

CASE STUDY

PROJECT SIZE: SMALL (<\$5,000)

TIMEFRAME: 2 – 3 WEEKS

Contaminant Identification During the Fabrication of Composite Panels

Client: An aerospace manufacturer approached FibreCITY after discovering that their manufacturing process was routinely producing contaminated panels.

Problem: The client could not identify the unknown contaminant and could not narrow down its source because contaminants could be easily introduced at any stage in the manufacturing process. This resulted in cross-contamination, manufacturing downtime and extra costs.

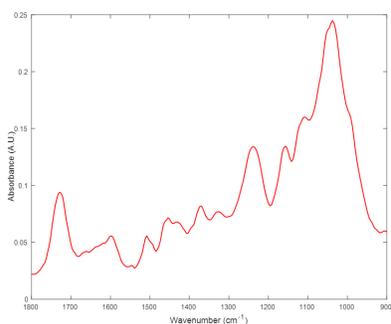
Details:

- The manufacturer was looking for a technology solution that could quickly determine the location and identity of the contaminants.
- To allow for the rapid investigation of large panels for regions of contamination, the solution needed to be non-contact.
- The technology also needed to be easily automated using the system already in place at the manufacturer (robotic arms that can precisely move around long composite panels), requiring either no or minimal changes to their production set-up to automate this technology.

Recommended Tests & Rationale:

FibreCITY identified handheld FTIR as being a promising technology to meet the client's needs. Testing was performed on contaminated panels and suspected sources of contaminants were provided by the client to evaluate the technology.

- **Axio Imaging** – preliminary assessment of the samples using high-definition images
- **Handheld FTIR Test** – used the handheld FTIR device to locate and identify contaminants in different regions of the composite panel
- **Data Analysis** – analyzed FTIR spectra obtained to determine the identity of the contaminants



Outcome

FibreCITY identified the contaminant from one of the samples and the client was able to determine the source of the contamination during the fabrication process. The client then started investigating introducing the FTIR technology into their manufacturing process in order to identify the contaminants before the parts leave the factory.