Manufacturing Systems & Automation Highlights

High-Temperature Structural FEA — Lanly

Performed iterative finite element analysis (FEA) studies for high-temperature industrial oven systems used in aluminum coil heat-treatment applications. Evaluated elevated grate assemblies, welded support frames, and reinforcement concepts under concentrated loading conditions approaching 30,000–50,000 lbf at approximately 1000°F operating temperatures.

Key Areas:

• FEA analysis

• Engineering simulation

• Structural systems evaluation

• High-temperature materials

Automated Thermal Validation System — STERIS

Designed and implemented an automated thermal-analysis and data-acquisition system for medical sterilization equipment using distributed thermocouples and repeatable test sequencing.

Manufacturing Analytics Pipeline — Lanly

Developed operational analytics workflows integrating engineering files, ERP records, estimates, budgets, and labor tracking systems into estimate-versus-actual reporting structures to improve manufacturing visibility and operational analysis.

CNC Automation & Fixture Optimization — CNC Performance Products

Designed automated vacuum-fixture and CNC workflow systems using fixture offsets, automated numbering logic, and batch processing to improve throughput and reduce operator involvement.