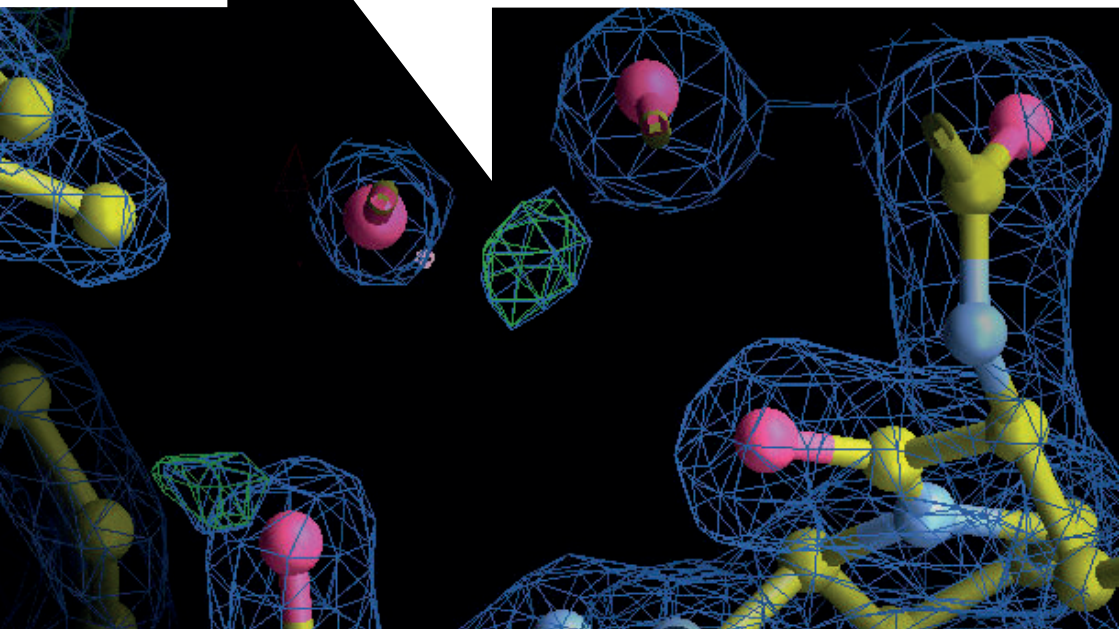
Science and Technology Facilities Council

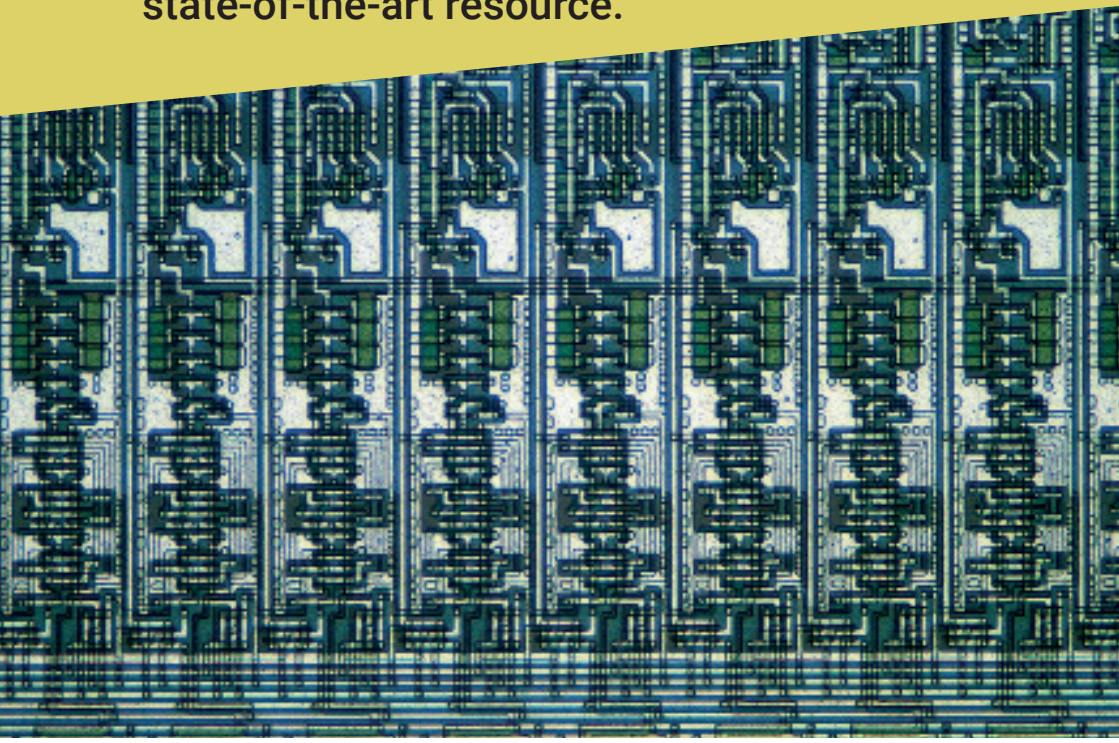
SCARF

Providing compute for data analysis across a wide range of fields.

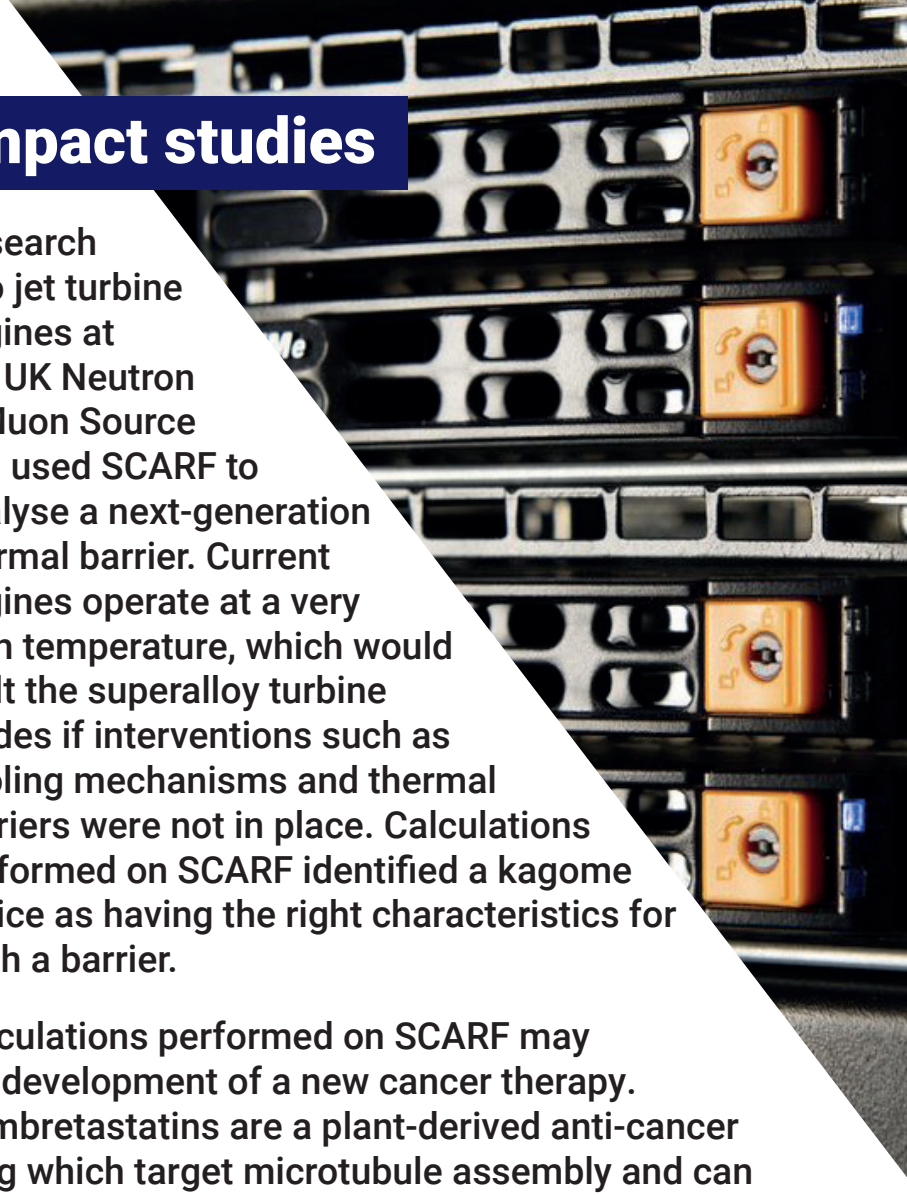


About SCARF

SCARF is a high performance computing (HPC) cluster dedicated to providing compute for STFC facilities and their users. Hosted by STFC's Scientific Computing Department, SCARF represents a significant capital investment in HPC and assists analysis of data supporting groundbreaking research across a wide range of fields. Hardware is purchased yearly and added seamlessly to the existing cluster, to ensure it remains a state-of-the-art resource.



Impact studies



Research into jet turbine engines at the UK Neutron & Muon Source has used SCARF to analyse a next-generation thermal barrier. Current engines operate at a very high temperature, which would melt the superalloy turbine blades if interventions such as cooling mechanisms and thermal barriers were not in place. Calculations performed on SCARF identified a kagome lattice as having the right characteristics for such a barrier.

Calculations performed on SCARF may aid development of a new cancer therapy. Combretastatins are a plant-derived anti-cancer drug which target microtubule assembly and can be 'switched on' using near-infrared wavelengths of light, meaning their toxic activity could be targeted to a specific location in the body. SCARF was used to calculate which chemical modifications of combretastatins are optimal for use in cancer treatment.

13,000
CPU cores

120,000
GPU cores

46.1M
CPU hours per year

1 PB
standard storage available