

Pacific 2017: Accolades flow for maritime innovation



Pictured L to R: Dr Mark Hodge, CEO, accepts an award on behalf of DMTC from the Minister for Defence Industry, the Hon Christopher Pyne MP.

DMTC has featured prominently in this year's [Maritime Australia Industry Innovation Awards](#), which recognise success in naval and maritime innovation.

DMTC received a High Commendation for its leadership of a project to study Microbiological Corrosion on Australian naval vessels, and DMTC researcher Peter Kabakov was recognised with the prestigious Young Innovator scholarship prize.

The Awards were presented by the Minister for Defence Industry, the Hon Christopher Pyne MP, on 4 October at the Pacific 2017 International Maritime Exposition at Sydney's International Convention Centre (ICC).

Young Innovator - Peter Kabakov

Employed by the Australian Nuclear Science & Technology Organisation (ANSTO), Mr Kabakov has worked on a DMTC project to establish an Australian production capability for single crystal, piezoelectric ceramics.

Since mid-2015, he has been the Lead Scientist on the project that has direct relevance to Australia's Future Submarine Program and the upgrades and sustainment of the Collins Class submarine fleet.

With local development of acoustic transducers currently limited by issues with the supply of single crystals from overseas, the project is developing the technology solutions to enable establishment of a manufacturing capability in Australia. Continuing research is focused on fully characterising the properties that will enable the single crystal piezoelectric technology to be considered for commercial scale production.

CEO of DMTC, Dr Mark Hodge, said he was delighted for Mr Kabakov.

"As a not-for-profit public company, DMTC exists to build and exploit deep expertise and intellectual property for the Australian defence sector. One way we achieve this is through identifying, sponsoring and providing unique opportunities for future research and industry leaders.

"Peter's achievements are a great exemplar of DMTC's ambition to be 'an organisation of choice' for Australia's best young researchers," Dr Hodge said.

National Defence Award - Microbiological Influenced Corrosion

DMTC's Maritime Program has made significant advances in understanding and mitigating the effects of Microbiological Influenced Corrosion (MIC).

Corrosion of Royal Australian Navy platforms has a significant impact on maintenance, downtime and associated costs. DMTC and its research partner, Swinburne University of Technology, and industry partner ASC, assessed Australian naval ports and harbours to identify the specific microbiological species in these waters and how these local conditions influence the development of MIC.

DMTC's project has provided its industry partners and the Navy with an understanding of the correlations between environmental factors and corrosion processes, and is informing more robust corrosion prediction models. Resulting changes to maintenance processes and procedures have led to enhanced operational capability of Defence platforms, increasing availability while reducing sustainment costs.

Defence SME Award - Advanced Surface Coatings

A third DMTC nomination, which was shortlisted for final consideration, but ultimately unsuccessful, was for DMTC's leadership of collaborative technology development efforts to achieve advances in thermal spray technologies.

DMTC worked with industry partners MacTaggart Scott Australia and United Surface Technologies and research partners Swinburne University of Technology and the Defence Science & Technology Group to develop and characterise high velocity oxygen fuel (HVOF) coatings for marine applications.

The project has developed industrial capability across an in-country supply chain of SMEs to perform tasks that historically have been performed overseas. The project has demonstrated that HVOF can be used to apply single-layer, carbide-based coatings to naval hydraulic components, and that these coatings offer improved performance and cost reductions over current coating solutions.

The benefits of this innovation include the option to repair – as opposed to replace - key marine hydraulic components of naval platforms. This promises significant savings to Defence in through-life (sustainment) cost of ownership and improved in-service availability of platforms.

The project has also shown that these coatings can be applied to new components to enhance their biofouling performance and corrosion resistance.

Minister launches DMTC space sensor program

DMTC's new program to develop and enhance Defence capabilities in the space domain has been officially launched by the Minister for Defence Industry, the Hon Christopher Pyne MP.

Speaking at the International Astronautical Conference in Adelaide on September 29, Minister Pyne said the first round of the High Altitude Sensor Systems (HASS) Program would include four projects, with work expected to commence by the end of 2017.

The HASS Program will specifically focus on the development of miniaturised sensor components and on-board processing of sensor data for small Unmanned Aerial Systems (UAS) as well as micro-, nano-, and cube-satellites (with a payload capacity of up to 5 kilograms).

Leveraging an initial CSIRO investment of \$2.7 million, a total program of work valued at more than \$6 million over four years is envisaged.

Technical and strategic-level Advisory Groups have been established for the Program, with Dr Kimberley Clayfield, Executive Manager Space Sciences and Technology appointed Program Leader on secondment from CSIRO.

For more information on the HASS Program, [click here](#).

DMTC was established and is supported by the Australian Government's
Defence Future Capability Technology Centre (DFCTC) initiative.

Visit us online www.dmtc.com.au

Ph. (03) 9214 4447