

Compositionally Complex Alloys 2014



Technical Program

Munich, Germany

15 July (Tuesday)

Noon – 6:00PM	Arrival and registration
6:00 – 10:00PM	Welcome reception

16 July (Wednesday)

7:00 – 8:00AM	<i>Breakfast</i>	
8:00 – 8:10AM	George, Glatzel, Miracle	Welcome and Opening Remarks
8:10 – 8:30AM	George, Glatzel, Miracle	Workshop Background and Motivation
Session 1: Stability		
8:30 – 9:00AM	Malcolm Stocks <i>Oak Ridge National Laboratory, USA</i>	High-throughput first principles calculations of phase equilibria in CCAs
9:00 – 9:30AM	Zi-Kui Liu <i>Pennsylvania State Univ., USA</i>	Entropy Contributions in Single Phases
9:30 – 10:00AM	Jörg Neugebauer <i>Max-Planck Dusseldorf, Germany</i>	First principles calculations of CCA stability
10:00 – 10:30AM	<i>Break</i>	
10:30 – 11:00AM	Ralf Drautz <i>Ruhr University, Germany</i>	Phase stability and bond order potentials in CCAs
11:00 – 11:30AM	Kevin Laws <i>UNSW, Australia</i>	Contributions to HEA stability from enthalpy and lattice strain energies
11:30 – Noon	Nicholas Jones <i>Univ of Cambridge, UK</i>	Phase equilibria and elemental partitioning in $Al_xCrCoFeNiCu$ multi-component alloys
12:00 – 1:30PM	<i>Lunch</i>	
Session 2: Structure and Properties		
1:30 – 2:00PM	Hamish Fraser <i>The Ohio State University, USA</i>	The ordering scheme and deformation mechanisms in high entropy alloys
2:00 – 2:30PM	Ian Baker <i>Dartmouth College, USA</i>	Microstructures and Mechanical Properties of Novel Two-Phase FeNiMnAl Alloys
2:30 – 3:00PM	Zhaoping Lu <i>University of Science & Tech., China</i>	Grain size effects in CCAs
3:00 – 3:30PM	<i>Break</i>	
3:30 – 4:00PM	Dipankar Banerjee <i>Indian Institute of Science, India</i>	Ni-Al-Zr-x Complex Eutectics: Microstructure Evolution and Properties
4:00 – 4:30PM	Antonin Dlouhy <i>Inst. Phys. of Mater., Czech Republic</i>	On the grain size dependence of flow stress in CoCrFeMnNi High Entropy Alloy
4:30 – 5:00PM	Haruyuki Inui <i>Kyoto University, Japan</i>	Single crystal mechanical properties of complex materials
5:00PM	<i>Adjourn</i>	
6:30 – 11:00PM	Barbeque at Hotel Lechnerhof	



17 July (Thursday)

7:00 – 8:30AM	<i>Breakfast</i>	
Session 3:	<i>Alloy Development</i>	
8:30 – 9:00AM	Krishna Rajan <i>Iowa State University, USA</i>	High Dimensional Analysis of Chemically Complex Alloys
9:00 – 9:30AM	Alfred Ludwig <i>Ruhr University, Germany</i>	Applying combinatorial and high-throughput methods to develop multinary thin films
9:30 – 10:00AM	J.-C. Zhao <i>The Ohio State University, USA</i>	Diffusion Multiples and Local Property Measurements to Develop Compositionally Complex Alloys
10:00 – 10:30AM	<i>Break</i>	
10:30 – 11:00AM	Cem Tasan <i>MPIE, Germany</i>	Composition dependence of phase stability, deformation mechanisms & mechanical properties of CoCrFeMnNi HEAs
11:00 – 11:30AM	Oleg Senkov <i>UES, Inc., USA</i>	Exploration of multi-principal element alloys using available thermodynamic databases
11:30 – Noon	Jim Cotton <i>Boeing, USA</i>	Forget Entropy...an Informatics Approach to Identifying Useful Complex Alloy Compositions
Noon – 1:30PM	<i>Lunch</i>	
Session 4:	<i>Deformation and Properties</i>	
1:30 – 2:00PM	Vasek Vitek <i>University of Pennsylvania, USA</i>	Deformation mechanisms in CCAs
2:00 – 2:30PM	Bill Curtin <i>EPFL, Switzerland</i>	Theory of Strengthening in High-Entropy Alloys
2:30 – 3:00PM	Markus Heidelmann <i>Julich University, Germany</i>	Microstructure and defects in plastically deformed AlCoCrFeNi high-entropy alloys
3:00 – 3:30PM	<i>Break</i>	
3:30 – 4:00PM	Heung Nam Han <i>Seoul Nat'l Univ., South Korea</i>	Deformation behavior of duplex low-density steels with high Mn and high Al contents
4:00 – 4:30PM	Anton Hohenwarter <i>Erich Schmid Inst of Matls Science</i>	High Pressure Torsion of high entropy alloys
4:30PM	<i>Adjourn</i>	
5:00PM	Munich City Centre Tour	



18 July (Friday)

7:00 – 8:30AM	<i>Breakfast</i>	
Session 4:	<i>Deformation and Properties</i>	
8:30 – 9:00AM	Nicolay Lazarev <i>Akheizer Inst Theor Physics, Ukraine</i>	Diffusion in High Entropy Alloys
9:00 – 9:30AM	Anna Manzoni <i>Helmholtz Center, Germany</i>	CCAlloys as High-Temperature Materials? Microstructures
9:30 – 10:00AM	Haneen Daoud <i>Bayrueth University, Germany</i>	CCAlloys as High-Temperature Materials? Mechanical properties and oxidation
10:00 – 10:30AM	<i>Break</i>	
10:30 – Noon	All participants	Group Discussion: Major Themes, Needed Research, Summary Comments
Noon	<i>Adjourn</i>	