

TO TAC : J. Hyde-C. English/AEA

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THIS FORM HAS TO BE SEND BY THE 21th of May

CONTRIBUTION FOR IGRDM-9

Technical Area : MICROSTRUCTURE

Speaker : M. K. Miller

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Title of the talk : Precipitation in neutron irradiated Fe-Cu and Fe-Cu-Mn model alloys: A comparison of APT and SANS data.

Duration of the talk (could be modified by the TAC) : 15 mins.

Summary of the Talk (some lines) :

Characterization of the size, composition and number density of the copper precipitates as determined by APT and SANS in a series of neutron irradiated Fe-Cu and Fe-Cu Mn model alloys.

Precipitation in Neutron Irradiated Fe-Cu and Fe-Cu-Mn Model Alloys: A Comparison of APT and SANS Data

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A comparison of the microstructures of Fe- 0.3% Cu, Fe-0.8% Cu, Fe- 0.9% Cu and Fe-0.9% Cu- 1.0% Mn model alloys that have been neutron irradiated to a fluence of 1×10^{19} n cm⁻² at temperatures between 260 and 288 °C has been performed. During neutron irradiation, a high density of copper-enriched precipitates are formed. In the manganese containing alloy, manganese was also found in the copper precipitates. The size, composition and number densities of these precipitates was determined by atom probe tomography (APT) and small angle neutron scattering (SANS). A detailed comparison of these microstructure parameters will be presented.

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