

Media Release

MINISCULE PROBLEM OPENS NEW GLOBAL OPPORTUNITIES FOR TWO LASER CAPABLE AUSTRALIAN MANUFACTURERS

- *Collaboration between two Australian manufacturers is solving a tiny, yet highly complex problem that is set to create a world of opportunity for Australian industry*
- *Connected by the Advanced Manufacturing Growth Centre (AMGC), ActionLaser and OptoTech have combined their laser-based manufacturing capabilities to map the surface of dinner-plate-sized, highly precise filter relied upon by global industries*
- *The collaboration has resulted in OptoTech deploying its laser inspection technology to measure and verify the quality and quantity of ActionLaser's micron-sized laser drilled filtration holes – which could number up to 500,000 holes per filter*
- *As a result, ActionLaser now possesses a competitive edge in global markets and OptoTech has deployed its capabilities across a completely new industrial segment.*

Two of the nation's small yet world-class high-tech manufacturers have teamed up to deliver an intelligent solution for a complex problem, opening new commercial opportunities in the process.

Originally spun out from CSIRO in 1988, ActionLaser was founded by researchers in high-power laser technology seeking to commercialise world-leading applications, "We are experts at making small holes in thin metal" is their succinct description of what they do, and the results are screens that are used by plastic recycling, food and beverage, water filtration, and other industries.

Quality checks on each of these holes, which range between 90 (the width of a hair) and 400 micro diameters depending on the type of filter, are complex.

Up to today, ActionLaser relied on manual point inspections by microscope, which was cumbersome, tiring, and covered a limited area, it believed automated optical inspection as an important next step.

The Advanced Manufacturing Growth Centre (AMGC) introduced the New South Wales-based company to Victorian-based OptoTech, a specialist in building laser-based inspection systems for exacting clients in fields including semiconductors, hard drives, and medical devices. Between both companies, the vast majority of their work is exported.

"We could previously measure perhaps 100 holes on the disc and extrapolate a measure for the entire disc, but in reality, there's about 500,000 holes and we really wanted to qualify our work against international peers," explained **David Pask, Production Manager at ActionLaser.**

"As a result of this collaboration, we essentially receive a map of the disc and each hole size which allows us to calculate performance of these filtration discs. From here, we can then calculate what we and our customers call 'flow through', a critical measure of performance and something up until now nobody on the planet could do.

"Being able to put flow measurement on ActionLaser's discs gives us an important competitive edge, because there are many claims made across the industry and we know we are the only manufacturer able to qualify the claim via OptoTech's assistance." said Pask

Mircea Petre, Director, OptoTech said mapping a disc in high detail was a tricky problem for a number of reasons - the holes are small and the number of features are huge.

"The disc inspection system we have developed with ActionLaser is not something you can just grab off the shelf, it is a highly complex product requiring a complex solution" Petre said.

"Also, measuring - let's say - one million holes or points of reference is not something that people can contemplate. It is also a task that not many companies are equipped to solve, but we are grateful to have had the opportunity to work on it via AMGC's introduction." said Petre.

The system can show a user's parameters, including distribution of the holes' diameters, melt residuals inside holes, as well as hour-glassing, which can lead to rejected parts.

Dr Jens Goennemann, Managing Director, AMGC, said that the work showed the value of leveraging a highly capable manufacturer network to focus on solving difficult, real-world problems.

"Collaboration should be in every manufacturer's toolbox," said Goennemann.

"There is a magic in finding the right experts and trusting them to deliver on something you couldn't possibly do inhouse. Experts for a problem as complex as this one might take some legwork, but they're out there and AMGC knows where they are."

ActionLaser is ramping up output of its MeltFilters, which has grown from 100 units a year business to 1,500 a year via an AMGC-supported project to commercialise production.

Pask sees this growing to 5,000 in the future, aided by the new inspection and flow rate data to communicate the product's superiority to clients.

He said the real lesson has been around getting past an older, inward-looking mindset for building machines by "getting the relevant book from the library and working out how to do it" rather than being open to outside assistance.

The first step involves getting out of the office.

"So, networking events and making connections that way might not come to anything. That chat with OptoTech might've gone nowhere, but it was the right place, right time to do something.

Over the past nine years, AMGC has facilitated more than 500 national collaborations and co-funded over 161 industry projects, while creating more than 4,300 jobs across the country. It has invested over \$137 million of combined industry and Government funds into manufacturing projects, resulting in an estimated \$1.62 billion in additional national revenue.

For further information on AMGC's member offerings and to sign up, visit <https://www.amgc.org.au/membership/>

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About ActionLaser

Commercialising laser technology originally developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO), ActionLaser began life as a solution for improved centrifuge screening within the sugarcane and beet industry and continues to be a significant supplier in this market.

The company has since leveraged its capability within the industrial food processing sector, to service wider applications in the mining and minerals processing, petrochemicals, water treatment, pigments and powders, and pulp and paper industries.

Over 80% of ActionLaser's product is now exported to Europe, North America, Asia, Africa, and South America. The company remains privately Australian owned and operated, employing around 30 staff.

<https://ActionLaser.com/>

About OptoTech

OptoTech is an Australian company specialising in the development and commercialisation of customised solid-state lasers (DPSS) and semiconductor laser solutions, as well as OEM laser systems for the instrumentation industry.

The company provides expert consulting services and practical solutions in the fields of lasers, laser-based systems, electronic and optical design.

OptoTech's core business includes development and commercialisation of diode pumped solid state (DPSS) laser systems and associated technologies; development and commercialisation of semiconductor laser systems; development of customised laser solutions based on proprietary laser technologies; and development of laser instrumentation. <http://www.optotech.com.au/>

About Advanced Manufacturing Growth Centre (AMGC)

The Advanced Manufacturing Growth Centre (AMGC) is an industry-led, not-for-profit organisation. AMGC's vision is to transform Australian manufacturing to become an internationally competitive, dynamic and thriving industry with advanced capabilities and skills at its core.

Through the delivery of its world-leading research, workshops, and ground-breaking projects, AMGC aims to develop a highly skilled and resilient local manufacturing sector that delivers high-value products – via the integration of innovative technology – to domestic and international markets. <http://www.amgc.org.au>

Media Contact

Tyson Bowen

Advanced Manufacturing Growth Centre

M: 0418 826 936

E: Tyson.bowen@amgc.org.au