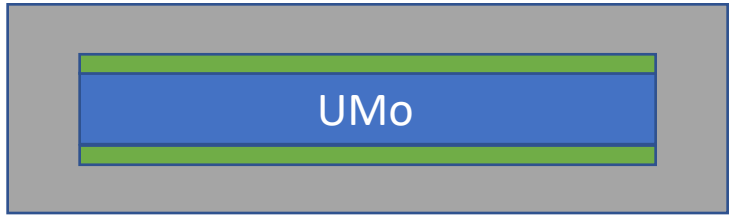
Applied pressure on UMo research reactor fuels can affect fission gas bubble evolution, as well as creep and deformation processes. This work explores how point defect formation energies vary with pressure, composition, and temperature, providing input to mesoscale and engineering scale models exploring fuel evolution.



A pressure of 10 kbar produces a 6% increase in the interstitial formation energy and a 3% decrease in the vacancy formation energy. At typical pressures relevant to research reactors (<100 MPa = 1 kbar), negligible deviations in the defect formations are observed.