



KNOO Work Package 2

OU overview

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OU work programme covers:

- Mechanical Performance of Nuclear Cladding and Structural Materials
 - Zirconium alloys
 - Future structural and cladding materials
 - Weld residual stresses
 - Embrittling behaviour



Zirconium alloys

- Understanding fundamentals of Zr deformation behaviour
- Microstructure/property relationships
- Link to new *Materials for energy* programme on corrosion of Zr alloys



Weld residual stresses

- Development of validated models for weld structural integrity requires detailed and accurate knowledge of residual stress fields
- Problems can be highly geometry-specific
- Weld stresses can significantly affect creep, fatigue and stress-corrosion cracking



Future materials

- Link to work package 4
- Development of programme towards future materials designs and environments