

Vision. Applied.

As the innovation hub for RTX, the RTX Technology Research Center (RTRC) puts our technical vision to work. We anticipate the discoveries in science and technology that are destined to change aerospace and defense – then transform that research into future-redefining solutions and products.

We are:

- Fueling RTX innovation.
- Overcoming critical challenges.
- Building a safer, more sustainable and connected world.

The science of what's next

We collaborate with the businesses of RTX to continuously innovate the next big things in aviation, space and defense. Applying open minds and the latest science and research tools, we empower RTX and its businesses with new ways of thinking, smarter ways of working and breakthrough innovations that provide unprecedented value and competitive leverage. We also draw on the expertise of major universities and national laboratories to discover new pathways to the future.

Future-ready

RTRC partners with RTX businesses to transform innovative research in advanced materials, artificial intelligence, electrification, advanced sensing, advanced propulsion, and integrated systems into breakthrough aerospace and defense technologies that yield high returns for our customers and government agencies. Our unique talent, experience and resources also allow us to deliver rapid responses to critical, time-sensitive challenges.

KEY CAPABILITIES

Aerothermal systems

- Aerodynamics and acoustics
- Combustion and propulsion technology
- Thermofluid sciences

Physical sciences

- Advanced manufacturing
- Chemical sciences
- Materials and mechanics
- Measurement sciences

Intelligent and cyber-physical systems

- Artificial intelligence
- Electric and electromagnetic systems
- Optimization and control technologies

RTRC includes some of the world's leading scientists, researchers and engineers.

85%

of our staff hold advanced degrees

69%

hold doctorate degrees

175

U.S. patents are secured every year on average

30+

countries are represented by RTRC researchers



Major research areas

RTXC

RTX Technology
Research Center

For 95 years, the RTX Technology Research Center has operated as a multidisciplinary group of experts collaborating on groundbreaking innovations.

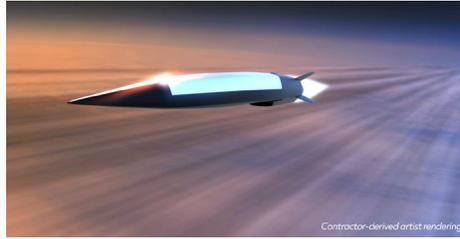
We are primarily focused on six major areas of research that are aligned to RTX's company-wide technology strategy and road maps.



Complex integrated systems

Technologies and methods that create disruptive product offerings through system design and engineering.

- Design of product utilization and employment.
- Design for transient and off-design operations.
- Methods for rapid and rigorous exploration of design spaces.
- Modeling across disciplines, scales and fidelities.
- System solutions that decrease cost and increase performance.



Advanced materials and manufacturing

Innovative structural, functional and coating materials for performance-critical applications, coupled with enabling and efficient fabrication methods.

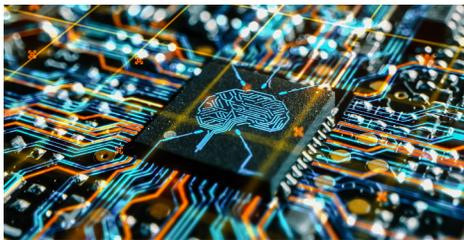
- High temperature and lightweight structural materials.
- Novel acoustic, optical, and electronic materials.
- Customized, durable coatings.
- Additive and convergent manufacturing.
- Model-aided design of materials, processes and structures.



Model-based digital thread

Digitally linking modeling tools and processes to form a single, continuous chain of knowledge across the entire product's life cycle from design and manufacturing to the aftermarket.

- End-to-end product lifecycle digital thread.
- Model-based collaboration and integration.
- Co-design with manufacturing.



Artificial intelligence systems

Integration of technologies and methods that perform tasks characteristic of human intelligence with sensing and processing technologies to address critical RTX-relevant challenges.

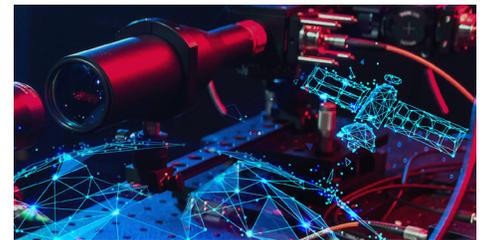
- Artificial intelligence assurance.
- Collaborative autonomy.
- Human-machine symbiosis.
- Embedded artificial intelligence.
- Vision-image intelligence.
- Foundational models.



Electrification and sustainability

Revolutionary concepts for electric and alternative fuel system architectures that will power the next generation of air vehicles and provide advanced mission capability.

- Advanced propulsion cycles.
- Electro-magneto-mechanical energy conversion.
- Power electronics.
- High-voltage distribution and protection.
- Sustainable fuels.



Disruptive technologies

New technical innovations with the potential to provide disruptive impact to RTX products and processes in new areas or across multiple applications.

- Microsystems.
- Devices and materials for extreme environments.
- Rotating detonation engines.
- Sensing and computing using quantum and neuromorphic technologies.



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