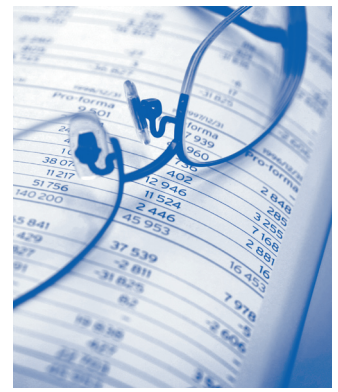
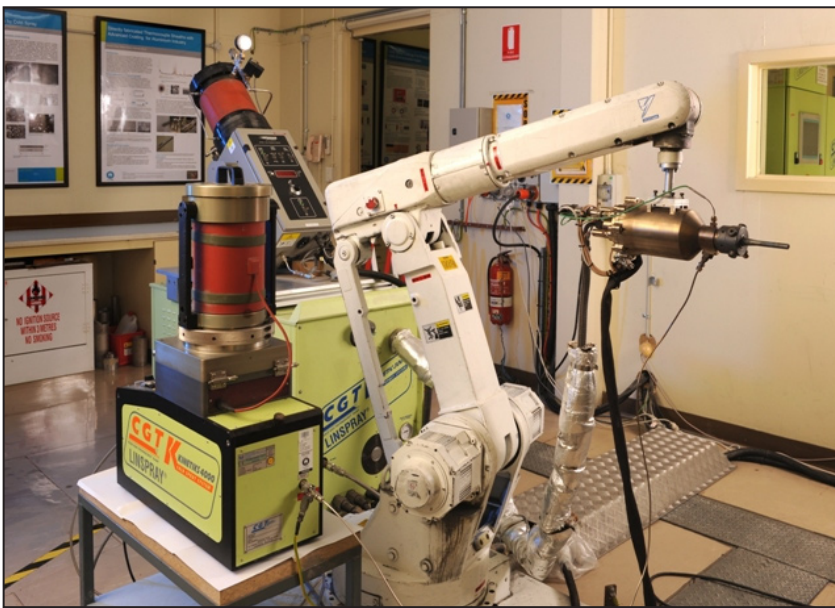




Australian Institute
for Commercialisation



→ Case Study: **FRONTLINE PTY. LTD.** **AUSTRALASIA**



CSIRO Cold Spray Laboratory

The Company

Frontline Australasia Pty Ltd is a Victorian based manufacturer and supplier of precision components and assemblies to the automotive and defence sectors.

Frontline Australasia has a long history of innovation which includes developing a new range of automotive products for the export market, as well as partnering with a number of organisations to enhance and improve production capabilities.

Frontline Australasia, like the Australian manufacturing industry as a whole, faces major challenges.

Traditionally, the manufacture of seamless titanium pipe is labour and energy intensive as well as time consuming. Moreover, the material yield is low which leads to high manufacturing costs.

The Opportunity

Through the TechFast program, the Australian Institute for Commercialisation (AIC) has assisted Frontline Australasia in its collaboration with CSIRO to achieve significant new innovations in its manufacturing processes.

Frontline Australasia identified a manufacturing innovation developed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and sought assistance from the AIC's TechFast program to access this technology.

CSIRO has developed several innovative techniques in direct manufacturing. One of these utilises a process known as cold spray. In the cold spray process, small particles of a material are accelerated to supersonic speeds and are sprayed to produce near net shape parts, as opposed to the assembly of individual components.

Fast Facts

- Through the AIC's TechFast program, Frontline accessed CSIRO cold spray technology
- Frontline successfully negotiated a licensing agreement to utilise the technology for direct manufacturing
- A development program has commenced to deliver energy savings of 30%



The Australian Institute for Commercialisation (AIC) is a leading service organisation helping innovators achieve commercial success. Around Australia, the AIC helps business, research organisations and governments convert their ideas into successful outcomes.

Case Study: Frontline Australasia



Dr Mahnaz Jahedi, Cold Spray Team Leader, says, "CSIRO has a major research activity in titanium through its Light Metals Flagship to value add to Australia's vast titanium minerals wealth".

She adds, "Titanium has excellent properties such as its light weight and resistance to corrosion; however the high cost associated with the material and current manufacturing technologies is preventing the use of titanium for high volume production of consumer goods".

"By developing a direct manufacturing technology to manufacture seamless titanium pipe using cold spray, we have shown that direct manufacturing is the way to go".

Outcomes

Through facilitation by the AIC's TechFast program, Frontline Australasia successfully negotiated a licence agreement to use CSIRO's cold spray technology for a continuous production process for seamless titanium pipe.

"The Australian Institute for Commercialisation was successful in facilitating the negotiations between Frontline Australasia and the CSIRO in establishing the research project and helping define the outcome targets". Kevin Hooper, CEO, Frontline Australasia.

Frontline Australasia and CSIRO also agreed to a multi-million dollar collaborative project to further develop the technology for commercial use, giving Frontline access to CSIRO's internationally recognised cold spray expertise and research facilities to tailor the technology to Frontline's specific requirements.



The Frontline Australasia - CSIRO Project Team

"The CSIRO Light Metals Flagship Team has grasped our vision and needs, and generated truly innovative solutions which should lead to a new industry sector in Australia". Bill Bardsley, R&D Manager, Frontline Australasia.

Frontline Australasia and CSIRO Light Metals Flagship/Materials Science and Engineering have commenced a joint development program for establishing a pilot plant for continuous production of seamless titanium pipe using cold spray technology.

This will eliminate most of the processing steps involved in the conventional manufacturing route. The resulting energy savings are estimated to be at least 30%.

Dr Jahedi says, "Frontline's continuous seamless titanium pipe pilot plant using cold spray technology will be a world first for this type of manufacturing plant".

A patent application protecting the continuous process has recently been filed. Frontline Australasia also received a grant of \$1,222,371 in the third round of the Climate Ready program of the Clean Business Australia initiative to further develop this capability.

The Frontline Australasia-CSIRO collaboration brings together leading Australian R&D with a progressive and innovative Australian manufacturing company, leading Australian efforts towards energy efficient manufacturing.

www.frontline-aust.com.au

If you are interested in finding out more about the AIC's TechFast program, please contact Michelle Critchley on (03) 9663 4775 or e-mail michelle.critchley@ausicom.com



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