

Australian Industry

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WTIA National Diffusion Networks
Project (NDNP) funded by the
Federal and State and Territory
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SUCCESS STORY NUMBER MS03: THE BREATH OF LIFE – *Australian company ResMed taps into joining technological expertise through the WTIA Medical Devices and Sensors Industry Sectoral Project*

Medical Devices and Sensors Industry Sectoral Project (ISP)

Australia's medical device industry is characterised by high levels of expenditure on research and development and a specialised and skilled workforce. Australian developments in medical devices have placed some of our medical products at the forefront of world technology.

Through the AusIndustry-supported national Medical Devices and Sensors Industry Sectoral Project (ISP) WTIA, ANSTO and CSIRO have been able to offer valuable technical support to Australian companies in the sector – often free of charge.

ResMed Limited

One such leading Australian company, based in Sydney, is the ResMed Ltd, a respiratory medical device manufacturer specialising in products for the diagnosis and treatment of Sleep Disordered Breathing (SDB).

Formed in 1989, ResMed has maintained its focus on SDB, which is gaining greater public and physician awareness. Operations have grown dramatically through the introduction of a number of highly innovative product lines. Today, products are marketed and distributed in over 60 countries.

In its commitment to technological innovation, ResMed spends approximately 7-8% of net revenues on research and product development. Innovation has played a major role in ResMed's success. Since the company's founding a large number of product advancements and improvements designed to increase patient comfort and encourage compliance with therapy have been developed.

ISP Working with ResMed

In discussions with ResMed's Mr Gary Robinson, Head of Manufacturing – Patient Interface, the Project members, WTIA, ANSTO and CSIRO, illustrated how new joining processes, methods, designs and materials could be accessed through the Project and the WTIA's OzWeld Technology Support Centres (TSCs) Network, which is supported in NSW by the Department of State and Regional Development. Potential benefits could

be achieved in performance and precision manufacturing economies.

Although SDB masks are designed to be disposable and inexpensive, the critical air flow generators need to be built to last. The company is continually sourcing new materials and joining processes to improve these products. The resources of the ISP could make positive contribution in such areas.

*ResMed S8
Continuous
Positive Airway
Pressure (CPAP)
device*



Potential New Technologies

A number of areas were identified by the team where the members of the ISP as well as overseas TSCs could potentially offer significant technological support to ResMed.

Subsequently, a project was conducted looking at the application of latest methods of ultrasonic bonding for the production of polycarbonate blower parts. Ultrasonic bonding combines high frequency mechanical motion with compressive force to create frictional heat resulting in bonding of the materials.

Technology partners, CSIRO and ANSTO worked with sample components, analysing a range of joining options, and producing recommendations for post joining treatment to maximise joint integrity, with improvements to bottom-line throughput and efficiency. The study also investigated the feasibility of a number of alternative joining methodologies.

Successful Outcomes

Mr Robinson commented that it was a most positive step to utilise the support and expertise of Australian ISP members ANSTO and CSIRO, and that the company expected long-term benefits from the liaison which would support it in continuing to be a world-leader in the production of life-saving SDB equipment.

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