

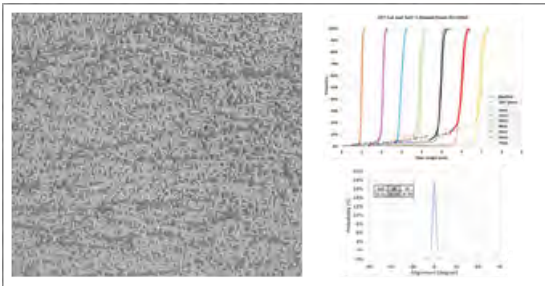


CENTER FOR COMPOSITE MATERIALS
AT THE UNIVERSITY OF DELAWARE

TAILORED UNIVERSAL FEEDSTOCK FOR FORMING

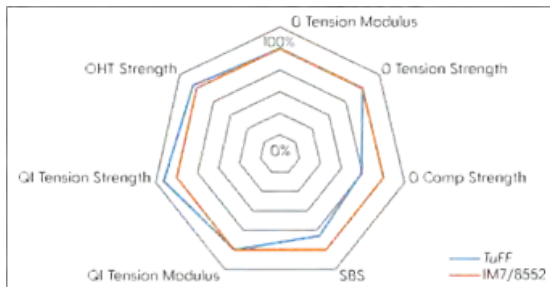
2026

Microstructure



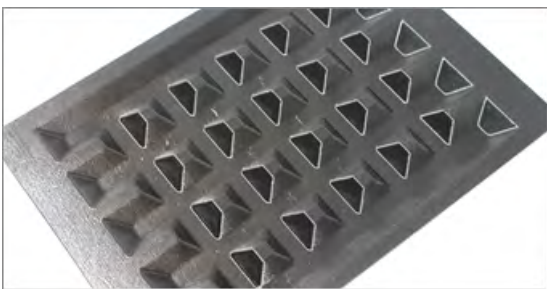
- Alignment: **95%** of short fibers within **5 degrees**
- Up to **63% fiber volume fraction** demonstrated
- Control of fiber length independent of fiber type

Properties



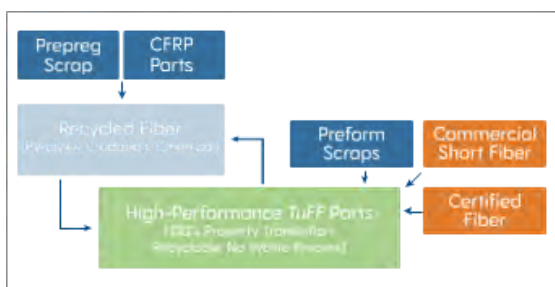
- **~100% translation** compared to continuous fiber
- **Thin-ply** formats available (30 gsm and greater)
- Fiber and polymer **agnostic**

Forming



- **40% bi-axial in-plane** stretch demonstrated
- Dry preforms and consolidated blanks
- Vacuum forming of thermoplastics
- Low pressure and fast cycle times (~1 minute)

Recycling



- Closed loop recycling with property retention
- **Zero waste** process possible
- Fiber agnostic (virgin, scrap, recycled fibers)
- Demonstrated **100% modulus translation** with **60% strength retention**

2019 WINNER ACMA AWARD FOR
COMPOSITES EXCELLENCE (ACE)
Infinite Possibility for Market Growth



WINNER BEST PAPER
SAMPE Baltimore 2019

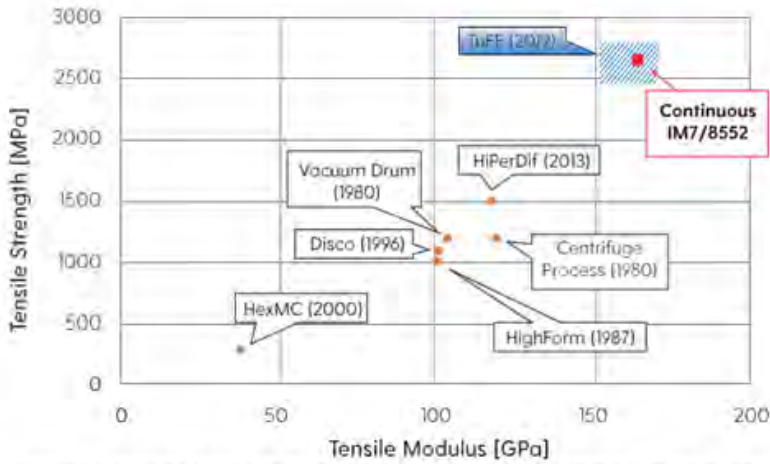


1ST PLACE POSTER
SPE-ACC 2019



2020 SAMPE DELMONTE AWARD
FOR INNOVATION EXCELLENCE





World-Record Short Fiber Properties for High-Performance Applications



250gsm quasi-isotropic [0/90/45/-45]s laminate



Continuous TuFF sheet of Highly Aligned Short Fiber



Unidirectional 0 (top) and 90 (below) laminates with biaxial forming without splitting

This research was developed with funding from the Defense Advanced Research Projects Agency (DARPA). The views, opinions and/or findings expressed are those of the author and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.
DISTRIBUTION STATEMENT A: Approved for public release.

Discovery Development Deployment