



# Industrial research using Diamond

## HEALTHCARE

The eternal dream to explore matter at its deepest level has continually driven scientists to build more and more powerful instruments from simple microscopes to elaborate X-ray sources.

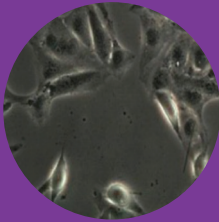
Diamond Light Source is a sophisticated synchrotron light facility which can generate highly intense beams of light ranging from IR and UV to

X-rays, all of which are making research at the cutting-edge of modern science possible. Diamond provides specialist analytical techniques for the atomic to microscale characterisation of materials as diverse as novel pharmaceuticals, catalytic materials, coatings, motor oils, and large engineering components.

Our dedicated Industrial Liaison Team of highly skilled

scientists is available to support you in every step of your research. The team can help to translate your R&D challenges into meaningful analytical solutions by making use of its diverse expertise in synchrotron methods.

*Some examples of how Diamond can be used for healthcare research and development are outlined overleaf.*



## Applications

### Diagnostics

- Understand chemical and structural changes at interfaces in sensor technologies;
- Explore novel imaging technologies for diagnostic methods;
- Probe the performance of chemical and biological sensor technologies;
- Chemical imaging at the cellular level.

### Implants

- Investigate chemical speciation during corrosion processes;
- Explore failure mechanisms: cracks, voids, fatigue and wear;
- Investigate the microstructure of novel materials;
- Follow structural evolution during cycling: examine the effects of ageing on components.

### Novel materials

- Structural identification and characterisation of biocompatible materials;
- Follow the effect of sterilisation treatment on material structure and properties;
- Investigate composite materials and artificial tissues.

### Devices

- Structural identification and characterisation of biocompatible materials;
- Follow the effect of sterilisation treatment on material structure and properties;
- Investigate composite materials and artificial tissues.

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**For further information**

Diamond Industrial Liaison Team

 **+44 1235 778797**

 **industry@diamond.ac.uk**

 **diamond.ac.uk/industry**

 **@DiamondILO**