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ACN 109 200 900

AUSTRALIAN SECURITIES EXCHANGE ANNOUNCEMENT

16 November 2020

EDENPLAST™ – EDEN and UQ AWARDED

FIFTH AUSTRALIAN RESEARCH COUNCIL GRANT FOR A\$376,518

HIGHLIGHTS

- Eden and University of Queensland (“UQ”) awarded A\$376,518 Collaborative Research Grant by the Australian Research Council (“ARC”).
- Project to develop a new production method for CNT enriched thermoplastic composites that could increase the performance benefits already demonstrated by EdenPlast® CNT infused polymers.
- This is the fifth consecutive ARC grant awarded jointly to UQ and Eden.

DETAILS

Eden Innovations Ltd (“Eden”) is pleased to announce that the Australian Research Council (“ARC”) has awarded Eden and the University of Queensland (“UQ”) a fifth consecutive ARC Linkage Research Grant worth A\$376,518, payable over three years, to help fund the development on a new production method of carbon nanotube (“CNT”) enriched thermoplastic composites.

Both Eden and UQ will also contribute to the total cost of the project. These ARC linkage research grants are highly sought after and the process is extremely competitive.

The new project aims to develop a method to produce novel drawn polymer fibres incorporating aligned carbon nanotubes within the polymer. Such polymer fibres will show significant directional strength and stiffness and can themselves be used for reinforcing thermoplastics to make high performance, “smart”, composites. There will specifically be focus on recyclability of the CNT reinforced fibres.

This development could have significant commercial and environmental benefits as existing thermosetting composites are not readily recyclable and require high levels (>30%) of reinforcing fibres.

The targeted outcomes of this project, if successful, will be a novel technology for making high strength and stiffness polymer fibres reinforced with Eden’s CNTs, expanding their potential use in thermoplastic composites. These new polymer fibres could also enable down-sizing of high-volume products that may well be suitable for use in high value automotive or aerospace products.

At the end of this new project Eden and UQ will have been continuously collaborating for more than 15 years.

The earliest project resulted in the development of the underlying pyrolysis process by which Eden produces hydrogen and carbon nanotubes (CNT) or carbon nanofibres from natural gas, without producing CO₂ as a by-product.

The subsequent projects have led to the development of EdenPlast[®], Eden's CNT enriched polymer product (see Figure 1). The CNT are also a key component in Eden's already commercialised EdenCrete[®] liquid admixtures for concrete.

Eden holds at least one patent related to each of these products.



Figure 1. EdenPlast[®]- carbon nanotube infused polymer

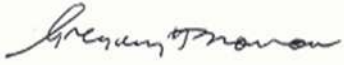
EdenPlast[®] can be produced with a large range of final CNT concentrations, either directly or from dilution of a pre-made high CNT concentration masterbatch. Significant increase in stiffness and strength is seen at very low CNT concentrations, < 1%, whereas interesting secondary effects are observed as the CNT concentration is increased. The masterbatch production method for this product has already been developed and undergone multiple optimization and scale-up steps. A high CNT concentration masterbatch is currently being tested by a Japanese company.

The commercial range of applications for EdenPlast[®] include the following:

- Automotive, aerospace, packaging.
- Batteries - cathodes.
- Non-corroding reinforcing material.

CONCLUSION

This fifth ARC research grant to fund research into further improving EdenPlast[®], CNT infused polymers, will enable important further research into possible ways to increase the already significant benefits that EdenPlast[®] has already demonstrated.



Gregory H. Solomon
Executive Chairman

This announcement was authorised by the above signatory.
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