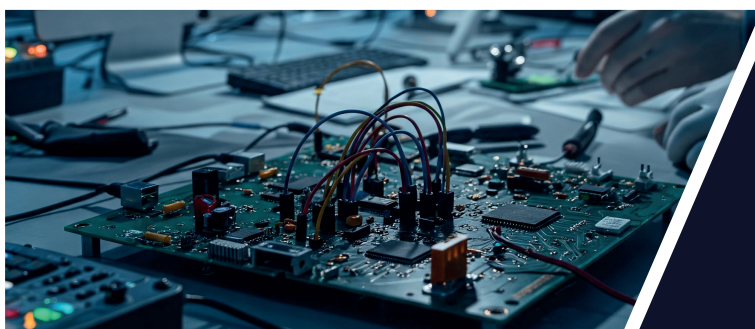


Why GTECHS?

- **Global expertise, local solutions:** Our multidisciplinary team has experience in sectors like electronics, automotive, aerospace, and commercial industries.
- **Practical approach:** From basic solutions to advanced engineering with computational simulations, analysis, and custom fixtures, we tailor technical precision to every challenge.
- **Flexibility:** On-demand services for specific projects, eliminating the need for permanent hires.



Electronic design

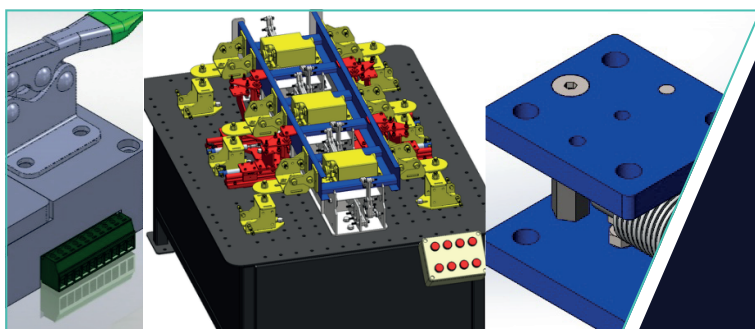
Circuit and system design tailored to technical, efficiency, and regulatory requirements.

- Schematic & PCB design.
- Circuit simulation.
- Component selection.
- Functional prototyping.
- EMI/EMC compatibility testing.
- Hardware design.

Root cause analysis

Systematic identification of failure origins in components or systems using scientific methods and analytical tools to prevent recurrence.

- Data and evidence collection.
- Ishikawa diagrams.
- Failure scenario simulation.
- Technical report generation.



Fixture design, manufacturing, and validation

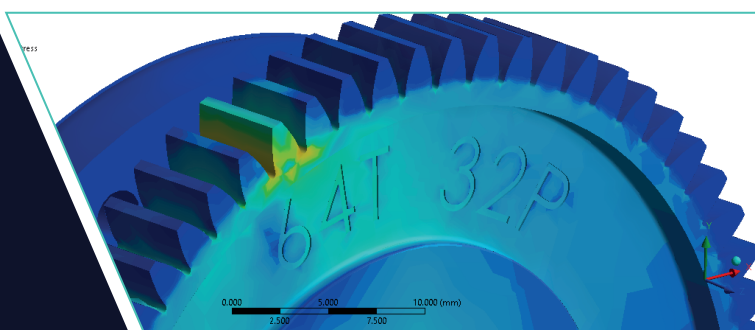
Custom device creation for clamping, assembly, or testing to optimize production processes.

- Parametric 3D design.
- Rapid prototyping.
- Strength testing.
- Dimensional calibration.
- Technical documentation.

Finite element analysis solutions (FEA)

Computational modeling to evaluate component behavior under thermal, mechanical, or dynamic loads.

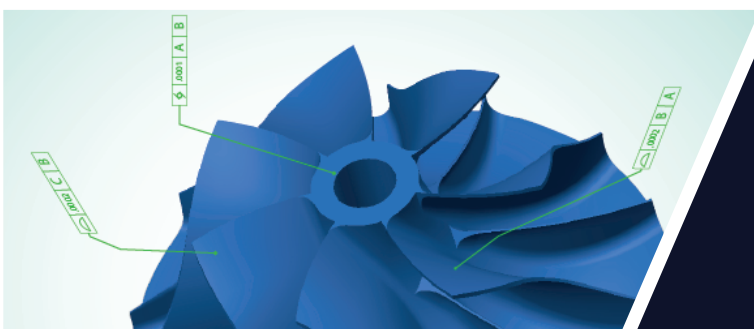
- Static/dynamic structural analysis.
- Thermal simulation.
- Fatigue studies.
- Material optimization.
- Stress/strain reporting.



Mathematical modeling

Abstract representation of real-world systems via equations to predict behavior and optimize processes.

- Differential equations.
- Predictive models (machine learning).
- Parameter calibration.
- Experimental validation.
- Scenario analysis.



Geometric tolerance stack-up analysis

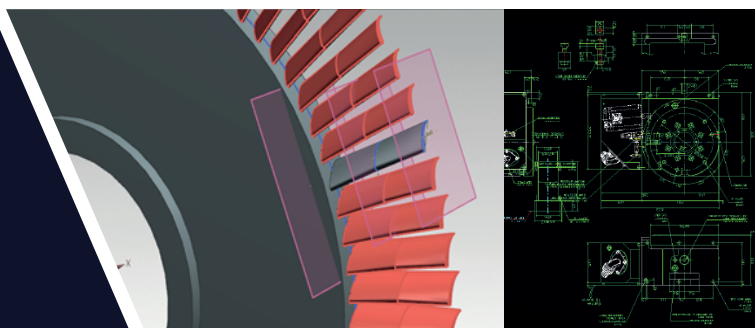
Evaluation of assembly tolerances to ensure fit and functionality under variable conditions.

- CAD modeling with GD&T.
- Statistical analysis.
- Dimension optimization.
- Assembly validation.
- Non-conformance reports.

Mechanical design (3D & 2D)

Development of digital models and blueprints for mechanical components, ensuring functionality and manufacturability.

- 3D CAD modeling.
- Detailed technical drawings.
- Virtual prototyping.
- Topology optimization.



Mathematical algorithm design

Logical sequence creation to solve complex problems in data processing or automated systems.

- Optimization algorithms.
- Numerical methods.
- Implementation.
- Statistical validation.
- Pseudocode documentation.
- Data processing.

Combined cycle power plant engineering

Technical solutions for design, operation, and improvement of gas/steam turbine power plants.

- Thermodynamic analysis.
- Heat exchanger design.
- Efficiency optimization.
- Predictive maintenance.
- Thermal cycle simulation.





Non-destructive testing (NDT)

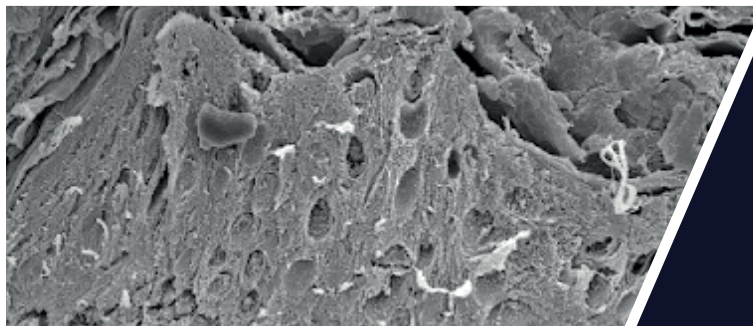
Structural integrity assessment without damaging materials, using techniques like ultrasound, radiography, or penetrant liquids.

- Ultrasonic testing.
- Industrial radiography.
- Liquid penetrant testing.
- Magnetic particle testing.
- Infrared thermography.

Embedded software & GUI engineering

Programming of embedded systems and graphical interfaces for industrial/electronic device control.

- Firmware development.
- HMI/graphical interface design.
- Communication protocols (CAN, Modbus).
- Integration testing.



Metallographic analysis

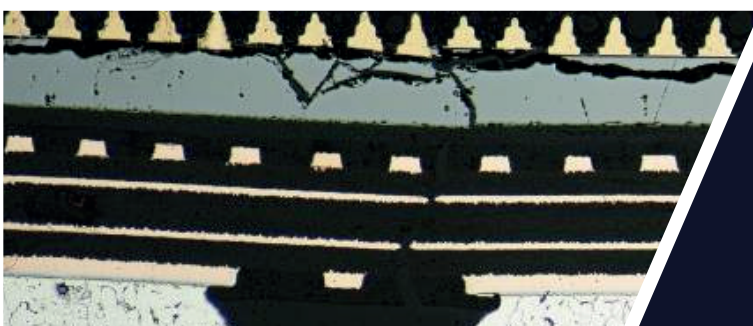
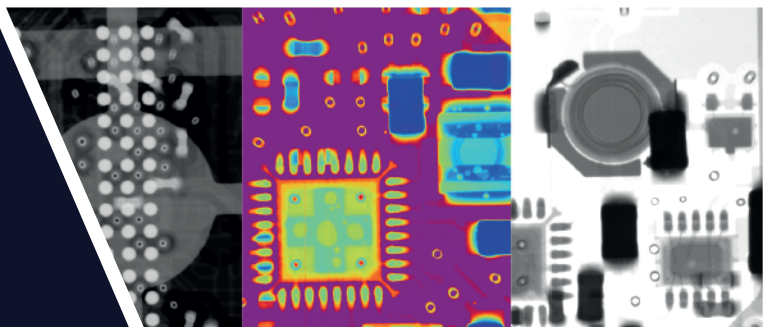
Microstructural evaluation of metals to determine composition, defects, and mechanical properties using advanced preparation and observation techniques.

- Sample preparation (cutting, polishing).
- Optical/electron microscopy.
- Grain size determination.
- Phase identification.
- Microhardness testing.
- Intermetallic bonding.

X-Ray inspection

URadiation-based visualization of internal structures to detect defects in industrial parts, electronics, or welds.

- Weld inspection.
- Porosity detection.
- Thickness measurement.
- Alignment verification.
- Digital radiography.



Cross-sectional analysis

Cutting and examination of cross-sections to analyze layers, welds, or internal defects in materials/components.

- Polishing and chemical etching.
- Microstructural analysis.
- Corrosion evaluation.
- Photographic documentation.