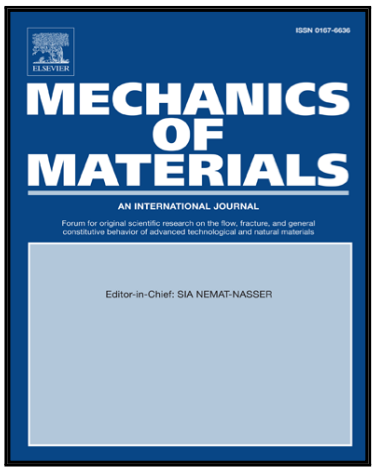

Microscale Modeling of Creep Deformation and Rupture in Nickel-based Superalloy IN 617 at High Temperature

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Highlights

- A combined CPFE-CZM framework for creep deformation and rupture modeling of IN 617 at 950°C.
- The proposed model sheds light into the microstructural mechanisms of failure in IN 617 subjected to creep loading at high temperatures.
- The proposed model is calibrated and verified using experimental creep curves and can capture the microscale deformation and progressive intergranular failure.
- The proposed model also provides life prediction capability to describe rupture life as a function of load amplitude.