

# Evaluation of anisotropy in mechanical and creep properties of Zr2.5Nb pressure tube material

- Zirconium based alloys show strong texture dependence and hence, anisotropy. Due to small wall thickness (i.e., 3.75 mm) of the pressure tubes, designing and machining of specimens is a challenge
- Following a novel design, different types of specimens have been machined from transverse, longitudinal and radial orientations of the Zr2.5%Nb Indian PT to study the anisotropy in the plastic deformation and hardening properties.
- Tests on tensile and shear specimens have been carried out at room temperature (25), 100, 200 and 300°C respectively. Using the experimental data, the parameters of Hill's anisotropic yield function have been evaluated.
- Similarly, the creep deformation behavior is studied in the temperature range of 500 to 1000 deg. C.

