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Update on TiDA

New Zealand's titanium alloy powder applications industry is in its infancy but could rapidly grow into a billion dollar export industry given the right support and encouragement.

The Titanium Industry Development Association (TiDA) was formed to help unlock that potential and has now reached an exciting stage in helping New Zealand companies develop new products for the international marketplace.

TiDA has been set up in collaboration with New Zealand Trade and Enterprise, Foundation for Research Science and Technology, Tertiary Education Commission and a number of private sector companies to help co-ordinate industry activities now and in the future.

TiDA has a number of key roles:

- To introduce titanium powder technology to the wider New Zealand industry
- To help companies build up and improve consolidation capability
- To develop and manage a prototype and testing facility
- To implement a national research and development strategy
- To manage the ongoing development of relevant skills
- To strengthen existing and forge new

international links

TiDA chairman Ian Macrae says the best way to realise the economic potential of the titanium powder industry is to support local companies in developing new products.

"Titanium powder has no value on its own until it's consolidated and made into something. We want to give New Zealand companies the leading edge and give them a leg into the international market."

Mr Macrae says he hopes to see Tauranga become a 'baby Silicon Valley' but in titanium powders. "The seeds are all there. Now we have the infrastructure we can build all sorts of new industries around it."

This is the first issue of TiDA's bi-monthly newsletter which will keep all stakeholders and interested parties up-to-date with developments.

TiDA's chief executive Warwick Downing invites contributions and suggestions from all members about topics of interest you would like to see covered in future issues.

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New Facility Opening

A world-class testing and prototyping facility for titanium powders and products will open for business in Tauranga early next year.

It marks a major milestone for TiDA and has been more than two years in the planning.

TiDA chief executive Warwick Downing says the Applied Powder Metallurgy Centre will cater to a wide range of industries so they can tap into what will potentially be a billion dollar export industry.

“The role of the facility is to help companies develop new products and prototypes and to ensure they’re fit for purpose,” Downing says.

“It will play a significant role in helping build New Zealand’s powder metallurgy capabilities and research, so it was very important that the centre be industry-focussed.

“TiDA will be a one-stop shop for design, prototyping, small scale manufacturing and physical properties testing.”

The 252 sq m stage 1 building will feature a number of purpose-built areas and state-of-the-art technology.

The main laboratory will contain heavy equipment such as vacuum furnaces, an EDM wire cutter and universal testing machinery for testing tensile, bend, compression etc.

A wet laboratory will be used for corrosion testing, while another room will house a scanning electron microscope.

“We will also have an inverted metallographic microscope complete with an image analysis system. Objects can be held above the microscope instead of underneath it which means there are few limitations



Construction of new TiDA facility

when it comes to size,” Downing says.

The new facility, which will be fitted out in March and ready to open in April, has been developed with support from New Zealand Trade and Enterprise.

Downing says powder consolidation technology will be on site in future, and TiDA is also able to access other resources which specific companies may need when developing a product.

The centre is located at the Bay of Plenty Polytechnic’s Windermere campus and is part of their applied technology and trade facility.

Polytechnic business development manager, Richard van der Jagt, says TiDA’s arrival will be a welcome addition for students studying high-end engineering and associated trade qualifications.

“They will have access to the specialist people and knowledge that comes with the facility and equipment. There will be world experts based at this centre so we can draw on that knowledge exchange which will become really valuable.”

Any companies who are interested in making use of this outstanding facility are welcome to contact TiDA.

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Obituary for Mark Redpath



The late Mark Redpath

It is with great sadness that TiDA would like to pay special tribute to Mark Redpath – one of the “visionaries” of the titanium powder industry – who passed away on November 29 from motor neuron disease.

Mark had worked as a TiDA consultant for the past three years as he envisaged his Tauranga-based company, Hole Solutions, would use the new technology to produce complex valve designs.

“He could see the huge potential that was there and he spent much of his free time helping guide the industry’s development, the role of TiDA, and the way it would help companies,” says TiDA chief executive Warwick Downing.

Mark (who was a former president of Export New Zealand Bay of Plenty), promoted titanium powder technology to senior government and non-government leaders and helped put together TiDA’s initial website.

Mark also carried out research on how TiDA should be structured, and was committed to core skills training and education within the wider industry.

“He was very community-minded, particularly within the business community, and he’s left behind a legacy which the rest of us will now strive to continue.”

TiDA executive committee member Peter Franz first met Mark in 2005 and says his good friend was passionate about developing the broader titanium industry.

“He was very supportive right from the beginning. He was one of the most interesting people I have met since coming to New Zealand.”

Peter describes Mark as a gentlemen, who was well-educated and had great patience with others. The father-of-two was also very family orientated and had a positive attitude towards life.

“He had a big heart and always made everyone feel important. I miss him very much as a person and a friend, and all his support to drive the idea of a titanium industry here in New Zealand.”

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Laser Sintering Capability

Laser Sintering, also known as Selective Laser Melting, involves laying down a layer of powder about 30 microns thick and then using a laser to selectively melt the powder to form a desired object.

There are only a few Laser Sintering machines in the world, and TiDA is proud to now offer New Zealand companies access to this stunning technology.

“The system can produce exceptionally complicated pieces and opens up a whole new world of possibilities,” TiDA’s chief executive Warwick Downing explains.

“Most of the other machines worldwide are used in research facilities. This is possibly the only one focussed on titanium powder and available for commercial purposes.”

The machine is based at Triodent’s factory in Katikati but TiDA owns a 27 per cent of the machine time on behalf of New Zealand’s emerging titanium industry so new products can be developed, and limited production can be scheduled.



Prime Minister John Key and Triodent CEO, Dr Simon McDonald view Triodent’s new Laser Sintering Machine in action

“There’s still much to learn about the true capabilities of this machine, while the machine can build a complicated part direct from a CAD drawing the design is an important element” Downing says.

“We’re working with the Foundation for Research, Science and Technology to help realise its full potential but in the short term we are ready to help companies begin prototyping and manufacturing new products.”

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