

8th International Conference on Physical and Numerical Simulation of Materials Processing (ICPNS)

14–17 October 2016

Seattle, Washington | Hosted by Purdue University

SESSION 3: DEFORMING AND RECRYSTALLIZATION, SALON C

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SATURDAY, OCTOBER 15, 2016

The influence of severe plastic deformation on microstructure formation of Cu-based alloys

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ABSTRACT

Several Cu-based alloys with Zn and Sn were taken for the present research. These alloys were processed on the Gleeble-3800 System using MaxStrain MCU in order to determine the effect of severe plastic deformation (SPD) on microstructure formation. In the present research, the special case of 3-D forging – 2-D forging – was applied using MaxStrain MCU. Two different regimes were developed for the processing: 10 (20 hits) cycles at room temperature with total amount of strain more than 7; 20 (40 hits) cycles at room temperature with total amount of strain more than 17. The results of microstructure analysis of Cu-based alloys after physical simulation are presented in the present research.

KEYWORDS: severe plastic deformation, Cu-based alloys, physical simulation, MaxStrain MCU