

## Priority Program: Compositionally Complex Alloys / High Entropy Alloys

Garbsen, 14-15 February 2018

Produktionstechnisches Zentrum Hannover (PZH), Institut für Werkstoffkunde

### Overview:

#### **14 February 2018 (Wednesday):**

Time	Chair	Event
10:30-10:50	Glatzel, Uwe	<a href="#">Welcome talk</a> <a href="#">Coordination project of priority program</a>
10:50-11:50	Heilmaier, Martin	Session 1: <b>Rapid Screening of Compositionally Complex Alloys</b>
11:50-13:20		Lunch break
13:20-14:50	Dehm, Gerhard	Session 2: <b>Refractory bcc alloys</b>
14:50-15:20		Coffee break
15:20-16:35	Maier, Hans Jürgen	Session 3: <b>Properties and analysis of high entropy alloys</b>
16:35-17:00		Coffee break
17:00-18:00 ★	Gorr, Bronislava	Session 4: <b>Investigations of Cantor alloy CrMnFeCoNi</b>
19:30		Dinner <b>Brauhaus Ernst August – Schmiedestrasse 13 – 30159 Hannover</b>

#### **15 February 2018 (Thursday):**

Time	Chair	Event
★ 08:15-10:00	Glatzel, Uwe	Session 5: <b>Particle strengthened Compositionally Complex alloys</b>
10:00-10:30		Coffee break
10:30-11:45	Manzoni, Anna	Session 6: <b>Diffusion kinetics in high entropy alloys</b>
11:45-13:00		Lunch break
13:00-15:00 ★	Glatzel, Uwe	<b>Final discussion:</b> <b>sub-group formation, organization of next meetings</b>

<b>Session 1</b>	<b>Wednesday</b> 10:50 - 11:50	<b>Rapid screening of Compositionally Complex Alloys</b> (4 talks)		
10:50-11:05	<b>Gärtner</b> Eric	IWT Bremen	<u>Particle-strengthened Compositionally Complex Alloys – powder synthesis, flowability optimization and additive manufacturing</u>	JA 2482/3
11:05-11:20	<b>Peter</b> Nicolas	MPIE	<u>High-resolution microstructure characterization of HEA powder particles</u>	DE 796/13
11:20-11:35	<b>Hallstedt</b> Bengt	RWTH Aachen	<u>Calphad modelling and databases for fcc-based MPEAs</u>	HA 5382/6
11:35-11:50	<b>Kies</b> Fabian	RWTH Aachen	<u>High-throughput experimental and Calphad screening of CCAs (Hi-TeCC)</u>	HA 8345/1

<b>Session 2</b>	<b>Wednesday</b> 13:20 – 14:50	<b>Refractory bcc alloys</b> (6 talks)		
13:20-13:35	<b>Dobbelstein</b> Henrik	RUB	Laser metal deposition of refractory High-entropy alloy TiZrNbTa	GU 1075/12
13:35-13:50	<b>Choi</b> In-Chul	KIT	<a href="#">High temperature indentation of bcc HEA NbMoCrTiAl</a>	SCHW 855/6
13:50-14:05	<b>Ziegler</b> Korbinian	KIT	Dislocation properties in body-centred cubic high-entropy alloys	BR 4886/3
14:05-14:20	<b>Müller</b> Franz	Uni Siegen	<a href="#">Microstructure and high temperature oxidation behavior of novel refractory compositionally complex alloys</a>	GO 2283/4
14:20-14:35	<b>Chen</b> Hans	KIT	<a href="#">Mechanical and microstructural properties of refractory high entropy alloys for high temperature applications</a>	HE 1872/34
14:35-14:50	<b>Lienig</b> Tim	FZ Jülich	Entropy Effects on Mechanical Properties of Single-Phase High Entropy Alloys – Preliminary Investigations at FZ Juelich	FE 571/4

<b>Session 3</b>	<b>Wednesday</b> 15:20 - 16:35	<b>Properties and analysis of high entropy alloys</b> (5 talks)		
15:20-15:35	<b>Piorunek</b> David	RUB	<a href="#">High Entropy Shape Memory Alloys - Alloy Compositions, Processing and Microstructures</a>	EG 101/32
15:35-15:50	<b>Hermann</b> Maike	Uni Hannover	<a href="#">High Entropy Shape Memory Alloys - mechanical properties and functional degradation mechanisms</a>	MA 1175/79
15:50-16:05	<b>Weiss</b> Klaus-Peter, <b>Sas</b> Jan	KIT	<a href="#">Deformation Mechanisms in FCC and BCC High Entropy Alloys at Cryogenic Temperatures</a>	WE 6279/1
16:05-16:20	<b>Schneider</b> Mike	RUB	<a href="#">Effect of grain size, temperature and texture on mechanical properties of the ternary CrCoNi medium-entropy alloy</a>	Assoz.
16:20-16:35	<b>Thiel</b> Felix	ITW Dresden	<a href="#">Strength and deformation of precious high entropy alloys</a>	FR 1714/7

<b>Session 4</b>	<b>Wednesday</b> 17:00 - 18:00	<b>Investigations of Cantor alloy CrMnFeCoNi</b> (4 talks)		
17:00-17:15	<b>Gadelmeier</b> Christian	Uni Bayreuth	<a href="#">Entropy effects on mechanical properties of high entropy alloy (HEA) CrMnFeCoNi at high and low temperatures</a>	GL 181/56
17:15-17:30	<b>Skrotzki</b> Werner	IFMP Dresden	<a href="#">Microstructure and texture development during severe plastic deformation of CrMnFeCoNi high-entropy alloy</a>	Assoz.
17:30-17:45	<b>Reinhart</b> Christian	RUB	<a href="#">Stacking fault energy measurements in modified Cantor alloys</a>	LA-3607/1 (assoz.)
17:45-18:00	<b>Srinivasan Tirunilai</b> Aditya	KIT	<a href="#">Peculiarities of deformation of CoCrFeMnNi at very low temperature</a>	KA 4631/1

<b>Session 5</b>	<b>Thursday</b> 08:15 – 10:00	<b>Particle strengthened Compositionally Complex Alloys</b> (7 talks)		
08:15-08:30	<b>Fantin</b> Andrea	HZB	<a href="#">Short-range order and microhardness of the compositionally complex alloy Al<sub>8</sub>Co<sub>17</sub>Cr<sub>17</sub>Cu<sub>8</sub>Fe<sub>17</sub>Ni<sub>33</sub></a>	BA 1170/39
08:30-08:45	<b>Manzoni</b> Anna	HZB	<a href="#">Trace elements influencing the microstructure of the Al<sub>10</sub>Co<sub>25</sub>Cr<sub>8</sub>Fe<sub>15</sub>Ni<sub>36</sub>Ti<sub>6</sub> CCA</a>	MA 7004/1 (assoz.)
08:45-09:00	<b>Haas</b> Sebastian	Uni Bayreuth	<a href="#">Mechanical characterization of modified Compositionally Complex Alloy (CCA) Al<sub>10</sub>Co<sub>25</sub>Cr<sub>8</sub>Fe<sub>15</sub>Ni<sub>36</sub>Ti<sub>6</sub> at elevated temperatures</a>	GL 181/50 (assoz.)
09:00-09:15	<b>Amalraj</b> Marshal	RWTH Aachen	<a href="#">Tailored precipitation strengthened, compositionally complex FeAlCrMnCo alloy for high temperature application</a>	PR 1789/1
09:15-09:30	<b>Wolff-Goodrich</b> Silas	Uni Siegen	<a href="#">Early stage development of precipitation strengthened CCAs in the AlCrFeNiTi system for high temperature structural applications</a>	LI 2133/4
09:30-09:45	<b>Ikeda</b> Yuji	MPIE	TRIP-CCAs with interstitials and impact on mechanical properties explored by ab initio calculations	KO 5080/2
09:45-10:00	<b>Wu</b> Xiaoxiang	MPIE	<a href="#">Non-equiatomic quinary CoCrFeMnNi high-entropy alloys with phase transformation induced plasticity</a>	RA 659/29

<b>Session 6</b>	<b>Thursday</b> 10:30 - 11:45	<b>Diffusion kinetics in high entropy alloys</b> (5 talks)		
10:30-10:45	<b>Keil</b> Tom	TU Darmstadt	A diffusion couple approach for phase stability and solid solution strengthening in high entropy alloys	DU 424/13
10:45-11:00	<b>Kottke</b> Josua	Uni Münster	<a href="#"><u>On the Appearance of a High-Entropy Effect: Tracer Diffusion and Microstructure Analysis of Nix(CoCrFeMn)100-x (20≤x ≤100)</u></a>	WI 1899/32
11:00-11:15	<b>Utt</b> Daniel	TU Darmstadt	<a href="#"><u>Atomistic modelling of microstructure effects in high-entropy alloys</u></a>	STU 611/2
11:15-11:30	<b>Gaertner</b> Daniel	Uni Münster	<a href="#"><u>Combined tracer/interdiffusion measurements in CoCrFeMnNi HEA</u></a>	DI 1419/13 (assoz.)
11:30-11:45	<b>Abrahams</b> Katrin	RUB	<a href="#"><u>Diffusion Simulations in High-Entropy Alloys</u></a>	STE 1116/30 (assoz.)