ADVANCED MANUFACTURING

THE AUSTRALIAN SYNCHROTRON: YOUR PARTNER IN PROBLEM-SOLVING AND INNOVATION

'The cost saving is dramatic – we've now been able to design a range of products for market that we were unsuccessful with before.'

WORLD-CLASS RESEARCH SOLUTIONS

The Australian Synchrotron empowers industry to problem-solve and innovate, revealing how matter fits together, moves, interacts and changes, in a way that outshines what can be achieved in any conventional laboratory.

We partner with industry to achieve world-class breakthroughs in areas as diverse as supporting the development of effective treatments for Alzheimer's disease and reducing impacts of environmentally intensive practices, to boosting the nutritional value of food and gaining new insight into the efficient storage and transport of energy.

Our experts harness light, a million times brighter than the sun, to examine and analyse the structure and behaviour of samples in unprecedented detail, with precision, accuracy and speed not available elsewhere, helping industry partners to interrupt, boost and manipulate the most basic of processes to overcome technical hurdles and roadblocks and drive product innovation.

WE PROVIDE A RANGE OF HIGHLY SPECIALISED AND UNIQUE SERVICES IN ADVANCED MANUFACTURING

ADDITIVE MANUFACTURING:

- providing a deep visualisation and understanding of elemental and polymer distribution in coatings, surface treatments and structures that have been fabricated using a 3D printer
- characterising of microstructures and nano-voids, to improve quality of products in the additive manufacturing market.

COMPOSITE MATERIALS:

- analysing the structural characterisation of metal and ceramic composites for the optimisation of physical and chemical performance
- characterising metal alloys and ceramics through elemental mapping at micron resolution, which can be applied to polymer microstructures in materials such as carbon fibre composites with mapping resolution higher than 10 microns.

WHAT OUR CLIENTS SAY ABOUT US

'While our internal analysis showed our newly-invented method of laser deposition was producing excellent results, the Australian Synchrotron was able to confirm, visually, how much difference there was.

'The cost saving is dramatic – this new method is far more cost effective, and we've now been able to design a range of products for market that we were unsuccessful with before.'

Mr Gregory Hooper, Founder, Executive Director, LaserBond

Australian Synchrotron
Turning bright ideas into brilliant outcomes

VICTORIA State Government
Australian Government
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CHEMICAL MANUFACTURING:

- analysing single microcrystals or bulk crystalline powders for quality control and to determine patent compliance of chemical products
- characterising nanostructures in solid chemical products such as fertilizer and chemical activity of catalysts.

PRODUCT DEVELOPMENT:

- monitoring the effects of different processing for novel products such as polymer photovoltaic cells and electronic components, lead-free solder materials, high-density energy materials and batteries, and piezo-ceramics.

WE PROVIDE FULLY-SUPPORTED ANALYTICAL SERVICES BEFORE, DURING AND AFTER YOUR EXPERIMENTS, INCLUDING:

- identifying and tailoring effective synchrotron techniques for your sample to expedite detailed analysis
- delivering fast data acquisition from your sample, in unprecedented detail
- supporting timely data analysis and reporting.

For further information on how the Australian Synchrotron can help you problem-solve and innovate, contact:

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