



Well, the story should actually start several years ago at a winter NAMM show, 2016 I believe. Barry was manning a booth on behalf of ALMA, and trying vigorously to revive a once great association that was on the fore front of the pro audio community. I ran in to Barry then at his booth and we talked for a bit. He made it clear what ALMA was trying to do, and told me to make sure Chris Rose knows that “Barry’s coming for us”. Eminence quickly re-joined the revitalized ALMA organization, and within a couple of years, an ALMA Board of Directors opening was available. I nominated Jerry, to Barry, for the position. Of course, Jerry was widely recognized and easily voted in. He became an active member of the board and we (Eminence) began attending AISE, once again.

About 3 weeks before the 2018 AISE, Martin Tureson from Oxeon reached out to Rob Gault through LinkedIn about a new method of producing carbon fabrics that can be used to make components that are thinner, lighter, and stiffer than any current carbon fiber components. Knowing our ALMA involvement and the potential new technology that was going to be unveiled, Rob quickly forwarded Martin over to the product design group. Martin was preparing to discuss this new material/process with potential new customers, first at AISE then later in the week to CES. Thankfully, we were already active members attending the AISE event which put us in a prime position to be one of the first exposed to this ground breaking new advancement in materials. We met with Martin at AISE after lunch on January 6th 2018, that’s the date he exposed us to the Textreme material properties. Having extensive experience designing compression drivers, it was a total Eureka moment when we saw the stiffness to weight ratios, speed of sound, and acoustical figure of merit those values equate to. It was love at first sight, but at the same time, that feeling that you know it’s just too good to be true, was there as well. There had to be a catch, something had to be wrong with it, so we asked about cost. We fully expected it to be significantly more expensive than Titanium, but when Martin revealed this material to be a fraction of the cost of Beryllium, we were giddy. Yes, giddy. It took all the self-control we could muster in order to maintain our poker faces.

We came skipping back to Kentucky, excited of the new information we attained at AISE. We immediately shared a technical drawing with Martin for one of our current titanium domes that we form and use in-house, a one-piece titanium surround and dome type of diaphragm. FEA comparison were performed to give us an idea of the improvement potential that could be realized with their new material. The analyses showed the modes were tamed and significantly increased in frequency, but the Fs increased dramatically as well (because of the insane stiffness to weight ratio). Immediately it was realized that such a high Fs would severely limit the low

frequency extension of the compression driver, so the immediate “perfect” application that stood out for this material, in my mind, was a large format compression driver with composite surround attached, similar to our N314T-8.

The potential was there, so we moved on to validation. Martin sent us some sheets of raw material, and I’ll never forget experiencing that material for the first time. The 5” square of material was unlike anything I’ve ever seen. It was light as a feather with the rigidity of a steel beam. The sound it made from flicking the edge was completely unique. Best way to describe it, it was the sound of something you didn’t think was possible. We made some reeds and began testing, comparing to our titanium material. Not only did we confirm that the bending mode frequency significantly increased, but that’s when we realized the incredible internal damping this material possessed as well. The decay of the material upon removal of the stimulus was on par with what I had seen with Berylliums response to stimulus. It was incredible.

Armed with what we needed to convince ourselves of investment worthiness, we initiating tooling in hopes of being the first company to embrace, promote, and implement this material in to such an application and market. As with any new technology, there are always some things to work out, bugs to fix, issues you didn’t even know would be issues. We worked through those issues with Oxeon and successfully accomplished what we had hoped we could do. It was because of ALTI (then ALMA), that we were one of the first to be exposed to this new technology. This poised us to be the first to launch a pro sound product using this new technology. And let’s face it, in today’s age, if you ain’t first, you’re last.

Thanks,
Matt Marcum
Eminence