically Necessary Dislocations in the fracture process of metallic materials.		MRKONJIĆ, MARINA Phenomenological characterization and macromechanical modeling of anisotropic, non-linear behavior of sheet molding compounds (SMC).

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C5 S. STANZL-TSCHEGG	E5 G. SCHNEIDER	A5 J. SEGURADO
14:00	FISCHER, CARL Assessment of fatigue crack closure under in-phase, out-of-phase and phase-shift thermomechanical fatigue loading using a temperature dependent strip yield model.	MOLINA-ALDAREGUIA, J. Using high temperature micromechanical testing to inform microstructure based models: application to IN718.	MILLER RONALD E. The "Cauchystat": accurate control of the true stress in molecular dynamics simulations of martensitic phase transformations.
14:15	GUTH, STEFAN Dwell time effects on the Thermo-Mechanical Fatigue Behaviour of a Wrought Ni-base Alloy.		
14:30	ACKERMANN, STEPHANIE Biaxial fatigue behavior of a hot-pressed metastable austenitic steel.	LI, BO-SHIUAN Multi-scale Fracture Behaviour of Tungsten Alloys for Nuclear Fusion.	WAKEDA, MASATO Multiscale modeling of solute atom effect on critical resolved shear stress of Fe.
14:45	OBRTLK, KAREL High temperature low cycle fatigue behavior of cast superalloy Inconel 713LC coated with ZrO ₂ -SiO ₂ -Al ₂ O ₃ nanocrystalline thermal barrier coating.	SOLOGUBENKO, ALLA. S. Effect of composition and morphology on the mechanical and electrical behavior of Cu-Cr thin films.	LEHTINEN, ARTTU Multi-scale modeling of dislocation-precipitate interactions in Fe: from molecular dynamics to discrete dislocations.
15:00	WANG, EDWARD Optimal Design of Skirt Supporting Structure of Coke Drum for Thermal-Mechanical Cyclic Loading.	WEISS, BENJAMIN Thermomechanical influence grinding of electrodeposited chrome coated on a 300M substrate.	MONNET, GHIATH Detailed description of the screw dislocation motion in iron revealed by atomistic simulations.
15:15	DEL BIANCHI DA SILVA LIMA, LUIZ GUSTAVO Numerical and experimental analysis of the influence of process parameters on the damage of hot rolling rolls.	DE SAEVER, ALBAN Orthogonal machining of a Cu-1.8wt%Be-0.1wt%Co alloy : influence of the microstructure.	KOSITSKI, ROMAN Depinning-Controlled Plastic Deformation during Nanoindentation of BCC Iron Thin Films and Nanoparticles.
15:30	Coffee Break		

MINOR, ANDREW M.

In-situ TEM deformation of lightweight alloys and local strain measurements with diffraction imaging.

KÜBEL CHRISTIAN

CSL $\Sigma 3$ and $\Sigma 9$ activity as a deformation pathway in nanocrystalline Pd and AuPd.

TASAN, C. C.

In-situ characterization of martensite plasticity by high resolution microstructure and strain mapping.

WYSS, ANDREAS

Complex analyses of mechanical and electrical performance of metallic thin films on flexible substrates combined with in-situ Reflectance Anisotropy Spectroscopy.

**ZAEFFERER, S.,
ARCHIE, FADY**

Crystallographic and mechanical characterization of micro-bicrystal cantilevers.

PARSA, A.B.

On the Formation of Ledges and Grooves at γ/γ' Interfaces of Ni-base Single Crystal Superalloys.

MATUSZEWSKI, KAMIL

The influence of Re and Ru on the high-temperature creep strength and phase stability of Ni-based superalloys.

RONCERY, LAIS MUJICA

Super-Solvus Heat Treatments of Ni-Based Superalloys in a Hot Isostatic Press/Quench Unit.

ANXIN, MA.

Crystal plasticity modeling of porosity reduction in an as-cast Ni-base single crystal superalloy during hot isostatic pressing.

SPIECKER, ERDMANN

Characterization of $\langle 100 \rangle$ superdislocations and the γ/γ' interface by an advanced FIB lamella lift out technique.

EGGELER, GUNTHER

New Experimental Results on Atomistic and Microstructural Aspects of Creep of Ni-Base Single Crystal Superalloys (SXs).

HATAMI, M.K.

Homogenization of TRIP steel behaviour using a strain gradient plasticity model.

WONG, SU LEEN

A crystal plasticity model for advanced high strength steels including both TRIP and TWIP effect.

MADIVALA, MANJUNATHA

Multiscale Modelling of Damage and Fracture in High Mn TWIP Steels.

VAJRAGUPTA, NAPAT

Artificial microstructure model and its applications on plasticity and damage of the dual phase steels.

WELSCH, E.

Dislocation plasticity in precipitate hardened advanced austenitic lightweight high-Mn steels by coupled TEM and DDD simulations: Strengthening and dislocation-based mechanisms.

SCHNEIDER, DANIEL

Phase-field modeling of solid-solid phase transformations.

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C6 H. MATSUNAGA		L1 T. BÖHLKE
16:00	<p>TANABE, HIROTAKA Rolling Contact Fatigue Strength of Ceramic Coated Steel Laser-Quenched after Coating Process.</p>		<p>KONECNA, RADOMILA Mechanical properties and microstructure of Ti6Al4V fabricated by selective laser melting.</p>
16:15	<p>HOSHIDE, TOSHIHIKO Crack propagation behavior in titanium alloy under combined axial-torsional cyclic loading modes.</p>		<p>ANTEN, K. Formation of Twin Bands and Inhomogeneous Deformation in Mg- wrought Alloy AZ31 During Tension-Compression or Bending Loading.</p>
16:30	<p>RUTECKA, AGNIESZKA The AA2124/SiC metal matrix composites under fatigue, creep and monotonic loading conditions.</p>		<p>KLEIN, MARTIN Electrochemical-based characterization of the corrosion fatigue behavior of creep-resistant magnesium alloy DieMag422.</p>
16:45	<p>CHEN, CHUANYONG Fatigue crack growth be- havior of Ti-6Al-4V ELI alloy under constant amplitude loading with different single overloads.</p>		<p>SIDDIQUE, SHAFQAAT Very High Cycle Fatigue (VHCF) Assessment of Selective Laser Melted (SLMed) AISi12 Alloy.</p>
17:00	<p>MARNIER, GAEL Prestrain memory on subsequent cyclic behavior of fcc metallic materials presenting different dislocation slip tendencies.</p>		<p>KWON, YONG-NAM Formability Enhancement of 7075 Al Sheet with Two Step Forming.</p>
17:15			

Forum 1	Forum 2	Konferenzraum 2.05	Konferenzraum 2.08
B5 A. MORANÇAIS	G5 S. WEYGAND	H3 A. KIMURA	X1 M. HEILMAIER
RAMI, ANIS Combined machining/ burnishing process optimization for alloy steel 42CrMo4 using Taguchi technique.	KRUZIC, JAMIE On the fracture toughness of bulk-metallic glasses.	HANGEN, UDE D. Mechanical Properties of a PM2000 ODS alloy tested at temperatures up to 700°C.	NEKOUIE, V. Wedge indentation studies of Zr-Cu-based bulk metallic glass.
REGO, RONNIE The residual stress homogeneity state induced by gear manufacturing processes.	ISMAIL, KARIM Damage & Fracture Toughness of Fibrous Dual-Phase Steels for Automotive Applications.	BREDL, J. High temperature investigation of the fusion relevant material EUROFER by instrumented indentation.	BAEK, INCHUL Mechanics Behavior of Protein Material.
SCHEMME, M. Influence of specimen size on the residual stress formation after heat treatment of hot-work tool steel components.	OCHENSBERGER, WALTER New insights on the physically correct application of the J-integral for characterizing fatigue crack growth in elastic-plastic materials.	LAPOUGE, PIERRE Study of irradiation creep based on nanomechanical lab-on-chip testing.	ZHAO, LV Rigidity characterization and fracture analysis of the solar-grade multi-crystal-line silicon plates at low temperature.
MA, CHUANPING Effect of different surface treatments on A7N01S-T5 aluminum alloy butt joints fatigue properties.	SOMMER, HANNAH Grain Boundary Precipitation and Creep Crack Growth in polycrystalline Ni-base superalloys.	ROGOZHKIN, S. Atom probe tomography of nanoscale precipitates in 13% Cr ODS steels with Ti variation.	SHAVSHUKOV, VYACHESLAV Quantum Field Theory approach in mechanics of polycrystalline materials.
JULIEN, RENAUD Thermomechanical behaviour and microstructural evolution of high temperature forged Ti-6Al-4V during heat treatment quenching.	HIGUCHI, YU-KI Examination of Evaluation Method for Static Strength of Casting Materials by Regarding Shrinkage Porosity as Cracks: Example of AZX912 Mg Cast Alloy.	HU, XUE Identification of Cr-Y-O Nano-Cluster in a 14Cr Oxide Dispersion Strengthened Steel.	EREN, ZANA Axial crack crush response of novel nested tubes.
CONROY, BRIAN Development of ProCast models to predict residual stress within femoral implant castings.	VOLLERT, FLORIAN Insight into MAG welding under constructive constraint conditions by means of high energy synchrotron X-ray diffraction.	OGORODNIKOVA, O.V. Deuterium Retention in reduced-activation ods steels irradiated with 20 MEV W Ions.	PARADOWSKA, ANNA Neutron diffraction and imaging for industrial and engineering applications.

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C7 Y. HOSHIDE	E6 G.-P. ZHANG	A6 N.M. GHONIEM
11:00	XU, HAIFENG The effects of periodic overloads and high/low loading blocks on fatigue crack growth of aluminum alloy.	WU, XIAOLEI Grain size gradient-induced work hardening and extraordinary ductilization.	KLUSEMANN, BENJAMIN Gradient enhanced modeling of fcc and bcc nanocrystal-line materials.
11:15	BRIGHENTI, ROBERTO Multiaxial fatigue damage in fibrous composites: an approach based on micromechanical crack growth.		
11:30	NGOULA, DESIRE TCHOFFO Predicting the fatigue life at crack initiation in cruciform welded joints by using the effective cyclic J-integral (ΔJ_{eff}).	FRITSCH, SEBASTIAN Mechanical properties and microstructural changes of high strength AA7075 alloy during low temperature ECAP.	TUNG, PHAN VAN A consistent homogenization theory for a higher order plasticity model from meso to macro scale.
11:45	ITO, REN Fatigue behavior of Al/Steel dissimilar resistance spot welds fabricated using Al-Mg insert film.	HÄRTEL, MARKUS Effect of creep and aging on the precipitation kinetics of an Al-Cu-Alloy after ECAP.	DIEHL, MARTIN Spectral Method Simulations of High Phase-Contrast Materials: A Joint Numerical-Experimental Study.
12:00	ENDO, MASAHIRO High cycle fatigue strength of pure lead.	FRINT, PHILIPP On shear localization in an SPD-processed Aluminum Alloy – Part 1: Micro-structures and local mechanical properties.	MEIER, FELIX Influence of the micro-structure of Al-components on the life time of integrated circuits.
12:15		PFEIFFER, STEFFEN On shear localization in an SPD-processed Aluminum Alloy – Part 2: A simple model concept and FE simulation of the formation of alternating bands.	ESTRIN, YURI Deformation behavior of gradient materials with nanostructured near surface regions.
12:30	Poster Exhibition Lunch		

MORANÇAIS, AMELIE

Evolution of residual stresses and work hardening during cycling loading and their impact on fatigue behavior of a single crystal nickel based superalloy.

ZAGAR, GORAN

Testing fracture toughness of brittle materials via chevron-notched bend bars of microscopic length-scale.

DAI, YONG

Combined effect of radiation damage and helium on the hardening and embrittlement of ferritic/martensitic steels.

WEYGAND, SABINE

Micro-fracture testing of tungsten single crystals.

SALEH, TARIK A.

Mechanical Properties of Irradiated Ferritic/Martensitic Steels.

HEMMESI, KIMIJA

Numerical and Experimental Description of the Surface and Subsurface Residual Stresses in Metallic Components after Mechanical Surface Treatment.

DETHLOFF, CHRISTIAN

Influence of neutron irradiation on precipitate microstructure in EUROFER97.

RICO, JOAQUIN RAMIREZ

Evaluation of stress determination methods for a 2D x-ray diffraction portable apparatus using in-situ measurements during tensile testing.

BRÜCKNER, JOHN

An Improved Micromechanical Method for Investigating the Statistical Strength of Poly-Silicon Membranes.

KORCUGANOVA, O.

Atomic scale investigation of phase decomposition of Fe-22%Cr during thermal aging and subsequent heavy ion irradiation.

HASSE, BERND

Laboratory Micro-focus X-ray Sources for Stress Measurements Germany.

SHERMAN, DOV

How Crystals Break – Crack speed dependent environmental effect and surface instabilities.

PARK, SANGGYU

Comparison of mechanical properties between the HT9 and Gr.92 steel with various heat treatment conditions in a viewpoint of microstructure.

TSCHUKIN, OLEG

Phase-Field Model for Solid-Solid Phase Transformation Driven by Elasticity.

HU, XUE

Creep rupture behavior of the China Low Activation Martensitic steel at 600°C.

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C8 H.-J. CHRIST	E7 I. CHOI	A7 B. KLUSEMANN
13:30	SHIOZAWA, DAIKI Accuracy improvement of fatigue damage evaluation based on phase analysis of dissipated energy.	SCHNEIDER, GEROLD A. Bio-inspired, self-assembled functionalized Fe ₃ O ₄ nanoparticles with tunable mechanical properties.	LOEHNERT, STEFAN Modelling the thermo-mechanical behaviour of the polycrystalline microstructure of dual phase steels during sheet bulk metal forming.
13:45			
14:00	NAKAI, YOSHIKAZU Fatigue damage evaluation of polycrystalline alloy by diffraction contrast tomography using ultra-bright synchrotron radiation.	SCHWEIZER, PETER In situ SEM compression tests of layered crystals.	METZGER, MARIO Computational assessment of the microstructure-dependent plasticity of lamellar gray cast iron.
14:15	GRILLI, NICOLÒ Dislocation-based modelling of low cycle fatigue in FCC single and polycrystals.	SCHROER, ALMUT Material development for high-strength nanocomposites.	HERRMANN, CHRISTOPH A Multiscale approach for thermo-mechanical simulations of loading courses in cast iron brake discs.
14:30	KORZECZEK, LAURENT 3D dislocation dynamics simulation of crack shielding and blunting in FCC metals.	VAN DER REST, A. Mechanical behavior of ultrathin aluminum oxide films: Influence of open or closed porosity.	GHONIEM, N.M. Multi-physics, Multiscale Modeling of Plastic Deformation in Plasma-Facing Components.
14:45	PETRÁŠ, ROMAN Analysis of the cyclic plastic response of materials based on the hysteresis loop shape.	LIAO, MING-LIANG Influences of vacancy defects on compressive behaviors of open-tip carbon nanocones.	
15:00	Coffee Break		

Forum 1	Forum 2	Konferenzraum 2.05	Konferenzraum 2.08
D2 C. KÜBEL	G7 D. SHERMAN	I3 A. KOSTKA	F4 H. BIERMANN
<p>VAN PETEGEM, STEVEN In-situ micro-mechanical testing at the synchrotron.</p>	<p>SASAKI, DAISUKE Influences of hydrogen-affected yielding and work hardening on plastic zone evolution studied by Finite Element Method.</p>	<p>NEUMEIER, STEFFEN Mechanical properties and microstructures of new polycrystalline g/g' Co-base superalloys.</p>	<p>URBAN, DANIEL F. Z phase strengthened steels for ultra-supercritical power plants.</p>
	<p>RITCHIE, ROB On the fracture toughness of fcc medium- and high-entropy alloys at ambient to cryogenic temperatures.</p>	<p>MIDLTYING, JAN Investigation of the quaternary system Co-Al-W-Ta in the range of Co9Al10W2Ta.</p>	<p>HOJNA, ANNA Different mechanical behavior of MA957 ODS and Eurofer'97 steels exposed to flowing helium of 720°C.</p>
<p>REICHE, MATT Optimizing Single Crystal Growth for Detector Applications using Energy-dispersive Neutron Imaging.</p>	<p>FUJII, TOMOYUKI Stress corrosion cracking in sensitized austenitic stainless steel type 304 under tetrathionate solution environment.</p>	<p>KOLB, M. Influence of rhenium on the local mechanical properties of the γ and γ' phase in cobalt-base superalloys.</p>	<p>LUKACS, JANOS Characterization of the weldability of different AHS steel and aluminium alloy grades using thermo-mechanical physical simulation.</p>
<p>FIFE, J.L. Time-resolved (4D) in situ x-ray tomographic microscopy at TOMCAT: Understanding the dynamics of materials.</p>	<p>JUNG, JINE-SUNG: Effect of post weld heat treatment on the long-term reliability of austenitic stainless steel 347H.</p>	<p>UGLOV, VLADIMIR Radiation stability of ZrSiN system under the Xe ions irradiation.</p>	<p>QIU, CHUNLIN The microstructure characterization of the HAZ and welding CCT diagram of API X100 steel.</p>
<p>LIENERT, ULRICH Grain and subgrain high resolution diffraction from polycrystalline bulk materials.</p>	<p>JAMONEAU, AURÉLIE Interaction between torsion damage and toughness anisotropy in a drawn pearlitic steel wire.</p>	<p>ŠMÍD, MIROSLAV Effect of casting defects on high cycle fatigue behavior of nickel-based superalloy MAR-M 247.</p>	<p>LAN, LIANGYUN Weldability of modern high strength bainitic steel.</p>
<p>HOLZNER, CHRISTIAN Advance Laboratory X-Ray Microscopy: In situ materials characterization an diffraction contrast tomography.</p>		<p>ALBIEZ, JÜRGEN Finite Element Simulation of the creep behavior of directionally solidified NiAl-9Mo.</p>	

Coffee Break

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C9 D. EIFLER	E8 R. PIPPAN	A8 S. LOHNERT
9:00	MATSUO, TAKASHI The role of graphite in fatigue crack growth of ductile cast iron under the presence of internal and external hydrogen.	CHOI, IN-SUK Size Effect of Single Crystalline Noble FCC Metal Nanowires.	YICHAO, ZHU A Continuum Model for Dislocation Dynamics in Three Dimensions using the Dislocation Density Potential Functions.
9:15	FUKUDOME, SHUTO Shear mode crack propagation along with plastic flow of small area.		
9:30	CHITTA, SHIVA KUMAR Continuum Damage Mechanics Approach For Fatigue Crack Initiation Life Prediction.	NIEKIEL, FLORIAN Mechanical Behavior of Fivefold Twinned Nanowires understood from Anisotropic Elasticity.	STEINBERGER, DOMINIK A Minimalistic Continuum Approach to Formation of Dislocation Patterns Under Multislip Conditions.
9:45	HAMANO, YASUAKI Generalized critical fatigue crack length for transition from microstructure-driven to mechanics-driven propagation.	KOBLER, AARON Mechanical properties of nano-twinned Ag wires.	VERBEKE, VANESSA Orientation Dependence of the Forest Strengthening Studied with Dislocation Dynamics Simulations.
10:00	ONISHI, YOUSUKE Fatigue crack growth characteristic under hydrogen atmosphere in an ultra-low frequency region in Low Carbon and Interstitial Free Steels.	ENSSLEN, CHARLOTTE Influence of artificial defects on the mechanical behavior of Au nanowires.	SANDFELD, STEFAN Formation of Persistent Dislocation Patterns in the Similitude Regime.
10:15	MAZÁNOVÁ, VERONIKA Short crack growth kinetics in heat resistant austenitic stainless steel Sanicro 25.	BHOWMICK, SANJIT In-Situ Electromechanical Properties of ZnO Nanowires.	MAYER, ALEXANDER Structural model of dislocation plasticity and twinning for high-rate deformation of metals.
10:30	Coffee Break		

Forum 1	Forum 2	Konferenzraum 2.05	Konferenzraum 2.08
B7 C. NOYAN	L2 O. KRAFT	I4 S. NEUMEIER	H5 H.-C. SCHNEIDER
<p>YOU, CHAO Experimental and Numerical Investigation of Residual Stress Relaxation in Shot-Peened Notch Geometries under Low-Cycle Fatigue.</p>	<p>USHIJIMA, KUNIHARU Effect of Missing Cells on the Initial Stiffness and Plastic Yielding Surface of Three-Dimensional Micro-Lattice Structures.</p>	<p>KOSTKA, ALEKSANDER On the nucleation of Mo-rich Laves phase particles in 12% Cr tempered martensite ferritic steels.</p>	<p>YONG, DAI Positron annihilation research on ferritic/martensitic steels irradiated under mixed spectrum of high energy protons and spallation neutrons.</p>
	<p>BAUER, JENS High-strength micro-architected cellular materials: The interplay of design and size-dependent strengthening.</p>		<p>CHAKIN, V. Loss of strength and embrittlement of neutron irradiated beryllium.</p>
<p>SALEH, MICHAEL Analysis of compositionally ungraded FGM analogues: Neutron diffraction measurements of residual stress and mechanical testing of pressure sintered Mo-Y2O3 and Mo-Al2O3 systems.</p>	<p>SCHNEIDER, GEROLD A. Self-assembled bled ultra high strength, ultra stiff metamaterials based on inverse opals.</p>	<p>REHMAN, HAMAD UR Temperature dependent solid solution strengthening of Nickel by transition metal solutes.</p>	<p>STIHL, CHRISTOPHER Modeling Hydrogen Ad- and Desorption on Beryllium-(0001)-Surface.</p>
<p>GOU, GUOQING The distribution laws of residual stress of high speed trains by statistical method.</p>	<p>STEIN, NICOLAS An efficient analysis model for the stresses in arbitrary adhesive lap joints with flat laminated adherends.</p>	<p>YOSHIDA, KIMIAKI Effect of the Stress Multi-Axiality on the Creep Damage in Fine Grained HAZ of Mod. 9Cr-1Mo Steels.</p>	<p>SRIVASTAVA, K. Dislocation microstructure evolution in tungsten due to indentation loading simulated by discrete dislocation dynamics.</p>
<p>ORTNER, BALDER How to depict measured data and results in the matrix method.</p>	<p>BENHADDOU, TAHA Optimization of fatigue behavior of metallic shear joints.</p>	<p>SEILS, SASCHA Thermal stability of ferritic and austenitic nanocluster containing ODS steels.</p>	<p>LENOIR, GILLES Characterization and modelling of the mechanical behaviour of Nb3Sn.</p>
<p>LYUBENOVA, NATALIYA Finite Element modeling and investigation of the process parameters in Deep Rolling of a plane geometry.</p>	<p>SINGH, GAURAV Microstructure evolution and deformation texture during rolling of TIMETAL407.</p>	<p>KUMAR, AMRITESH Microstructure and micromechanics of directionally solidified eutectic alloys.</p>	<p>LIU, DONG Characterisation and modelling of nuclear graphite : from micrometres to metres.</p>

Coffee Break

Timeframe	Hebel-Saal	Mombert-Saal	Clubraum
	C10 T. BECK		K9 K. SCHULZ
11:00	<p>OKAZAKI, SABURO Application of parameter for estimation of threshold stress intensity factor range ΔK_{th} of small shear-mode cracks.</p>		<p>KAPETANOU, OLGA Stress and Strain Fluctuations in Plastic Deformation of Crystals with Disordered Microstructure.</p>
11:15	<p>JIANG, JUN Fatigue crack initiation near inclusions in Ni superalloys – a SEM based study with high resolution EBSD.</p>		<p>CASTELLANOS, DAVID FERNANDEZ Strain localization and surface effects in 2D and 3D stochastic models of amorphous plasticity.</p>
11:30	<p>NAKANISHI, SHIO Non-destructive evaluation of multiple-site small cracks in high-temperature low cycle fatigue of an austenitic stainless steel by using multipoint probe DC potential difference measuring system.</p>		<p>HEMMESI, KIMIYA Numerical investigation of welding residual stress field in tubular joints considering the effects of solid-state phase transformation.</p>
11:45	<p>IZUMI, YUI Crack detection by sonic-IR method using ultrasonic wave input through water.</p>		<p>DREXLER, ANDREAS The influence of GP and GDP precipitates on the viscoplastic material behaviour of Inconel 718.</p>
12:00	<p>HOSSEINI-TOUDESHPY, H. Low-cycle fatigue Simulation in micro-scale to obtain fatigue behavior of bimodal AL alloys.</p>		<p>RAJENDRAN, A.M. A representative volume element based multiscale modeling of fish scale.</p>
12:15	<p>FIARD, J.-M. Fatigue of automotive engine cylinder heads - A new model based on crack propagation and microstructure interaction.</p>		<p>AOYAGI, YOSHITERU Multiscale crystal plasticity simulation on anisotropic yielding behavior of ultrafine-grained metal.</p>
12:30	Closing		

GREISH, Y. E.

Preparation and Characterization of Neat and Thermally-treated Silicon Carbide Fibers-reinforced Gypsum Cements.

BONK, SIMON

Tungsten (W) laminate pipes made of ultrafine-grained (UFG) W foil.

UEHARA, TAKUYA

Phase-field modeling for microstructure formation of metal foam materials.

KUTELIA, ELGUJA

Internal Friction and Shear Modulus Temperature Dependence of 9%Cr Ferritic Steel P92 in 25 ÷750°C Temperature Range.

GREISH, YASER E.

Fiber-reinforced Calcium Sulfate Bone Cement Composites with Enhanced Bioactivity, Mechanical Properties and Controlled Biodegradability.

NAKAMURA, KYOKO

Bayesian approach to determine optimum inspection intervals for structural components of high temperature materials subjected to creep.

KHOSHGOFTAR, MOHAMMAD JAVAD

Mixed Elastic Variational Formulation of Composite Plates Based on Dimension Reduction Method.

KRUEGER, ANTJE

Microstructural study on the intermetallic compound NiAl-Cr.

EL-ASFOURY, MOHAMED S.

Effect of Friction on Material Mechanical Behaviour in Non-equal Channel Multi Angular Extrusion (NECMAE).

BRITO, PEDRO

The crystallographic template effect preceding the formation of stable α -Al₂O₃ during low temperature oxidation of Fe-Al alloys.



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