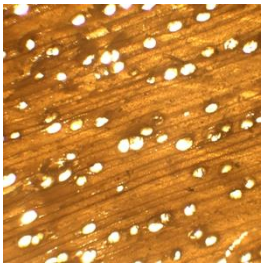
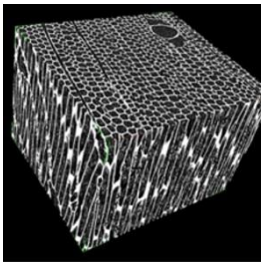
Wood Physics






Surface Analysis
Composite Materials
Bioenergy

Thermally degraded wood
Determination of the temperature at which the degradation of wood of different density and mechanical properties starts when exposed to heat. In this respect, structural changes of wood samples exposed to varying temperatures were studied using a CT scanner. The physical properties of *P. radiata* trees burnt to different degrees were determined and a classification for potential end uses was attempted.

Use of alien Invasive plants for bioenergy conversion
Various alien invasive non-woody plants were characterised chemically and physically to determine if they are suitable for bioenergy conversion.

The effect of climate change on wood quality
Samples of selected Zambian hardwood species of commercial interest originating from sites with different water availability were selected and their tree ring patterns and anatomical features are related to known climate events, such as droughts. From this data we hope to be able to predict, how the quality of these wood species will change with the expected climate change.

Wood Plastic Composites
Wood plastic composites made from invasive plants with different compatibilisers were compared with regards to the adhesive forces between the different phases on a molecular scale determined with Atomic Force Microscopy and macroscopic mechanical properties. The results showed that wood from invasive species can be used to produce WPCs if the correct compatibiliser is used.