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Performance of Lithium/Molybdenum Infused Trenches (LiMIT) concept under strong magnetic fields WENYU XU, DANIEL ANDRUCZYK, VIJAY SURLA, DAVID RUZIC — As fusion experimental devices progress, removing heat from the divertor region has become a challenging problem. An alternative is to use flowing liquid metal, especially lithium, as the plasma facing component with the advantage of providing a low-recycling surface which allows density control and higher confinement. The Lithium/Metal Infused Trenches (LiMIT) concept which utilizes the thermoelectric-magnetohydrodynamic (TEMHD) driven flowing liquid lithium to cool the divertor surface has been successfully demonstrated at the University of Illinois to withstand heatflux of 10MW/m² under low magnetic field without significant evaporation. However, the major concern in using the flowing liquid lithium in real tokamak environment is the presence of strong magnetic field since the resulting MHD force will strongly damp the flow. In order to investigate the performance of LiMIT design under high magnetic field, the magnet coil is upgraded with a long time pulse to achieve a strong magnetic field comparable to the magnetic environment at divertor region. The results from this newly configured magnetic field environment will be presented and compared to theoretical estimates. This work was supported by DOE-DEFG02-99ER54515.

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