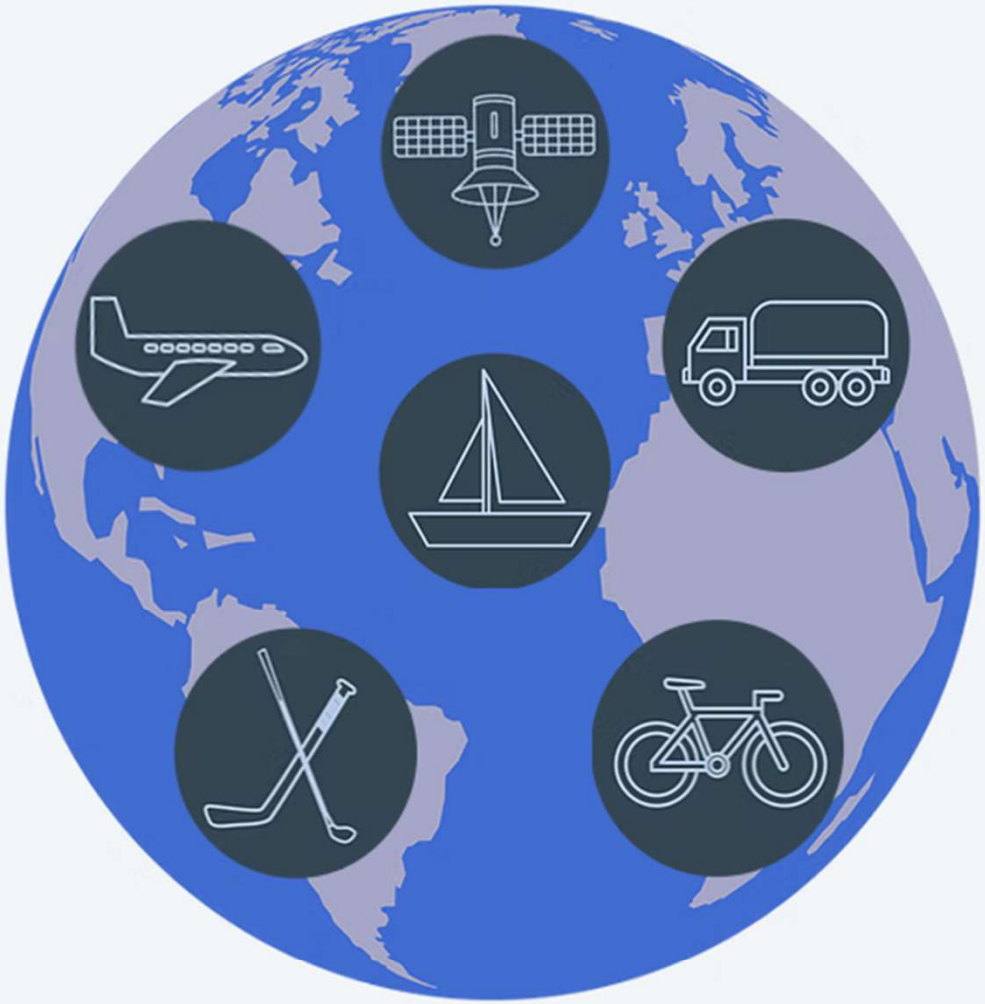
AGILE
ULTRASONICS



Transforming thermoplastic composites into usable structures

WITH PATENTED TECHNOLOGY

Agile Ultrasonics enables continuous ultrasonic welding (CUW) of high-performance thermoplastic composites without energy directors or film layer inserts. This patented breakthrough enables freedom of design and expands material selection options in aerospace, automotive, industrial and consumer applications.

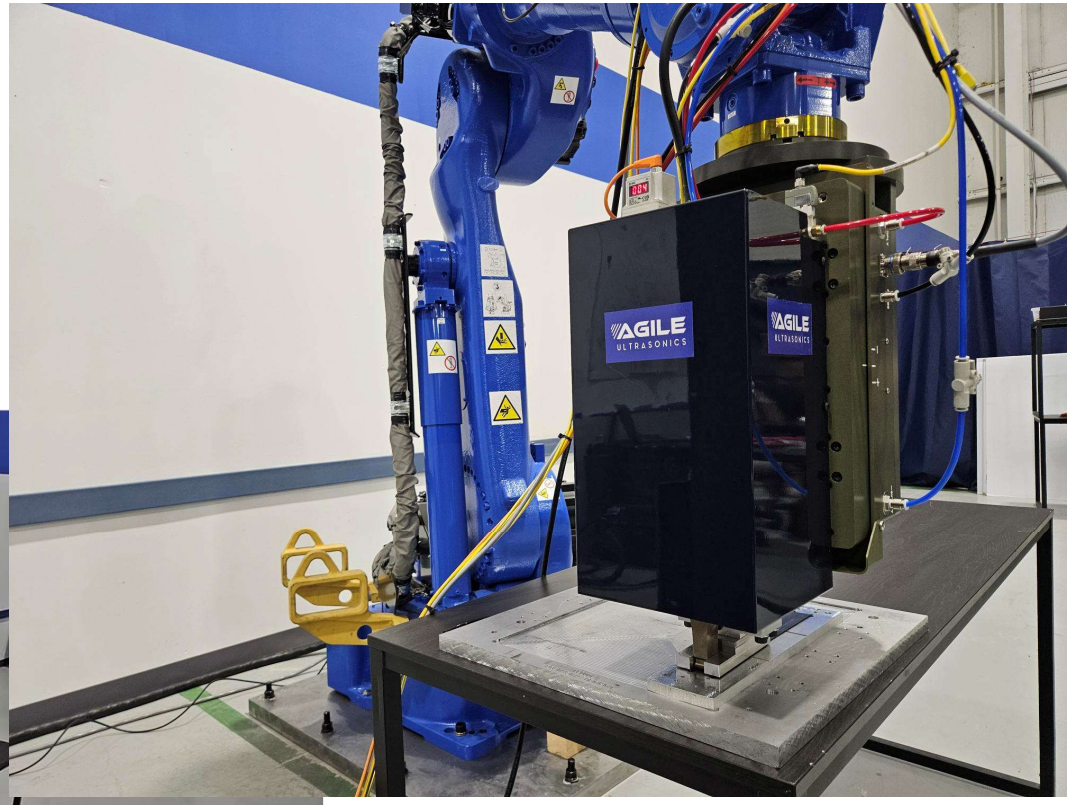
Read the Composites World article about Agile's Structural Materials Joining in Space award from Parallax Research

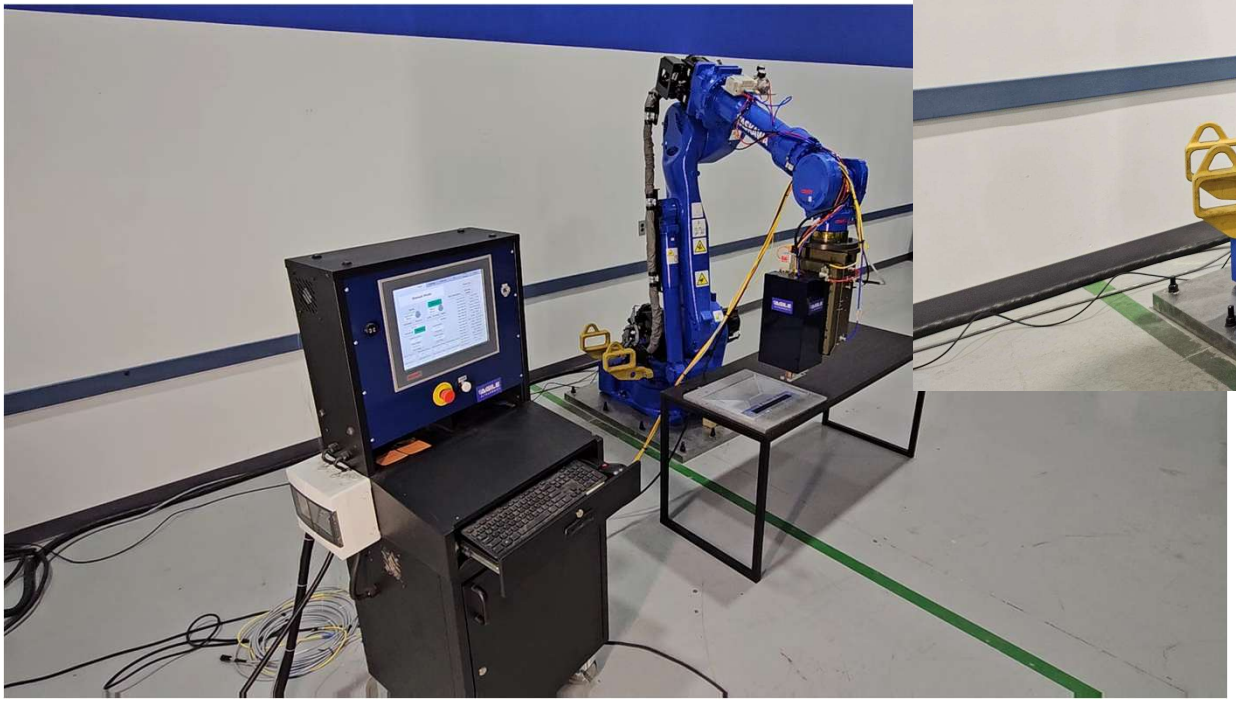
AgileUltrasonics.com
Jim Stratton
614.264.1272
jstratton@agileultrasonics.com

COMMERCIALIZATION

Highly Adaptable End Effector

- Modular unit, system agnostic
- Robot, cobot, ATL, CNC, work cell
- Low forces (45 psi to 150 psi)
- Light weight (45lbs to 85lbs)





Video at AgileUltrasonics.com

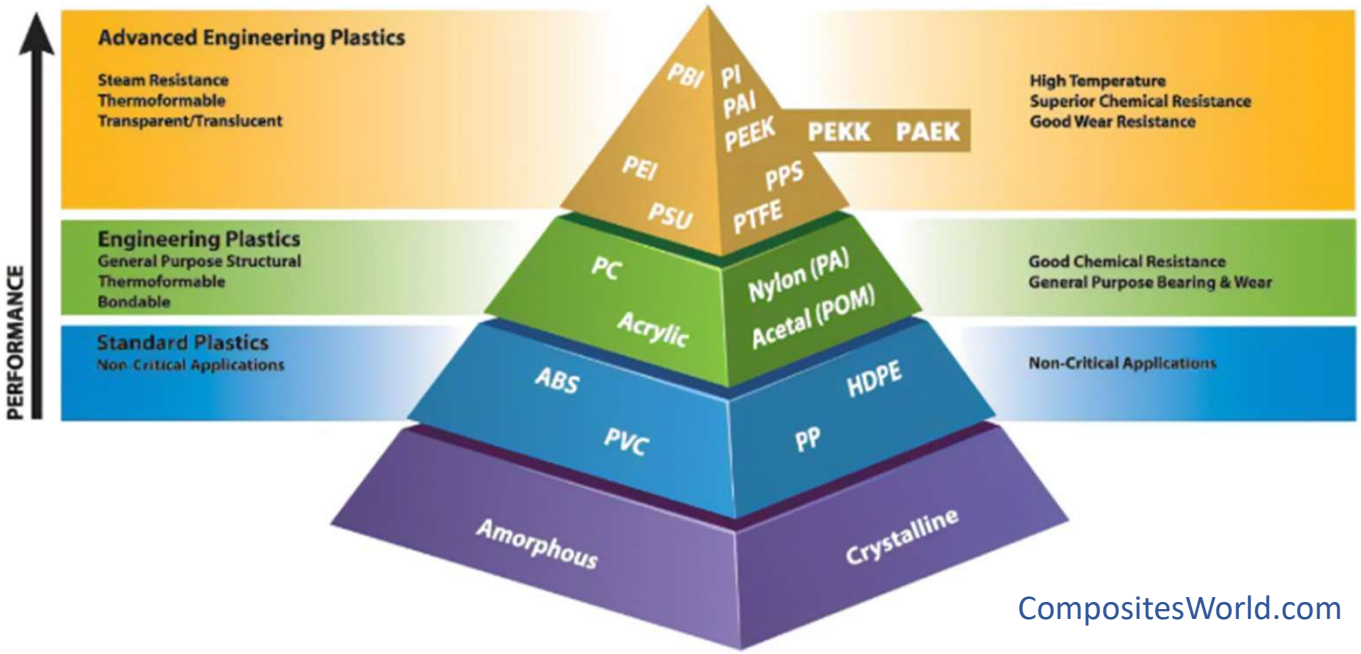
AGILE ULTRASONICS

BREAKTHROUGHS

- Freedom of design, versatility in materials selection
- Focus on high-performance TP composite applications not served by existing ultrasonic OEMs
- Hybrid approach advantageous or complimentary to other forms of welding/joining
- Ambient, low power, continuous operation, can eliminate energy directors or film inserts
- MRL 4, developing curvilinear, closed loop feedback capabilities
- Need industry partnerships

Applicable to:

Prepreg unidirectional tape, braid, preforms and additive materials with nylon, glass or fiber fill

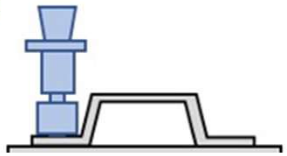


CompositesWorld.com

VERSATILITY

ASSEMBLY

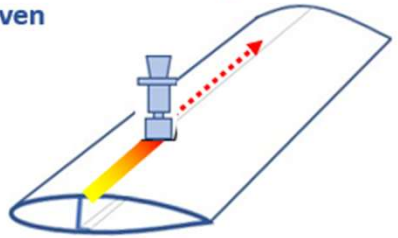
Low-cost high-rate welding



Flexible rapid manufacturing cell

Manufacturing 4.0 compliant robotic cells

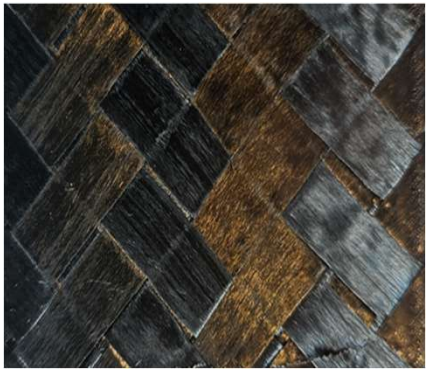
Structural assembly out-of-oven



Rapid forming of complex geometries

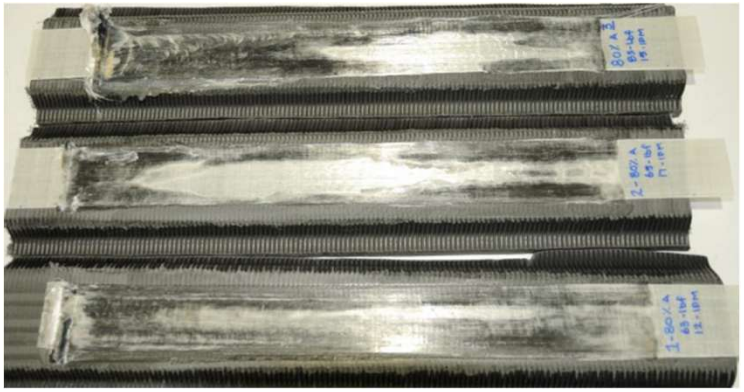
FIELD REPAIR

COMPACTING / DEBULKING



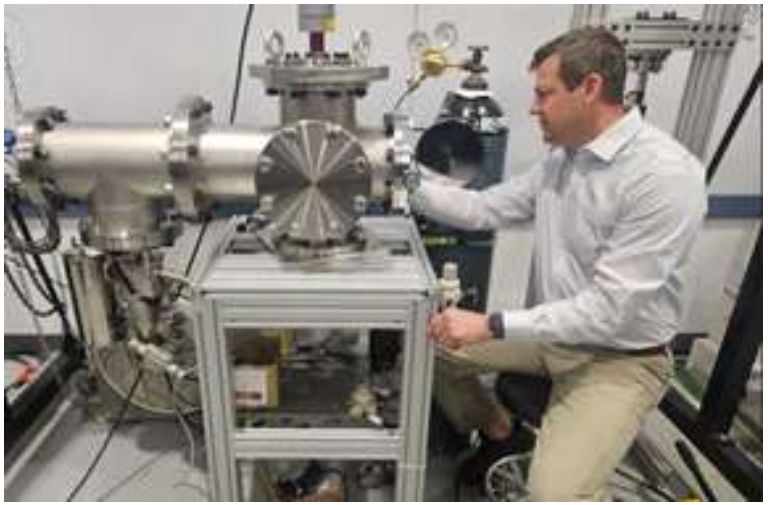
FILM SEEMING / BAGGING

ADDITIVE STRENGTHENING & LIGHTENING

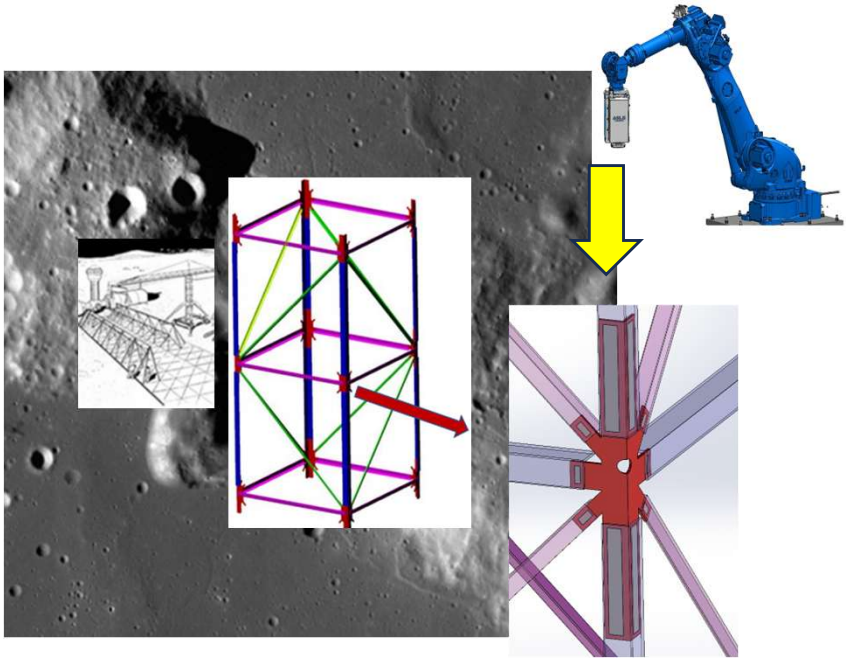


AGILE ULTRASONICS

ULTRASONIC WELDING IN A AGILE'S VACUUM CHAMBER UNDER EXTREME ENVIRONMENTAL CONDITIONS (-190C to +120C)



- 2021 – 2025 Commercial Tier 1 aeros (NDA)
- OFRN 6 – Parallax Research / NASA / AFRL
- 2021 – 2025 NASA Welding in Space
- 2025 – AFRL MRN, Debulking braid for CCA / AAM



SUPPLY CHAIN SUPPORT

NASA

YASKAWA

TORAY

SYENSQO

AVIENT

TEIJIN

ARKEMA

victrex

America Makes

OAK RIDGE National Laboratory

ARM INSTITUTE