

## **Dependence of Microstructure Evolution in an Ion Irradiated Molybdenum Alloy on Irradiation Temperature and Ion Dose**

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Microstructure evolution of a Mo-La<sub>0.25</sub> alloy has been studied under heavy ion irradiation. The irradiation was conducted using 6.0 MeV Au<sup>+</sup> ions with the peak dose up to 100 dpa in a temperature range between 400 and 1100°C. Cross-sectional transmission electron microscopy (XTEM) characterization has been conducted to study the defect distribution. The damage depth, defect cluster size and distributions in the alloy of different radiation conditions are compared. Both dislocation loops “rafts” or strings at 400°C and voids formation at elevated temperatures are observed. Void lattice is observed at 900°C and 100 dpa but it was destroyed at higher temperatures. The mechanisms controlling the microstructure evolution in this alloy will be discussed.