

Connection

Issue 54 • December 2020

The official magazine of  **Composites**
Australia

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OBITUARY

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allnex is the market leader in the manufacturing and distribution of composite materials in Australia, New Zealand and the Pacific Islands. We are the largest and only local producer of composite resins such as gelcoats, flowcoats, and unsaturated polyester and vinyl ester resins.

Our materials are used in a diverse range of composite applications and products such as boats, swimming pools, truck bodies, tanks, roof sheeting, pipelines and many more.

We pride ourselves on offering the region's most comprehensive product portfolio and end-to-end service ranging from research and product development to application advice and ongoing technical support.

Our local R&D operations are complimented by our global innovation network. By listening to our customers, identifying trends in the market place, and understanding the

specifics of our customers' challenges, we make sure that we undertake development activities that deliver commercially viable solutions.

Globally, allnex is a leading producer of coating resins and additives for architectural, industrial, protective, automotive and special purpose coatings and inks with an annual revenue of €2.2 billion.

With 33 manufacturing facilities, 23 research and technology support centres and 6 joint ventures, the allnex group is present on four continents and serves customers in over 100 countries.

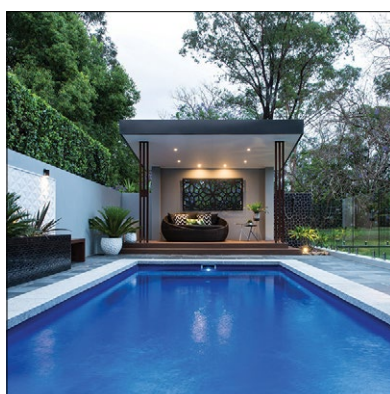
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Aerial Image showing the pools backyards in Canada.
Source Shutterstock



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Publisher:
Kerryn Caulfield
Chief Executive

Editorial inquiries:
kerryn@compositesaustralia.com.au

Advertising inquiries:
Kerryn Caulfield

Design:
Stefan Morris
stefan.morris@smasheddesigns.com.au

Connection Magazine

is the official magazine of Composites Australia Inc.
ABN 28 611 244 813

Next issue: February 2021

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Kerryn Caulfield
Composites Australia Inc.
0412 556698
admin@compositesaustralia.com.au
compositesaustralia.com.au

President's Letter



Coming to the end of 2020 and looking back on the year that was, it is disconcerting to see how effectively our home lives, careers, businesses and supply chains were hijacked by COVID-19. We have all been challenged in finding responses that will keep our businesses viable and look ahead with hope to a time when the virus is under control around the world. Australian manufacturing has certainly had a spotlight shone upon it as international borders closed, and many of our members have found silver linings in responding to the rapid changes around the world.

Our feature story on the surge in sales for fibreglass pools from both the domestic and international markets is heartening in that it shows a sector that defied the pandemic. The article also quotes Rob Kruber, Managing Director of Summertime Pools, who we last saw featured on the cover of the May edition of this magazine. Rob has since left his job to purchase a manufacturing company in the middle of a pandemic!

The story on pages eight and nine on the global specialty chemicals and performance materials company Hexion's investment in a new facility in Deer Park in Victoria to produce phenolic resins is equally heartening. The new facility is Hexion's single largest global investment in recent times and a reflection of its faith in, and commitment to the Australasian market. Importantly, the plant will provide sovereign industrial capability to a product that has critical safety requirements for citizens of the region.

These articles are followed by a case for automation or at least semi automation through the introduction of collaborative robots (so called Cobots) in small, semi-automated manufacturing cells. Kerry Caulfield

forecasts that the greatest push factor to automate is coming from the skills and labour shortages in our own unique pre and post COVID-19 economy.

Continuing our visionary theme, the pultrusion and pull-winding technology firm Exel Composites has contributed an article on the contribution composite can make to Smart Cities, including the ability to increase data transmission and sustainability efficiency in buildings.

I am sure we are all looking forward to the close of this year and are hoping and planning for a happy and prosperous 2021. As I follow the news from around the world, I am very grateful to know that Australia remains a safe and stable place to live, and that as a country we have all worked together in response to the pandemic. I also want to acknowledge and thank our members in Melbourne and across Victoria, who were especially impacted by restrictions, and am pleased to see business certainty and safety returning.

While international travel may be a bit further off, with interstate borders opening we are feeling very positive that our 2021 Composites Conference will be confirmed, and we will have an opportunity to gather in Toowoomba in April 2021 and discuss all things composites. Until then, have a safe holiday season and I hope to see you all in the New Year.

Leona Reif
President

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Domestic and global surge in demand for Australian made pools

Written by Kerryn Caulfield, Executive Manager of Composites Australia Inc.

For most of us in business, the Doomsday clock started ticking when Prime Minister Scott Morrison declared the COVID-19 outbreak a national pandemic on 27 February and the World Health Organisation a global pandemic on 12 March 2020. Fear was palpable in March. April was bleak. But figures from the Australian Bureau of Statistics show an increase in expenditure on hardware, building and gardening supplies during the country's lockdown, peaking at \$2.12 billion in May. Pools and spas were amongst the biggest winners. They not only tick the fitness and home renovation boxes, they also offer a safe option for the 'staycation' holiday model and business is booming accordingly.



ALT fibreglass swimming pool – Caprice

Zel Medak, Regional Business Director (ANZ), allnex shared the company's early COVID journey: "At the beginning of the COVID pandemic we were extremely concerned by the unknown. Our region, our markets and our business faced a major health and business crisis never previously encountered. The COVID lockdowns had an immediate negative impact on demand coupled with strained inbound supply chains. We activated our crisis management and business continuity plans, we quickly reconfigured our business for a COVID safe work environment and focussed on ensuring supply security to our customers. The message from our customers was clear – security of supply was their major priority particularly given problematic and delayed offshore supply chains.

Surprisingly by the end of May, demand started to recover quickly and by mid-year we observed a significant increase in market activity. Driven by a change in consumer spending preferences, towards home improvement and leisure activity, we realised a significant demand increase from the swimming pool segment. Subsequently the demand for Aquaguard gelcoats has been at elevated levels since the middle of the year. We're heartened that Australian consumers have chosen to invest in major purchases such as swimming pools – all of which contributes to the health of the nation and secures jobs for Australians."

Confirming the increase in production, the Australian Bureau of Statistics recorded imports of fibreglass for the June/September quarter up 10% on the same period last year – a heartening statistic given these orders would have been placed at the height of the pandemic. An even greater increase is expected for the October/December quarter.

Lynley Papineau, Managing Director at Aquatic Leisure Technologies (ALT), producer of the brands Aqua Technics, Buccaneer Swimming Pools, Sapphire Pools, Quantum Composite and Riverina Pools pools, says: "In WA, consumer sentiment is running very high off the back of the resurgence of the mining, resource and construction sectors. International travel bans have kept people in the state and we dodged the worst

of the pandemic. Right across Australia, people are now looking to invest in their homes and lifestyle. As a result we've experienced close to 50 percent growth in recent months." Though cautiously optimistic about the future, Lynley qualifies the growth as coming from a lower base than the eastern states given that the WA pools and spas economy had shrunk over 40 percent since 2015.

Rob Kruber, Managing Director of Summertime Pools – which is also delivering nearly three times its usual production – concurs. "I don't think this is a bubble. Consumer confidence is real and likely to last for at least a couple of years." Since featuring on the cover of the May edition of this magazine, Rob acquired Summertime Pools which manufactures in Swan

ALT Jandacot, WA
production site with
staff and pool display



Hill - 350 km north of Melbourne. Leaving a job and purchasing a manufacturing company in the middle of a pandemic may seem counterintuitive, but Rob saw the opportunity. "People naturally cocoon in uncertain times. They spend more time at home and invest in their homes which is usually their biggest asset."

Australia has the highest rate of pools per capita in the world. Of the usual estimated 25,000 new in-ground pools built each year across Australia, 65 to 70 percent are now made of fibreglass, an increase from five percent during the 1980s when concrete and/or vinyl liner were the materials of choice. In WA, the market share of fibreglass pools is even higher at an estimate of up to 80%. Raw material volumes mean that the pool sector consumes the most amounts of composite material inputs of any composites sector.

Fibreglass was the original enabling material to build transportable backyard swimming pools that were quick to install and easy to maintain. Most of the industry pioneers founded their companies over 40 years ago with a spirit of enterprise and 'can do' resourcefulness. Competition drove innovation in pool shapes and finishes. Maintaining and growing market share necessitated investment in pool shell technology and material inputs for unique pool finishes and colourfast colours. Manufacturing, marketing, franchising, installation and servicing networks were developed in parallel.

In addition to large purpose-built factories, Australian pool manufacturers have built a sophisticated network of well-trained builders and solid dealer networks. Market share, quality and consumer confidence in the industry has advanced through collaboration with state governments and Standards Australia to develop a strict regulated framework for the construction, safety, installation and management of pools and spas. In some states (excluding WA) pool installers and inspectors require a licence to operate. Through Swimming Pool & Spa Association (SPASA), the sector delivers a comprehensive training and certification program for installation, inspection, repairs and maintenance, as well as landscaping and safety. Developed to fortify the domestic market, this comprehensive system is now termed "the Australian model." A model that is both exportable and attractive to offshore interests, particularly to North America where the market for Australian designed and made pools has been growing steadily for some years.

Lynley Papineau says that every year ALT swimming pools travel thousands of miles to destinations all over the world. Indeed, 60 percent of ALT's production now leaves WA for either the eastern states or overseas.



"The reason for our international success is the quality of our products. Our commitment to stringent quality controls has been recognised throughout the world and is the reason why Aqua Technics is WA's number one exporter of pre-fabricated swimming pools," says Lynley.

Chris Meyer, opening Narellan Pools a new state-of-the-art manufacturing facility in Hamilton, New Zealand

In mid-2019, Latham Pool Products, North America's largest manufacturer of in-ground residential swimming pools, made a strategic investment in Narellan Pools. In the same year, Narellan Pools opened a new state-of-the-art manufacturing facility in Hamilton, New Zealand to make pools for the NZ market and the South Pacific. Chris Meyer, Narellan Pools group managing director, projected at the time that the plant would build 500 pools across the North and South Islands over the first 12 months.

Established more than 45 years ago, Narellan Pools began as a small, fibreglass swimming pool manufacturing business in Sydney's south west. Today, Narellan Pools has a network of qualified pool builders over 70 regions across Australia, New Zealand and Canada, with a global presence that extends into the South Pacific, Europe, North America and Asia.

While business is great, the increase in output has triggered a new set of challenges. With supply chains already compromised by the pandemic, additional pressure points include transport logistics, and the ceaseless headache of recruiting skilled workers. Always the pragmatist, Rob Kruber counsels: "Businesses can't control the circumstances dealt by the pandemic, but we can choose how we react and manage our way through it while at the same time looking for opportunities."

Hexion backing Australian manufacturing

Written by Kerry Caulfield, Composites Australia Inc.

The global specialty chemicals and performance materials company, Hexion is backing Australian manufacturing with its recent investment in a new facility in Deer Park in Victoria to produce phenolic resins. Construction of the new reactor and associated infrastructure is proceeding well and is expected to come online in the fourth quarter of 2021.

“Our business model is to deliver value to our customers through operational excellence, customer intimacy and product leadership. For Australia, we determined that it made strategic and financial sense to build a production facility close to our customers to ensure security of supply,” says Rob Schmidt, Hexion Vice President and Managing Director, Asia Pacific. “The new facility is Hexion’s single largest global investment recently in the region and a reflection of our commitment to the Australasian market. Importantly, the plant will provide sovereign industrial capability to a product that has critical safety requirements for citizens of the region.”

Phenolic resins can deliver superior fire, smoke and toxicity properties compared to other polymeric matrices for fire-resistance applications. The self-ignition temperature of the phenolic resin is approximately 600°C and the limiting oxygen index (loi) is in the range of 40–49%.

Phenolic composites are largely used in aircraft interiors, mass transit vehicles (buses & trains) and increasingly in building materials for commercial, institutional and residential applications. It is the latter market that the investment is initially targeting. When used in cladding and insulation materials, phenolic resins meet the National Construction Code.

Hexion's new production facility in Deer Park in Victoria



Processing options and properties of CELLOBOND ULEF resins

Process							Product	Properties		
Pre-Preg	SMC/BMC	Pultrusion	VI	VARTM	RTM	HLU		Free HCHO (%)	Viscosity (25 °C, cps)	Solid Content (%)
		•	•	•	•		CELLOBOND J2027 X01	<0.1	220 cp	72
•	•	•					CELLOBOND J6021 X01	<0.1	2000	77
						•	CELLOBOND J2042 X01	<0.1	800 – 1800 cp (high shear) 2000 – 5400 cp (low shear) IOT = 1.7 – 3.8	73

Processing options and properties of CELLOBOND ULEF resins

Property	Unit	Composites made with CELLOBOND J2027 X01
Density, ISO 1183-1	kg / m ³ x 10 ³	1.43
Tensile strength, ISO 527-4	MPa	115
Tensile modulus, ISO 527-4	GPa	11.4
Elongation at break, ISO 527-4	%	1.63
Flexural strength, ISO 14125	MPa	222
Flexural modulus, ISO 14125	GPa	9.9
Izod Impact Strength at standard atmosphere, ISO 180	kJ / m ²	66
Izod Impact Strength at -10 °C, ISO 180	kJ / m ²	94
Charpy Impact toughness at standard atmosphere, ISO179-1	kJ / m ²	75
Charpy Impact toughness at -10°C, ISO179-1	kJ / m ²	85

Phenolic composite (infused) 4 mm panel with CELLOBOND J 2027 X01 + 5% PHENCAT 382 40% CSM – Combination Mat - CSM

They replace Polyethylene (PE) core cladding, the safety risk for which was catastrophically demonstrated by the Lacrosse building fire in Melbourne in 2014, and the devastating Grenfell Tower fire in London in 2017. The principal issue with the use of PE core cladding on buildings is that the polyethylene core is highly combustible. Independent research commissioned by CFMEU Construction and conducted by Equity Economics (2019) found that over 3,400 residential apartment buildings in Australia have combustible cladding and that the rectification costs will amount to \$6.2 billion.

Hexion leveraged its global engineering team to design the cutting-edge facility which is being equipped with state-of-the-art safety systems that comply with Australian major hazard legislation, said to be one of the most stringent in the world.

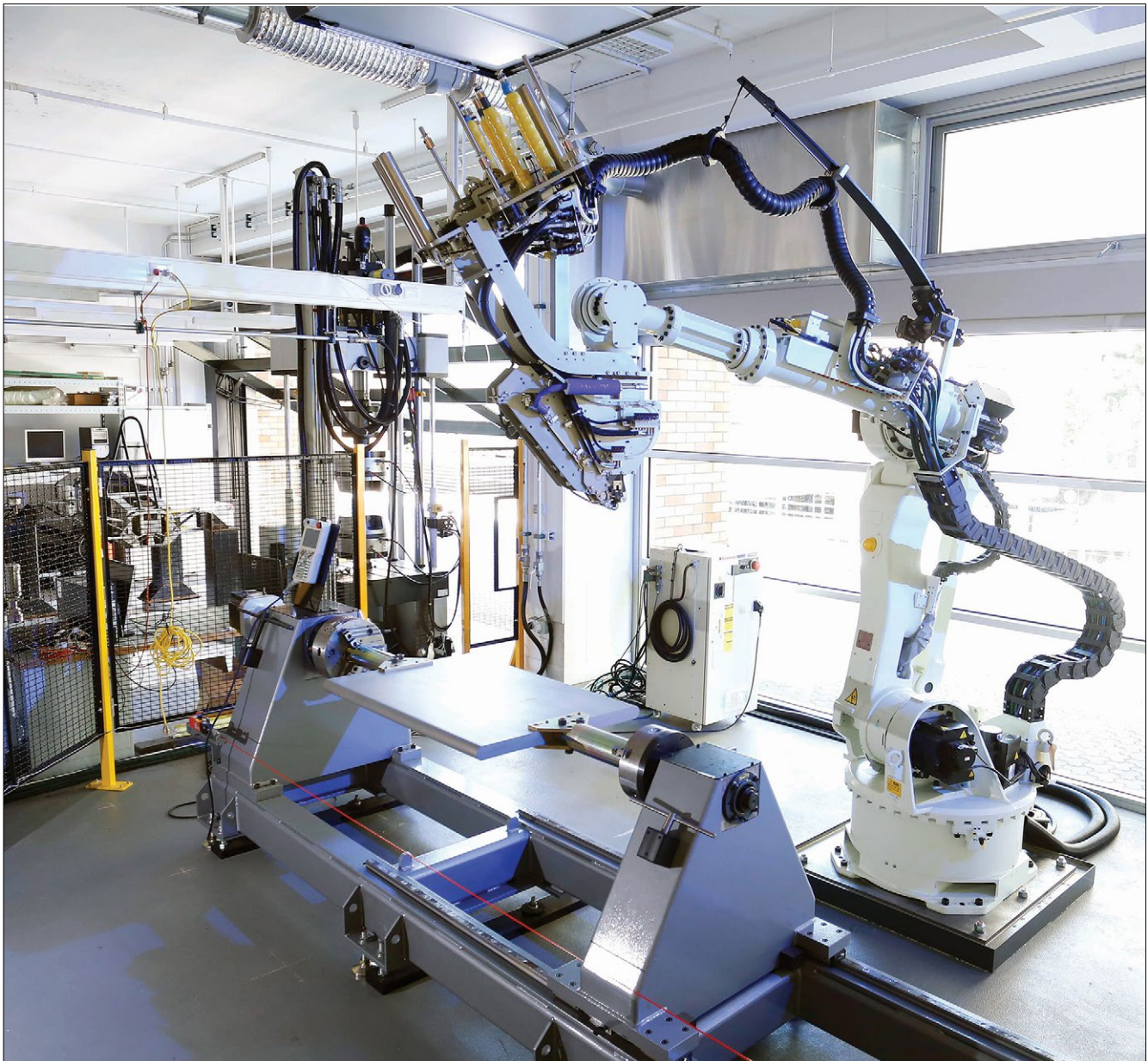
The resin is marketed under the Hexion brand name of CELLOBOND™ and leverages phenolic resin technology. CELLOBOND ultra-low emitting formaldehyde (ULEF) family of resins further reduce formaldehyde emissions during composite production without compromising fire-safety performance and without additional fire additives or intumescent gelcoats. Hexion recently announced the sale of its phenolics business globally, with the exception of its operations in Australia/New Zealand.

A composite panel made from CELLOBOND ULEF can weigh up to 50% less than aluminium and up to 80% less than steel. It can be used in a number of composite production systems including, vacuum infusion, vacuum assisted resin transfer moulding (VARTM), hand lay-up and prepreg processing.

A case for automation in composite manufacturing

Written by Kerry Caulfield, Composites Australia Inc. (Legend)

There has been a lot written about automating the process of forming composite components and products. The reasons to consider automation are compelling and include assured gains in product quality and reliability, material savings, improved cycle times, increased employee safety, and reduced emissions and wastage. Despite positive prophecies, Australian SME manufacturers are often reluctant to invest in the next generation of technology citing reasons such as slim domestic markets and an uncertain economic climate.



Above and right. Robotics at UNSW: multi-axis robot and spindle system for maximum control over fibre trajectories and part geometry as well as heads for laying parallel thermoset and thermoplastic prepreg composite tows.

But the greatest push factor to automate is coming from our own unique pre and post COVID-19 economy. The pre COVID-19 labour market was already tight. Our own Industry surveys found that most composite companies were experiencing a skills and labour shortage, the reasons for which are multifaceted. Apprenticeship enrolments and completions across the three main VET qualifications used by composite companies have fallen steadily in all states since 2007. In some states there were no completions in recent years. Companies complained about the barriers to employment and poaching of qualified staff. The Australian government's Skilled Migration Program that was previously an option to backfill vacancies, has been tightened and COVID-19 travel restrictions have largely closed off our borders.

Transformational infrastructure projects such as the \$16 billion WestConnex project in NSW and the \$11 billion Melbourne Metro Tunnel in Victoria, were also gobbling up workers, targeting trades-qualified manufacturing workers and apprentices. In WA, strong prices for key commodities and increasing investment is also driving a mini resources boom which is absorbing trade labour attracted to 'North West' wages that manufacturers are unlikely to match. Higher wages offered by the renewable energy sector are also competing for workers. Whatever the reason, for some years there has been a shallow pool across the country from which to employ skilled composites technicians. But the post COVID-19 labour market is likely to be even tighter.

Investing in infrastructure that stimulates job creation is usually the first set of measures governments choose

to kick-start the economy. Infrastructure projects absorb displaced workers relatively easily, and projects can target regions and towns that are most affected. The COVID19 Economic Recovery Plan in the 2020-21 Federal Budget included an increase of \$10 billion in the infrastructure investment pipeline to a total of \$110 billion over ten years. The 'use-it-or-lose-it' policy encourages the states to spend by providing more funding for those that can bring forward 'shovel-ready' projects. While this national suite of multi-billion projects is important, the likely result will be to induce trade workers away from other industries, with manufacturing coming off second best.

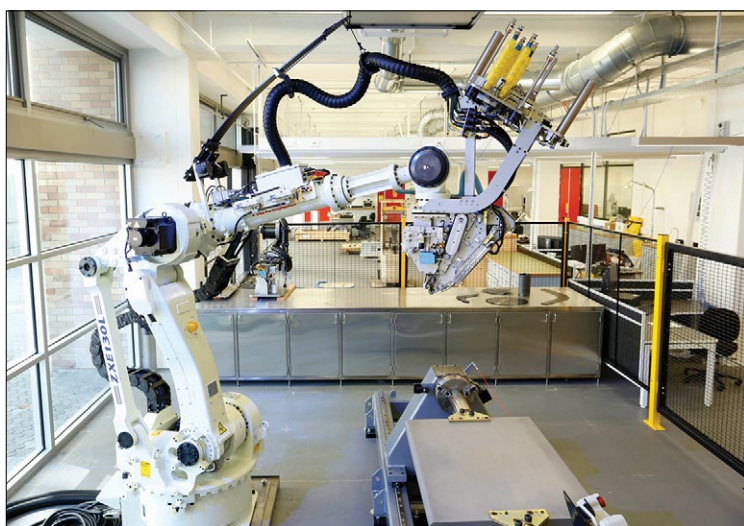
In the composites sector, the push to automate will most likely come from this continuing skills and labour shortage.

Composites manufacturers are already engaged users of computer-aided processes that enhance quality and productivity, such as CNC machines, Computer Aided Design (CAD), 3D printing and similar enabling technologies. For companies producing repeatable componentry and products, the options to further automate could include water-jet cutters, robotic gelcoaters and chopper guns, and automated cutting equipment fitted with PLCs (Program Logic Controls).

Wayne Walker, Operations Manager for Pathfinder, the specialist manufacturer of computerised cutting machinery for flexible materials says that business is booming. "In Australia, accelerated depreciation and record low interest rates are making automation more affordable than ever before."

The ARC Training Centre for Automated Manufacture of Advanced Composites (AMAC) is based at the University of NSW. AMAC's Director, Professor Ganga Prusty believes that "Australia is a unique and diverse market for composite applications and as such demands locally adapted market driven manufacturing solutions. For this reason, UNSW is planning with its partners an industry-led bid for a **Cooperative Research Centre** for automated composite manufacturing in 2021." The centre already features a multi-axis robot and spindle system for maximum control over fibre trajectories and part geometry as well as heads for laying parallel thermoset and thermoplastic prepreg composite tows.

There is no doubt the ongoing skills shortage, particularly for trades workers and technicians, is a persistent problem for Australian manufacturing and will continue to be the biggest challenge for future growth.



The future workspace for semi-automated composite production

Author: Hannah Dammers

For SMEs, the available automation solutions to achieve cost reductions required for the large scale use of composites are often too expensive and inflexible. To address this impasse, researchers at the Institut für Textiltechnik of RWTH Aachen University, Germany, are developing an innovative workspace for the semi-automated production of textile-based composite components.

High material and production costs that result in increased component cost have for decades inhibited the large scale use of composites. The production cost of a carbon fibre reinforced component which is manufactured by a conventional RTM process is more than 60 percent of the total costs along the entire value chain. [1] Accordingly, it is of crucial importance to reduce the production costs of textile-based composites. This can be achieved, for example, by shortening throughput times or improving quality control and thus increasing productivity; but the most promising approach is to automate production.

Large European companies in aerospace and automotive industries already use automated

processes such as tape laying for composite production. The initial investment cost for these special machines is very high and cost probative for small and medium-sized enterprises (SMEs) which are therefore re limited to manufacturing the majority of their composite components by manual processes. On the positive side, manual processing provides flexibility to react quickly to changes in the market, as well as the ability to produce a wide range of reproducible component geometries and complexities. This is enabled by the great wealth of experience of the employees, who have an understanding of the sensitive, flexible textile materials and who can adapt quickly to new conditions. However, the achievable production speed through manual

Vision of the future workspace for semi-automated composite production



production techniques reduces productivity. In addition, new employees must undergo extensive training of up to two years in order to autonomously produce a component in the re-quired quality and to develop the necessary understanding of materials. Trained employees are rare and vulnerable to being headhunted by large companies in the aviation or automotive industry.

The challenge is to empower companies producing composites to automate their processes with a high degree of flexibility while maintaining the great expertise of the employees, i.e. not to replace it with automation and thus to ensure high component complexity and quality. Collaborative robots - so called Cobots - in small, semi-automated manufacturing cells can be the solution.

To address the challenge, the Institut für Textiltechnik of RWTH Aachen University (ITA) has created an innovative workspace for the semi-automated composite production. The diverse technologies of the smart home area served as inspiration for the smart workspace in which a large number of available sensors and assistance robotics allow highly individual settings to be made at any time and any place. The possibilities of the smart home in which household appliances are networked seemed almost unlimited. Smart refrigerators, for example, are able to automatically monitor stocks and reorder new food online. Smart robotic assistants, such as vacuum cleaners or lawn mowing robots, are able to recognize rooms and randomly follow any possible path.

These technologies and principles are found to be transferable to the production of textile-based composite components. Among others, automatic storage and material delivery to the workspace are conceivable. Or even the use of Cobots, which help workers to drape the highly fragile textile materials by handing out cut-to-size textiles. Research is also being conducted into how human draping movements can be imitated by Cobots to enable the automation of complex component geometries. In this case, the programming of the Cobots is a significant challenge. It is important to simplify the programming so that it can be adapted quickly in order to be able to produce small series in SMEs economically. Furthermore, the development and design of Cobot tools for human-robot collaboration

Wikipedia

Cobots, or collaborative robots, are robots intended for direct human robot interaction within a shared space, or where humans and robots are in close proximity. Cobot applications contrast with traditional industrial robot applications in which robots are isolated from human contact. Cobot safety may rely on lightweight construction materials, rounded edges, and inherent limitation of speed and force, or on sensors and software that ensures safe behavior.

must take into account the very high safety requirements. With the introduction of Cobots, which are equipped with sensors for collision detection, the safety precautions such as fences or light barriers that are common with conventional industrial robots are no longer needed. Accordingly, it is forbidden to use sharp or pointed tools such as needles or knives due to the increased risk of injury.

Besides Cobots, digital assistance systems are also being investigated. These include, for example, laser projection for displaying the correct position of textile layers. Augmented reality using data glasses is also possible to instruct employees or track errors within the process. In order to capture implicit and explicit expert knowledge, the use of voice control is also being researched. For the simplest form of low cost automation, the laser projection, first tests have already been carried out at ITA. Compared to the placement of dry textile layers via plybook, ruler and protractor, a time saving of about 45 percent could be achieved by the use of laser projection. In addition, the positioning accuracy could be increased, which is mainly due to the avoidance of subsequent errors caused by measuring errors in the first layers. It is expected that an increased information content through the use of digital work plans including detailed instructions for workers will further increase time savings and positioning accuracy.

In summary, the smart semi-automated composite workspace is achievable and likely offer a vast number of advantages compared to manual component manufacturing. Expected benefits are the reduction of training times, both for human workers and robotics, the increase of reproducibility and productivity, but also the creation of highly attractive jobs.

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Composites in Smart Cities

Constructing an efficient future

Written by Kerry Caulfield, Composites Australia Inc.

The Smart Cities Plan sets out the Australian Government's vision for our cities, and a plan for maximising their potential. It commits to embracing new technology as well as new materials. These investments ensure that Australia plays its part in cracking the challenging technical difficulties in reducing emissions, the energy use of buildings in our cities as well as encouraging jobs and innovation. Here, Stephen Smith, Head of Asia Pacific Sales and Business Unit Manager at Exel Composites, explores the importance of composites in smart city infrastructure.



The 2018 Revision of World Urbanization Prospects produced by the Population Division of the United Nations Department of Economic and Social Affairs (UN DESA) notes that 68 percent of the world population is projected to live in urban areas by 2050. With more people living in concentrated areas, cities must become more efficient to improve the quality of life for inhabitants and increase environmental sustainability. When not correctly managed, rising numbers of urban residents can lead to housing shortages, traffic congestion and a strain on environmental resources.

Smart cities incorporate technology that connects each component, such as transport and energy, together into a synergistic ecosystem. For reliable, continuous data flow, the use of radio transparent materials will continue to increase. Composites provide an innovative material that allows increased data transmission and increased efficiency of buildings - helping to create a sustainable way of life in the city.

The implementation of a 5G telecommunication network allows more data to be transmitted at a rate 100 times faster than via its 4G predecessor, due to

Exel Composites profiles manufactured through pultrusion and pull-winding technology fabricated into durable urban window frames.

5G's shorter wavelength form. With this in mind, 5G equipment will need to be integrated across the urban landscape in more innovative ways to conceal them from view, while remaining protected against year-round weather changes.

The versatility and durability of composite materials and their ability to be customised into different shapes with various colours and finishes makes creative camouflaging solutions possible. Composites can also be integrated into other parts of smart city infrastructure, such as window cavities and door frames, to help 5G frequencies penetrate buildings.

A key goal of the smart cities movement is to reduce energy usage where possible to use resources more sustainably. Up to 40 percent of energy used in a home is lost through windows. Fibreglass composites are a worthy alternative material for window and door frames due to their thermal insulating properties. Furthermore, composites have a similar expansion rate to glass, forming tight frame structures without leaking problems.

In addition, composites boast high strength and stiffness while being resistant to chemicals and corrosion. Their superior durability means fibreglass window and door profiles can last a long time without replacement and with minimal maintenance, therefore reducing the use of resources to make new materials.

Exel Composites profiles are manufactured through pultrusion and pull-winding technology and are used in window sashes, frames, mullions, door frames, door sills, internal stiffener profiles, and external parts for wood windows, insulating cores for metal windows and doors, internal profiles for fire safety doors, industrial door frames, breaks and thermally insulating stiffeners. Moreover, Exel's products comply with Australia's six star energy rating regulations.

The increasing importance of Radio Frequency (RF) transparent materials for next generation city infrastructure opens up a new market opportunity for the composites industry far beyond the scale of current construction applications. While the total market for composites in the global construction industry was valued at €11.3 billion in 2016, the market for 5G built infrastructure is expected to be worth €160 billion by 2025.

At Exel, they've been manufacturing radio transparent outdoor structures for many years, and expect to see the lightweight, corrosion-resistant and radio transparent qualities of composites helping to

drive data around smart cities today and in the future.

They are confident that composite materials will play an important and growing part in the success of a smart city, and their range of benefits will continue to create durable solutions that help manage assets efficiently

Exel Composites
pultrusion and pull-
winding technology



Gurit® Kerdyn™ Green Sustainable Structural PET

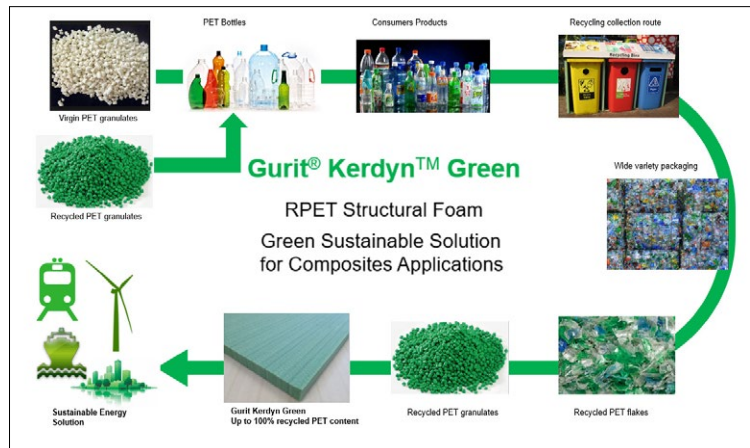
A greener core material produced from recycled PET is available now for the Australian Composites Industry from the new Gurit facility in Queensland.

Gurit® Kerdyn™ Green is a more environmentally friendly, core material developed by Gurit in response to the growing need for a more sustainable structural core material, with stable properties and improved resin uptake performance.

The PET foam is a highly adaptable, recyclable thermoplastic core material with a good balance of mechanical properties, temperature resistance, density and cost, compatible with a wide range of resin systems including epoxy, vinyl ester, unsaturated polyester and phenolic resins. Applicable processing techniques include vacuum infusion, bonding, prepreg and thermoforming.

Gurit® Kerdyn™ can be processed at high temperatures, withstanding high exotherms and offers outstanding chemical resistance, good adhesion, as highly consistent extruded foam, it is ideal for applications in marine, industrial, civil, transportation, wind energy, architecture and construction.

Available in densities ranging from 80 kg/per M3-300.

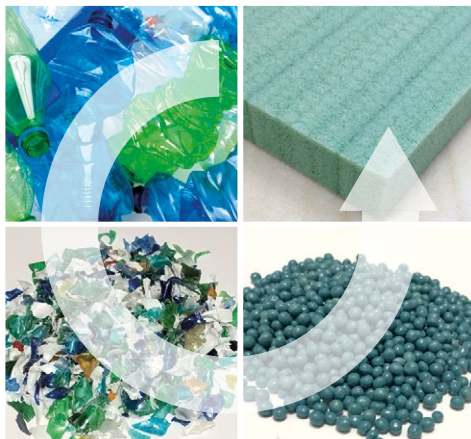


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Vale Robert Peachey 1936–2020

Written by Kerry Caulfield and Michael Hand

Respected industry pioneer, Robert Peachey died recently aged 84 after a short illness



Vale Robert Peachey

Fiberglass (A/Asia) was established in 1951 by Robert's older brother Bruce Peachey. He opened a small factory in Chatswood in Sydney where he produced Fibreglass repair kits and a polyester based surface coating called "Armourglass". At the same time, he was experimenting with sheathing of timber boats and moulding fibreglass products.

In 1955 Bruce merged the business with his father's engineering business and moved to Willoughby in Sydney. Sales of fibreglass materials for repairs to motor vehicles, rusted guttering, boat sheathing and many other unusual applications boomed as well as an increased interest in fibreglass moulded products.

After the death of their father in 1963, Robert and Bruce Peachey purchased the business from the estate and continued to run the business from the

Willoughby address until Bruce's retirement in 1980. Robert bought Bruce's interest in Fiberglass (A/Asia) and was the sole owner and Managing Director of the company for the next 40 years.

In 1976, the business outgrew the Willoughby site and Robert built a new factory / warehouse in Minto, southwest of Sydney. Fiberglass (A/Asia) was in those days manufacturing a range of products including baths and spa's, electrical transformer cabinets, traffic light control boxes, bus parts, furniture, tanks, dinghies & canoes. It also had a team of waterproofing experts covering the building industry in Sydney Metro area. Fiberglass (A/Asia) was also supplying materials to the industry which was now growing at an exponential rate.

The company has survived several boom and bust cycles, a number of commercial assaults and the transformation of reduced tariffs which dramatically changed its manufacturing model. In 2011 Robert expanded the sales division of Fiberglass (A/Asia) by opening two more fibreglass trade centres, one in West Gosford and the other at Seven Hills. In 2018 the manufacturing division was closed with the company now concentrating on supplying fibreglass materials to the industry throughout NSW.

Michael Hand, General Manager for the company worked for Robert for 40 years. According to Michael, their relationship was a unique friendship based on mutual respect. "He was a true gentleman who developed strong and lasting business relationships with customers, suppliers and even some competitors. His ethical approach in business earned him a high level of respect from all that knew him".

While Robert worked from the Willoughby depot in the north of Sydney, Michael works from the southwest Minto site. "For 40 years without fail, we met for lunch on a Friday to talk over the business. He lived for the business and his staff and customers," said Michael.

Until his short stay in hospital during October, Robert was still working the Willoughby trade centre six days a week, assisting customers both technically and physically, still capable of loading 20 kg pails of resin and 30kg rolls of fibreglass into customers' vehicles.

Robert Peachey is survived by his two daughters Jacqui and Trina who are overseeing the company. Fiberglass (A/Asia) is operating as usual with Michael Hand at the helm.



An early advertisement for Fiberglass (A/asia) that appeared in the Sydney Morning Herald in a feature spotlighting early composite manufacturers.



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