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An intermetallic forming steel under radiation for nuclear applications

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Abstract:

In this work we investigate the formation and stability of intermetallics formed in maraging steels under ion beam radiation utilizing nanoindentation, microcompression testing and atom probe tomography. A comprehensive discussion analyzing the findings utilizing rate theory is introduced, comparing the aging process to radiation induced diffusion. New findings of radiation induced segregation of undersize solute atoms (Si) towards the precipitates are considered.

Keywords: *PH 13-8 Mo; ion irradiation; micromechanics; atom probe tomography (APT); irradiation effects*

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