Raytheon IDS Materials Engineering Laboratories deliver a wide range of technical, engineering and laboratory capabilities and services in all phases of the product life cycle.

These laboratories fall under the materials science umbrella. Our highly experienced and qualified team works with an array of ceramics, metals, polymers, nanomaterials and composites, as well as organic materials and inorganic coatings. These technical areas are supported by a full range of analytical capabilities such as chemical, mechanical, electrical and environmental analysis and test.

Cost-effective, quick-turn, real-time capabilities are in place at the component, microelectronic device and subassembly levels with particular focus toward electro-mechanical root-cause failure analysis.
Yield improvement/zero defects
Raytheon’s technical expertise and material testing capabilities support factory incoming inspections, assist design engineering and manufacturing, perform detailed failure analyses, assure the correct selection and validation of materials and processes for long-term product reliability and counterfeit avoidance.

Process development
Areas of expertise include welding, brazing and soldering, heat treatment, nondestructive testing, failure analysis, special process audits, adhesive systems, sealants, potting compounds, coating systems (e.g., paints, conformal coats and plating), and process development and optimization.

Materials analysis
Materials Engineering provides chemical analysis and nondestructive testing of a wide variety of product types such as ceramics, printed wiring board and hybrid substrates, metals, joining, plastic parts, plastic insulators and conductors, paints, conformal coatings, adhesives and encapsulants.

Materials definition
Materials Engineering team members provide design input for materials selection and related processes required to define the most cost-effective and reliable means of meeting design requirements for the product’s life. They work at hazardous materials reduction/elimination throughout the design process and creating Hazardous Materials Management Plans.

Failure Analysis
Our failure analysis runs throughout the program life cycle supporting engineering development, and incoming inspection, production. Analysis of production and field returns identify latent defects, supplier faults, test problems and product design implementation issues that affect system reliability utilizing a wide variety of test and evaluation capabilities.

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