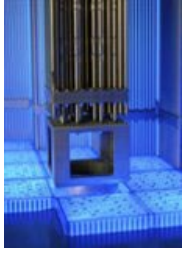


Nuclear Power and Technology

The Nuclear Power and Technology team in the Birmingham Centre for Nuclear Education and Research are actively engaged in research looking at the conceptual design and safety analyses of fusion power plant.



Particular focus areas include tritium breeding, primary nuclear heating, radiation damage rates, hydrogen and helium production and other parameters of interest in the design of fusion devices and their components, in particular the blanket.

Radiation damage, caused by collisions of neutrons with nuclei of the material, and swelling caused by hydrogen and helium from (n,p) and (n, α) reactions, produce material wearing and degradation of thermo-physical and mechanical properties, posing critical limitations to the operational life of components.

Tritium generation is crucial to achieve self-sufficiency in-situ and the group are working to provide a tool for engineering analysis of these parameters, important in the design of fusion technology.