



# KNOO Work Package 2

## OU overview

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[materials.open.ac.uk/structuralintegrity](https://materials.open.ac.uk/structuralintegrity)



# 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