# GCxGC Flow Modulation Solution

Simplified modulation system increases capabilities for analytical laboratories

Single-dimension GC is a powerful analytical technique, but it can have limitations when it comes to the analysis of complex mixtures and matrices. Comprehensive two-dimensional GC, or GCxGC, expands separation capabilities by adding a second, orthogonal column in series to the first column; however, this configuration can be expensive to implement and requires highly trained instrument operators.
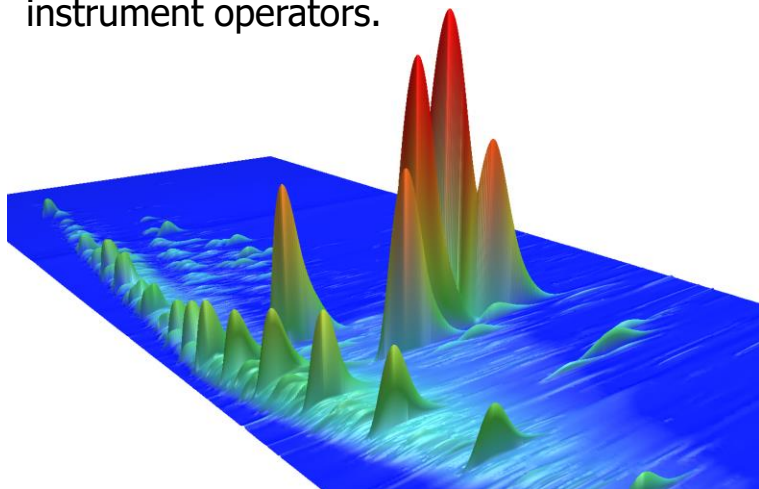

*"We're looking forward to integrating GCxGC analysis into our other projects **to improve our detection capability** and chromatographic resolution!"*
- Isaac Mastalski, Graduate Student, University of Minnesota

ARC's solution takes advantage of stop-flow modulation to make GCxGC an attainable configuration for any analytical laboratory. This allows for:

- ✓ Low-cost implementation
- ✓ Simple, easy installation
- ✓ Dramatically increased peak capacity through comprehensive analyte transfer

- ✓ Unattended or remote operation
- ✓ Streamlined operation through dedicated software
- ✓ Straightforward switching between 1D and 2D GC
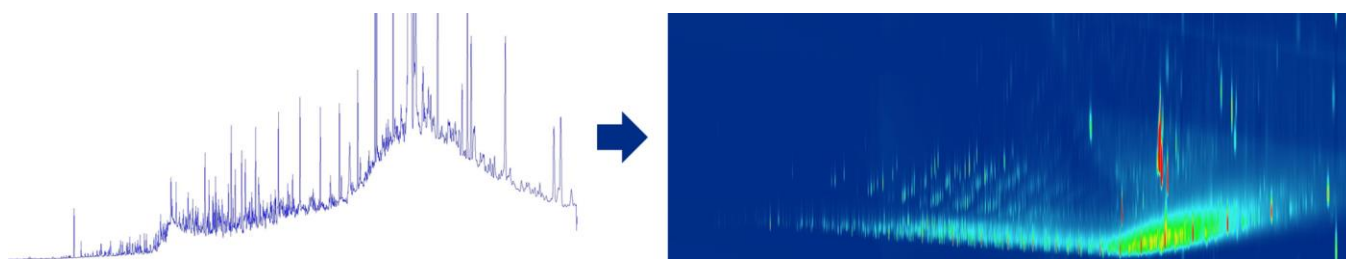
The limitations of 1D GC (above, left; 1D projection of biodiesel) are made clear and are demonstrated through unresolved peaks and coelution. However, the 2D heatmap projection (above, right) shows all of the peaks that have been resolved in the second dimension. This capability can be extremely powerful for complex matrices.