

Kinetic Elements' Alex Engel is pioneering new eco-friendly printing technology. Photo: Rob Skovell.

Clean printing technology

Breakthrough technology for eco-friendly printing.

Family-owned start-up, Kinetic Elements, is a great example of how innovative Australian manufacturers are successfully countering competition from China and other low cost economies.

The Melbourne-based company was established in 2014 to take new additive manufacturing technology developed by its parent company, Laserlife Littlejohn, and the CSIRO to domestic and global markets.

Its patented process manufactures innovative titanium anilox rollers which are used in the printing of corrugated packaging cardboard and flexible materials such as plastic film, paper and metallic foil.

“The value of our technology is that the titanium rollers are longer lasting, cheaper and easier to repair than the chromium oxide rollers which have been typically used in the printing industry,” says Kinetic Elements managing director Alex Engel.

Continuous innovation

Kinetic Elements is following a proud family tradition of innovating printing technology and its parent company is one of Australia's leading print roller manufacturers.

Laserlife Littlejohn was founded by Alex Engel's parents, Barbara and Carl Engel. They started out manufacturing the gum used in earlier printing plates and in the 1980s introduced high-tech lasers for the engraving of plates and anilox rollers.

Investment in advanced laser, plasma and metal spraying technology followed, opening up global export markets in South East Asia, China, Japan and the United States.

In 2010 the company began collaborating with the CSIRO on new supersonic dynamic gas deposition or 'cold spray' technology.

“We were invited by CSIRO to join the Victorian Direct Manufacturing Centre, a collaboration of manufacturing SMEs and the research sector, to apply cold spray technology to the manufacture of anilox rollers,” says Engel.

“This was a very timely and exciting opportunity for us, as we were facing stiff competition in the traditional chrome oxide plated print roller market from cheaper Chinese products.”

Laserlife Littlejohn invested over half a million dollars in the development of the cold spray coating process.

It’s an investment that’s paid off, with a new environmentally friendly ‘Tiaurum’ technology developed to manufacture titanium printer rollers.

The new process eliminates the use of chromium oxide, which is a hazardous material with serious and costly waste disposal issues. And extensive trials have shown the titanium rollers perform better and are cheaper than the chromium oxide technology.

“Our collaboration with the research sector has been very positive for our business,” Engel says.

“We contributed our knowledge of the printing industry and advanced laser etching technologies and the CSIRO contributed their cold spray research and process know-how and equipment and metallurgical analysis instrumentation.

“As a result, Kinetic Elements has exclusive global rights to this valuable new technology.”

Marketable technology

Kinetic Elements is establishing its Tiaurum process as a commercial operation, with an eye to disrupting the market for chromium oxide rollers. It wants to supply the titanium rollers to its existing customers and is identifying new customers at home and in South East Asia.

“Our local customers are showing strong interest in this technology and are keen to conduct trials in their printing operations as soon as we are in production,” says Engel.

“We have also received encouraging interest from leading roller manufacturers and printing machinery OEMs in the US, Japan and Europe, who may be potential licensees for the Tiaurum process in their markets.

“Ongoing use of hazardous chromium oxide is under threat in the US and Europe due to environmental regulatory concerns, and at present, there is no viable alternative process.

“We have the solution they need.”

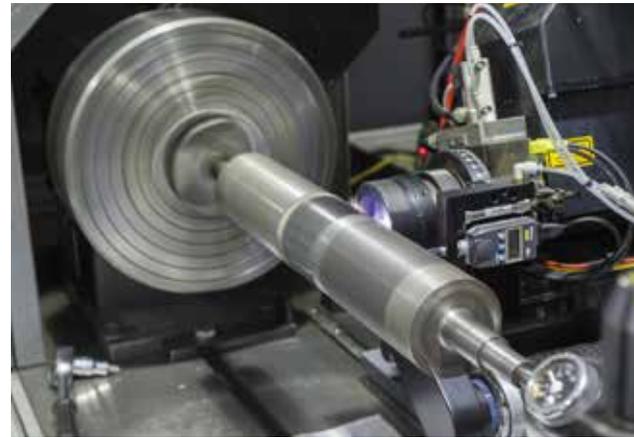
The cost of establishing cold spray, advanced laser and finishing plant facilities is likely to exceed three million dollars, a significant investment for a small family-owned company.

An Australian Government Accelerating Commercialisation grant and expert advice is supporting the construction of a state-of-the-art manufacturing plant in 2016; product testing by CSIRO; professional assistance with licensing; and intellectual property protection.

Australian Government Commercialisation Adviser Ron Mack is impressed by Laserlife Littlejohn’s commitment to the venture at a time when their core business is under severe competitive pressure.

“Manufacturing and commercialising this technology has the potential to transform the business into a global leader in the niche anilox roller market,” Mack says.

Kinetic Elements anticipates commercial production of its innovative rollers will commence in early 2017 and sales in mid-2017.



The titanium roller technology has been developed with the CSIRO.

Snapshot

Company
Kinetic Elements Pty Ltd

Established
2014

Location
Melbourne, Victoria

Personnel
The company draws on parent company staff and full-time specialist and technical staff will be appointed as production ramps-up

Key product
Eco-friendly anilox rollers for the printing industry

Investment and strategic partnerships
Commercialising the titanium roller technology will involve investment of at least \$3 million in plant and equipment

The company is keen to engage with potential strategic partners and licensees

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