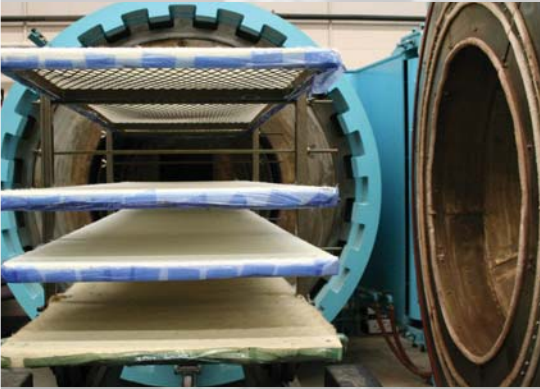


COMPOSITES LABORATORY



Researchers and technicians in the Composites and Advanced Materials Laboratory perform lay-up and bonding operations to understand the effects of heat, moisture, contamination and repairs on advanced materials. The lab also provides regularly scheduled hands-on training workshops in composites topics and supports the academic programs of the WSU College of Engineering.

Representative Clients: Boeing, Cessna, Hawker Beechcraft, Lockheed Martin, Bombardier/Learjet, NASA, FAA

Facilities & Equipment:

- 7,420 sq. ft. laboratory
- Autoclave (3' x 5', 1000 degrees F, 400 psi)
- 6 environmental chambers for temperature and humidity conditioning
- Dynamic mechanical analysis units
- Differential scanning calorimetry
- Thermogravimetric analyzer
- Optical microscope with video analysis
- Stereoscope x350 with hand-held inspection unit
- Filament winding machine (4-axis)
- Programmable walk-in oven (8' L x 5.5' W x 6' H, 500 degrees F)
- Programmable oven (4' L x 3' W x 6' H, 500 degrees F)
- Ultrasonic NDI unit to perform pulse and echo and TTU scans with curved panel capability
- RTM resin pumps
- Walk-in freezers (-20 degrees F)
- Lay-up room
- Machine shop specialized for composite material processing
- Instron Dynatup 8250 with environmental chamber
- X-ray diffractometer
- Coordinate measuring machine
- Pheonix 4000 scanning electron microscope and energy dispersive system
- Fully-automated specimen polisher and grinders
- Thermal shock chamber (-160 degrees F to 500 degrees F)

Representative Projects:

- Bonded Repair of Composite Airframe Laminate and Sandwich Structures
- Adhesive Joint Characterization and Standards
- Effects of Defects and NDI Standards
- Material Qualification and Equivalency
- Industry-Directed Special Projects and Element Allowables

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Located on the Wichita State University campus, in a city recognized as the Air Capital of the World, The National Institute for Aviation Research (NIAR) is a prestigious state-of-the-art aerospace research and development laboratory with global reach and expertise. NIAR integrates university, government and industry in cooperative efforts to advance technologies.

The Institute's clientele include many of the world's aerospace manufacturers, NASA and the FAA. It is the largest aviation R&D academic institution in the United States, with 135,000 square feet and more than a dozen laboratories. NIAR is recognized internationally as a high-tech research and development, design, testing, certification and learning center.