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Area C

Symposium C.14

Title: Thermomechanical Processing, Severe Plastic Deformation & Nanostructuring

<i>Organizer</i>	<i>Institution</i>	<i>Contact email</i>
Heinz Werner Höppel	Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), DE	hwe.hoepfel@fau.de
Andrea Bachmaier	Erich Schmid Institute of Materials Science, AT	andrea.bachmaier@oew.ac.at
Daniel Kiener	University of Leoben, AT	daniel.kiener@unileoben.ac.at

Abstract

The Symposium focuses on the processing of metallic materials in order to achieve nano-crystalline (NC) or ultra-fine grained (UFG) microstructures. On the one hand, emphasis is laid on new developments in severe plastic deformation (SPD) techniques, thermomechanical processing (TMP) or combinations of TMP and SPD and related nanostructuring processes. On the other hand, advances in modeling and simulation of these processes, prediction of the microstructural evolution during processing and industrial up-scaling strategies are also in focus. In particular, contributions dealing with the so-called Process-Microstructure-Properties (PMP) correlation are highly appreciated. Another key area is alloy design by SPD, for example mechanically driven phase transformations, formation of metastable phases, texture formation and grain boundary engineering. The Symposium will also cover strategies to enhance the microstructural stability, new developments of tailoring/grading and functionalization of materials by these processes as well as principal investigations on the deformation mechanisms in NC/UFG materials.