MICRESS Basic Training Course 2017
ACCESS, Intzestr. 5, D-52072 Aachen, Germany

Monday, September 4th 2017 (9:00-17:30)

9:00 -9:30	Welcome
	  ▪ getting acquainted
	  ▪ Introduction to ACCESS
		GJS

9:30 – 10.30	1) MICRESS- phenomenology	GJS

10:30 - 11:00	2.) Overview of a MICRESS simulation
	  ▪ configuration of a simulation: the Dri-File, other files
	  ▪ running the simulation
	  ▪ evaluation of results: txt files, mcr files, vtk
		GJS

11:00 – 11:30	Coffee break	

11:30 – 12:15	3.) Creation of a dri file step by step
	  ▪ command-line input/switch command
	  ▪ modification of existing .dri files/in-files
	  ▪ Example Delta-Gamma.dri
		GJS

12:15 – 13:00	4.) Post-Processing using DP_MICRESS	GJS
13:00 - 14:00	Lunch break	

14:00 – 14:30	5.) Further useful information….
	  ▪ The license system
	  ▪ Creation of a .ges File using ThermoCalc
	  ▪ ThermoCalc Scheil-calculation as basis for MICRESS simulations
		GJS

14:30 – 15:30	6.) Exercises: Post-Processing using DP_ MICRESS
	  ▪ Visualisation of a result
	  ▪ Virtual-EDX
	  ▪ Simultaneous visualisation of several results
	  ▪ Visualisation options
		Tutors/ GJS/BB

15:30 – 16:00	Coffee break	

16:00 – 17:30	7.) Exercises:
	Simple modifications of existing .dri –files using the example of solidification of Fe-C-Mn
	  ▪ modifying the initial conditions
	  ▪ modifying the alloy composition
	  ▪ modifying process conditions
	  ▪ Modification of properties (e.g. diffusion)
	  ▪ Modifications according to ideas of the participants
		Tutors/ GJS/BB

evening	Informal meeting in the city of Aachen	

9:00-10:00	Evaluation of simulation results of first day • Questions/Answers	GJS/ BB
10:00 – 10:30	**8.) Simulation of grain growth** • The Multi-Phase-Field Model • Uncoupled Phase-Field: Grain Growth • Special Models for Grain Growth • Definition of Initial Grain Structures • Evaluation of Results	BB
10.30 – 11.15	**9.) Exercise: Grain Growth in Steel** • Normal Grain Growth • Solute Drag, Particle Pinning	Tutors/ BB/GJS
11:15- 11:30	Coffee break	
11:30 – 12:00	**10.) Simulation of phase transitions** • Coupling to Solute Diffusion • Nucleation • Categorization • Example: γ-α Transformation	BB
12:00 – 13:00	**11) Exercise: γ-α transition in Fe-C-Mn** • linearized phase diagram, • nucleation	Tutors/ BB/GJS
13:00 - 14:00	Lunch break	
14:00 – 14:30	**12) Coupling to Thermodynamic Databases** • General Considerations • Coupling to Thermodynamic Databases: Theory • Coupling to Thermodynamic Databases: Practice • Coupling to Multicomponent Diffusion Data • Simulation Example: γ-α Transformation	BB
14:30 – 16:00	**13.) Exercise: γ-α Transition in Fe-C-Mn** • coupling to databases, diffusion data	Tutors/ BB/GJS
16:00 -16:15	Coffee break	
16:15 – 17:00	**14.) Exercises :** • Discussion: Topics of interest of the individual participants • setting up a simulation	Tutors/ BB/GJS

Wednesday, September 6th 2017 (9:00 - 17:30)

9:00 – 10:30	14.) Exercises (continued) • Evaluation of results • tips and tricks	Tutors/ BB/GJS
10:30 – 11:15	15.) Linking to the Process • Thermal Boundary Conditions • Boundary Conditions for the Simulation Domain • Coupling to other Field Variables	BB
11:15 -11:45	Coffee break	
11:30 – 12:30	16.) Examples of advanced MICRESS simulations • Superalloys • Steels • Light metals • others	GJS
12:30 - 13:30	Lunch break	
13:30 – 14:30	17.) Solidification of technical alloys	BB
14:30 – 16:00	18.) Exercises: Solidification of technical alloys	BB/GJS
16:00 – 17:30	Final remarks/ optional lab tour/farewell	GJS

Tutors:

BB	-	Dr. Bernd Böttger
GJS	-	Dr. Georg J. Schmitz
JE	-	Dr. Janin Eiken
RB	-	Dr. Ralf Berger
GL	-	Dr. Gottfried Laschet
MA	-	Dr. Markus Apel

MICRESS Basic Training Course
4th - 6th September 2017

Registration Form

Please fill and fax to
Access e.V., Intzestr. 5, D-52072 Aachen
Tel.: +49-241-8098014, Fax: +49-241-38578,
info@micress.de

Please register me for above MICRESS® training course:

Last Name	
First Name	
Affiliation	
Street Name and Number	
Postal Code , City	
Country	
E-mail	
Phone	
VAT-ID-Number	

The participation fee (plus VAT) is 900 € for participants from academia and 1200 € for participants from industry. It comprises all coffee breaks, lunch at all three days of the course, participation in the evening event and an electronic documentation of the course lectures. The participation is limited to a maximum of 10 participants. One computer will be provided for use by each participant.

Please select payment options: ☐ cash on site or ☐ invoice

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place,date   signature