

Investigation of Surface Chemistry of D₂O on Zircaloy Surfaces Using TPD

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Zircaloys are widely used in nuclear industry because of their low thermal neutron cross section as well as its mechanical strength. Zircaloy-4 is used as cladding material of nuclear fuel in nuclear fission reactors. Understanding of surface chemistry of zircaloy-4 is crucial but study of this system at the fundamental level is sparse. We studied the surface chemistry of D₂O/Zry-4 at various exposures of D₂O by using TPD (Temperature Programmed Desorption) at different adsorption temperatures.