

ALEMI- Alloying Element Effects on Migrating Interfaces

History:

The ALEMI-Workshops are held almost every year, often close to larger conferences, with the initial intention to discuss and better understand *the effect of alloying elements on the kinetics of the austenite-to-ferrite transformation in steels*. Later, the topic widened to all sorts of microstructural changes in steels and was open for both new experimental investigations and theoretical advances. ALEMI goes back to an initiative of Mats Hillert, and the 1st ALEMI-meeting was held in St. Lois, Missouri with the following participants:

C. Hutchinson, M. Hillert, J. Ågren, Gerhard Inden, Hub Aaronson, Gary Purdy, Hatem Zurob, Bill Reynolds, Yves Brechet, Suresh Babu, John Vitek, Masato Enomoto, Tadashi Furuhashi, Sam Allen, Sybrand van der Zwaag, Jian-Feng Nie, Matthias Militzer, Ernst Kozeschnik, Joakim Odqvist, Malcom Hall, Zi-Kui Liu and Bob Hackenberg.

Since then several ALEMI-Workshops (almost every year) were held in the United States, Canada, France, Germany, China and Japan (see e.g. a photo from the ALEMI banquet in memoriam of Hub Aaronson at ALEMI 2008):

International Session & ALEMI 7th Workshop

2008.3.28 Tokyo



ALEMI-Meeting in Leoben, 2023.

The upcoming meeting takes place in Leoben, Austria on July, 8th, 2023. The topics of the presentations will focus on the kinetics of austenite-to-ferrite phase transformation with a special emphasis on interface migration, solute drag and segregation. We have 35 registered participants and the following presentations are planned with the tentative time schedule:

Time	Speaker	Affiliation	Title
08:30	Erik Offerman	TU Delft	Austenite/ferrite interphase migration during vanadium-carbide interphase precipitation in steel studied by in-situ neutron scattering
08:55	Ernst Gamsjäger	Montanuniversität Leoben	Kinetics of the Austenite-to-Ferrite Phase Transformation
09:20	Luyao Fan	Tsinghua University	The role of interfacial coherency in the kinetics of austenite to ferrite transformation in Fe-C-M
09:45	Yingjie Yao	Tsinghua University	Accelerated Austenite Reversion Promoted by Cellular Solidification Structures in Selective Laser Melted Maraging Steel
10:10	Coffee		
10:40	Daniel Scheiber	Materials Center Leoben Forschung GmbH	Solute drag effects on recrystallization kinetics.
11:05	Ayush Suhane	University of British Columbia	Atomistically informed solute drag modeling of phase transformation
11:30	Imed Benrabah	University of Lorraine	Structural and compositional character of the austenite/ferrite interface
12:00	Lunch		
13:30	Rebecca Janisch	Ruhr-University Bochum	Concentration dependent effects of hydrogen segregation at grain boundaries in iron - a DFT study.
13:55	Anna Jelinek	Montanuniversität Leoben	The broad application field of atom probe tomography – from bulk alloys to thin films, from segregation to precipitates
14:20	Alexander Reichmann	Montanuniversität Leoben	Development of a repository for APT grain boundary excess data
14:45	Hariharan Umashankar	University of British Columbia	Modeling solute-grain boundary interactions in a bcc Ti-Mo alloy using density functional theory
15:10	Coffee		
15:40	Haiwen LUO	University of Science and Technology Beijing	Role of interface migration on Mn partition during the intercritical annealing in the medium Mn steel
16:05	Jules Dake	University of Ulm	Challenges in reverse engineering grain boundary mobilities from time-resolved 3D measurements of grain growth
16:30	Oliver Renk	Montanuniversität Leoben	Hidden under microstructural constraints: Uncovering the plastic strain of pure thermally driven grain boundary migration
16:55	Yongjie Zhang	Tohoku University	Pearlite growth kinetics in Fe-C-Mn eutectoid steels
17:20	END		

The ALEMI-workshop wants to provide a platform for discussing the evolution of the microstructure by combining several computational and experimental methods and providing new information for materials design and application in the perspective of physicists, material scientists, metallurgists and engineers. Participants from VOEST-Alpine are highly welcome to join the workshop.

It is planned to meet on the evening before the workshop, i.e. on 7.7.2023, for a common dinner at a restaurant in Leoben. The tentative number of participants will be 25 ± 10 . Participants from VOEST-Alpine are highly welcome. Roll-ups and material from the VOEST marketing division will be exposed in the lecture room at the day of the conference and - if possible - at the entrance of the restaurant, where the evening dinner will be held.

Best regards,

Lorenz Romaner and Ernst Gamsjäger