

UofA's Formula SAE Annual General Meeting was held at the end of September followed by our Annual Cage Clean-up (ACC'up). We had many new faces out to the AGM, where the team presented the year's goals and plans as well as answered many questions that new members had. There was plenty of enthusiasm and we look



forward to having new members step up to the challenge of learning the car and taking over leadership roles from graduating members. The following Saturday morning saw a great turnout for the ACC'up, (the "cage" is the work space dedicated to student groups and is situated behind a chain-link fence under ECERF) including a representation from most of the other student groups. We pulled out absolutely everything so that we could sweep, vacuum, scrub and hose down the whole work space.

Design this year was based off what we learned last year, so that things that worked remained similar and things that didn't were fixed, this mindset was intended to speed up the design process and minimize uncertainties. After not being able to compete last year, the team decided on a slightly more conservative approach in exchange for more testing time and improved reliability. The team has now successfully passed our Preliminary as well as our Critical Design Review, which means we have approval to commence fabrication. Priority number 1 is the chassis, which will be made by machining a male "plug" (a male mold that resembles the shape of the chassis) from MDF and then creating a fibreglass female mold from the plug. With this female mold the chassis will be made using TeX-treme® carbon fiber.



Sponsor Spotlight

TeXtreme®

Founded in 2003 and based near Chalmers University of Technology in Sweden, Oxeon is the manufacturer of TeXtreme® - a new kind of carbon fiber fabric designed for incredibly light weight applications, such as Formula 1 and therefore, Formula SAE. Traditional weaving techniques of carbon fiber tows (a strand of carbon fibers) result in varying degrees of crimp in the fiber, which reduce the ultimate strength of the composite part as well as increase the volume of resin necessary, therefore, increasing weight. TeXtreme®, on the other hand, minimizes the crimp in the fibers by spreading out the tow into what is called a tape or a spread tow – this is illustrated in the image below, courtesy of Oxeon. Another technology that Oxeon is known for is the ability to make fabrics with custom weave orientations. Normally a fabric has fibers running the length of the roll as well as 90° to it, but with TeXtreme's® $\pm\alpha/\beta$ technology, spread tows can be oriented at a specified angle to each other in order to minimize both customer production time and waste.

The UofA's team was given some test fabric from Oxeon for last year's car in which we made the seat and intake plenum. Both parts turned out very well, both structurally and aesthetically, and after our request this year for a full fabric sponsorship, Oxeon gratefully obliged. Since TeXtreme® is only made as a dry fabric, Axiom Materials, who is familiar with toll coating TeXtreme®, offered a great discount to us to prepreg our material with an appropriate resin.



TeXtreme®

Spread Tow Fabrics for ultra light composites

- 20% lighter composite products
- Superior Surface Smoothness
- Optimized Reinforcement Solutions

<div style="background-color: #008000; color: white; padding: 5px; margin-bottom: 5px;"> TeXtreme® carbon fabrics (Spread Tow) </div>  <p>1 The Spread Tow structure makes it possible to achieve thinner laminates.</p> <p>2 Straighter fibers with reduced crimp optimize and strengthen the composite.</p>	<div style="background-color: #008000; color: white; padding: 5px; margin-bottom: 5px;"> Conventional carbon fabrics (Regular tow) </div>  <p>3 Lower crimp reduce the amount of excess plastic, thereby minimizing weight.</p>
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Thank you to all of our continuing sponsors and a special welcome to JV Driver, Altair Software, Evonik Industries and Axiom Materials!

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