

WEDNESDAY, JUNE 1, 2016 (9:00 A.M. – 4:30 P.M.)

SESSION 8 (9:00 - 10.20 a.m.): Engineering 1
Chair: G. Eggeler, RUB

M. Mills: *Revealing the mechanisms of deformation using advanced characterization techniques*

M. Palm: *Iron aluminides: From alloy development to processing*

R. Vaßen: *Application of thermal spray technologies in the field of energy conversion and aviation*

J. Bonneville: *Atomic scale imaging of elementary dislocation mechanisms in Ni₃Al intermetallic alloys*

SESSION 9 (10:50 - 12.10 p.m.): Engineering 2
Chair: R. Schmechel, UDE

H. Riel: *III-V Nanowire devices for heterogeneous integration with Si*

E. Nannen: *Semiconducting nanocrystals for large-area light-emitting devices*

J. Meyer: *The effect of high intensity irradiance on the durability of polymer compounds*

B. Strehmel: *Near infrared LEDs and diode lasers for manufacture of new materials*

SESSION 10 (1:00 - 2.20 p.m.): Transfer
Chair: J. Schröder, UDE

M. Köller: *Material related antibacterial surfaces: Nanosilver, cicada wing effects and sacrificial anode systems*

M. Jäger: *Surface modifications in biometal alloys determinate cellular response*

T. Stöllner: *Tracing ancient gold: Methods and challenges*

J. Orłowsky: *Application of mobile NMR to characterise building materials*

SESSION 11 (2:50 - 4.10 p.m.): Production
Chair: W. Tillmann, TU Do

G. Mauer: *Recent developments in plasma spray processes for applications in energy technology*

D. Hülsbusch: *Mechanical capability and damage assessment of novel reinforced hybrid structures produced by laser additive manufacturing*

A. Wegner: *Improvement of part properties in laser sintering by cross-linking*

M. Gillmann: *Processing techniques for highly filled polymers*

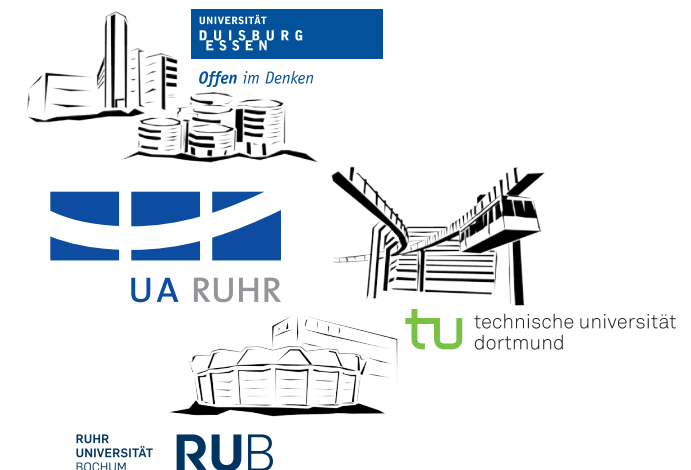
RUB Conference Centre - Arrival



The Materials Chain from discovery to production International Conference

May 30 - June 1, 2016

Program

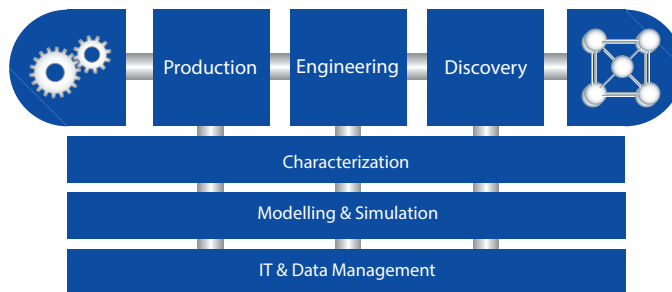


MONDAY, MAY 30, 2016 (12:00 – OPEN END)
A. Schölmerich and U. Gather: Welcome on behalf of the University Alliance Ruhr
J. Schröder: Introduction on behalf of the Materials Chain
SESSION 1 (12:30 - 1.50 p.m.): Characterisation 1 Chair: M. Farle, UDE
H. Dosch: <i>Materials Science 2016+ : From simplicity to complexity</i>
A. Wieck: <i>Joining bottom-up and top-down in materials research: Molecular beam epitaxy and focused ion beams in the same ultra-high vacuum</i>
H. Wende: <i>Discovery and element-specific characterization of new magnetic hybrid systems</i>
M. Tolan: <i>The Materials Chain facility DELTA: Synchrotron radiation in the UAR</i>
SESSION 2 (2:20 - 3.40 p.m.): Discovery 1 Chair: A. Ludwig, RUB
S. Pratsinis: <i>Flame synthesis of functional nano materials & devices</i>
M. Muhler: <i>Spinel Mn-Co oxide in N-doped carbon nanotubes as bifunctional electrocatalyst</i>
R. Schmechel: <i>Nanoparticle-in-alloy-approach without alloy: Processing and thermoelectric properties of Si-WSi₂</i>
C. Schulz: <i>Gas-phase synthesis for functional materials: Silicon for Li-ion batteries</i>
SESSION 3 (4:10 - 5.45 p.m.): Discovery 2 Chair: C. Schulz, UDE
A. Zakutayev: <i>Combinatorial synthesis as a bridge from materials modelling to device fabrication</i>
A. Ludwig: <i>Discovery and optimization of new materials using combinatorial materials science</i>
M. Nili-Ahmadabadi: <i>Evaluation of shape memory behaviour of NiTi bi-layer composite</i>
S. Barcikowski: <i>Large scale fabrication of nanomaterials for energy research</i>
J. Tiller: <i>Multiresponsive polymer networks</i>
Poster Session with drinks and regional snacks

TUESDAY, MAY 31, 2016 (9:00 A.M. – 12:25 P.M.)
SESSION 4 (9:00 - 10.20 a.m.): Characterisation 2 Chair: M. Tolan, TU Do
U. Dahmen: <i>Atomic scale observations of interface structure and dynamics by electron microscopy</i>
G. Eggeler: <i>Characterization and thermodynamic/kinetic analysis of nanoparticles in microstructures of single crystal superalloys</i>
K. Tschulik: <i>Electrochemical characterization of single bifunctional nanoparticles and of particle ensembles</i>
U. Wiedwald: <i>A new class of inherently nanolaminated magnetic materials: Magnetic MAX phases</i>
SESSION 5 (10:50 - 12.25 p.m.): Modelling and Simulation 1 Chair: R. Drautz, RUB
I. Abrikosov: <i>First-principles simulations of materials properties for accelerated knowledge-based materials design</i>
T. Hickel: <i>Ab initio predicted phase stabilities of complex materials at finite temperatures</i>
R. Pentcheva: <i>Tailoring electronic reconstruction at oxide interfaces</i>
R. Janisch: <i>Constitutive relationships for grain boundaries from atomistic simulations for multiscale mechanical modelling of metallic microstructures</i>
J. Rogal: <i>Capturing the kinetics of complex phase boundary migration: An adaptive kinetic Monte Carlo study</i>

TUESDAY, MAY 31, 2016 (2:00 P.M. – OPEN END)
SESSION 6 (2:00 - 3.35 p.m.): Modelling and Simulation 2 Chair: J. Mosler, TU Do
M. Geers: <i>Multi-scale modelling of engineering materials: on the role of interfaces across the scales</i>
A. Hartmaier: <i>Advances in scalebridging modelling of deformation and fracture in martensitic steels</i>
K. Hackl: <i>A variational model for the functional fatigue in polycrystalline shape memory alloys</i>
T. Ricken: <i>A multi-component, bi-scale continuum mechanical model for the simulation of thermal and diffusive driven metallic alloy solidification processes</i>
S. Turek: <i>Simulation of extreme fluids - Examples, challenges and simulation techniques for flow problems with complex rheology</i>
SESSION 7 (4:00 - 5.20 p.m.): Data Science and Modelling Chair: R. Pentcheva, UDE
K. Rajan: <i>Mapping the Materials Chain through data science</i>
C. Müller: <i>Statistics and the Materials Chain</i>
A. Butz: <i>Virtual material testing for the improved parameter identification of anisotropic yield functions and its application to sheet metal forming simulations</i>
F. Barthold: <i>Structural optimisation of multiscale problems</i>
Barbecue

Conference phone: 0234-32 25000



Components of the Materials Chain