Case Study

World-class R&D capability with the University of South Australia
South Australia’s universities have a well-earned and coveted world-class reputation in such fields as science, law, medicine and the arts.

Within the Thin Film Coatings Group of the University of South Australia’s Mawson Institute, this reputation for excellence and innovation is reaching new heights, with the assistance of AutoCRC.

Associate Professor Peter Murphy and his team have worked with the Australian arm of international group SMR Automotive on a unique thin film coating technology for plastic automotive rear view mirrors. This technology has now transitioned from laboratory based R&D through to a commercial product that is now being sold in the international market place.

As a result, this project has provided a unique opportunity for the research group to take its enhanced skills to the Australian market and the world.

SMR’s essentially shatterproof, lightweight mirrors are now being fitted to selected Ford models in the USA.

This is a shining example of AutoCRC assisting an Australian university to work successfully with a local manufacturer, to traverse the challenging, yet richly fulfilling road from concept idea to an unequivocally successful commercial outcome.

But this is just the start of the story.

UniSA has been able to apply the capabilities and skills fostered on the project to undertake research and development for an ever growing range of industries in Australia and overseas.

This has resulted in Professor Murphy being able to develop a research and development capability from modest beginnings to one that now has ten full time staff and 12 research students, with more growth prospects on the horizon.

The investment funding provided by AutoCRC has assisted UniSA to create the substantial research group that is now in place - an impressive team, exceptionally well-equipped to grasp opportunities in their areas of expertise.

“UniSA could see the potential of thin film coatings and its relevance to the manufacturing sector. The support from AutoCRC has undoubtedly contributed to the rapid growth of my research team”, Professor Murphy says.
“The tri-party investment by UniSA, SMR and AutoCRC was the catalyst, the enabler, that allowed us to build the substantial group which is currently in place and is now extending its materials science expertise towards other target products.

“We now have a research group that is developing an international reputation and this is evidenced through an ever growing list of overseas based collaborative partners – both from academia and private industry.

“This investment was the building block, the cornerstone, from which we have built this capability. The funding and facilitation role played by AutoCRC has been crucial in this exercise.

“We have now applied our expertise into other industries and have linked up with additional partners as a result of the work we have done with SMR, and assisted by AutoCRC.

“The Thin Film Coatings Group is now working in many different areas, designing, applying and testing the environmental robustness of this thin film coating technology to a range of surfaces in an ever growing number of applications and industry sectors. This has resulted in several commercially valuable patent applications over the past 5 years.

“We are now working on developing ultra-high reflectivity coatings with application in areas of energy efficiency- for example in LED based lighting applications. Using completely different materials and coating designs to the automotive mirror application, this technology is also relevant to the concentrated solar power industry. In this case, reflective mirrors up to 15 metres in diameter are used to harvest solar energy by tracking the sun from sunrise to sunset. In such applications, every 1% increase in the amount of light reflected is crucial in enhancing the efficiency and financial viability of the power generation facility”.

“There is a huge market for this, especially in Australia, but also internationally,” Professor Murphy says.

As to AutoCRC’s role, CEO Jim Walker explains. “If UniSA didn’t have an industry partner, and they were just doing research essentially off their own bat, it would, in all probability, be that much harder for the research results to be commercialised.

“CRC’s aim to establish a happy marriage between business and universities. And, once the relationship is established, they work to ensure there is an ongoing fruitful association and successful academic and commercial outcomes. This is a win-win situation where the needs of both partners are met”.

“It is clear that the Mawson Institute’s Thin Film Coating group has achieved greatly enhanced capabilities from its work with SMR, and this is very gratifying for us at AutoCRC.”

Professor Murphy says his research group has achieved impressive growth, thanks to the partnership with AutoCRC. Over the past six and a half years the combined investment by UniSA, SMR and AutoCRC into collaborative projects has been in excess of $7.5 million. When you consider the additional in-kind investments from the partners, as well as the cost of establishing a state of the art advanced manufacturing facility at SMR Automotive in Adelaide, more than $20 million dollars has been invested by the project partners. This has resulted in the up-skilling of SMR’s workforce in addition to the creation of new manufacturing jobs.
“We had to create a reputation for delivering outcomes and we’ve done that. And now the work is coming to us.

“The big change is that over the past year instead of us having to go and seek out new research opportunities, these are now coming to us.

“We have been able to trade on our enhanced reputation, which has been greatly strengthened by the SMR project and our association with AutoCRC.

“We have gone from having just one external partner to around a dozen currently. And these are all very significant, well established Australian and international businesses.

“The SMR and AutoCRC experience provides overwhelming evidence that research and development is crucial for the automotive industry in Australia,” Professor Murphy says. “Our automotive component suppliers need to diversify to become globally relevant, and not be so highly dependent upon the consumption of product by the Australian automotive manufacturers.

If we manufacture high value add, in-demand product in Australia, we can continue to play a role in the global automotive industry”.

The UniSA and SMR project has allowed the synergies and connection between science and industry to be harnessed, and for real and pragmatic benefits to be identified and developed, and moved to the broad sunlit uplands of commercial life.

For more information on this project contact:

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