

GENERAL ATOMICS ENERGY GROUP

Innovation. Expertise. Experience.



The image shows a large, cylindrical metallic structure, likely a central solenoid, in a dark environment. A bright orange sun is visible in the upper right corner. The word "FUSION" is written in large, glowing purple letters across the middle of the image.

Magnetic Fusion Energy
DIII-D, ITER Central Solenoid
Theory and Simulation
High-Performance Computing



The image shows a close-up of a hand holding a small, intricate metallic component. The component has a circular face with a central hole and is surrounded by various mechanical parts and tools.

Inertial Fusion Technology
Precision Components
Stockpile Stewardship Research
Nano-scale Metrology



The image shows a collection of nuclear-related components. On the left, there are several cylindrical fuel rods. In the center, there is a red semi-truck carrying a large white cylindrical container. On the right, there is a cutaway diagram of a nuclear reactor core.

Nuclear Technologies & Materials
Advanced Nuclear Reactors
Accident Tolerant Fuels – SIGA™
TRIGA® and Radioisotopes

The Energy Group at General Atomics (GA) pioneers advanced technologies with world-changing potential. We have been at the cutting edge of energy innovation since the dawn of the atomic age – more than 60 years. GA's scientists and engineers are advancing the frontier of scientific discovery across a comprehensive array of key energy technologies, and helping meet growing global demands through safe, sustainable, and economical solutions.

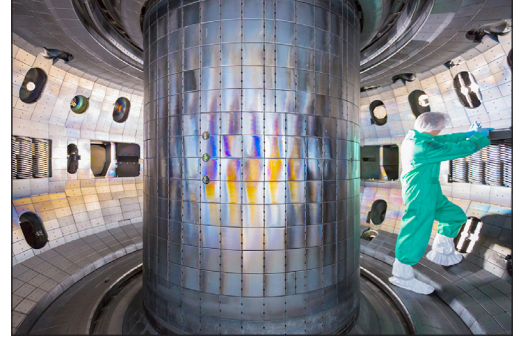
Delivering Energy Solutions for Future Generations

MAGNETIC FUSION ENERGY

GA is a leader in magnetic fusion research with more than 50 years of achievement. Our efforts have led to contributions in fusion energy through practical research, theory, and industry-leading computer simulations and high-performance computing applications. GA operates the largest magnetic fusion research facility in the U.S., the DIII-D National Fusion Facility, for the U.S. Department of Energy (DOE). GA is a vital partner in ITER and is manufacturing major components and key diagnostics for this worldwide initiative, most importantly the Central Solenoid, which will be the world's largest pulsed superconducting electromagnet.

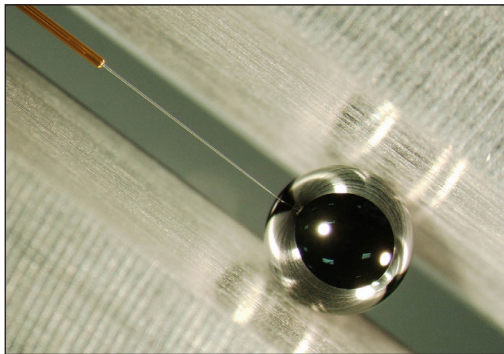
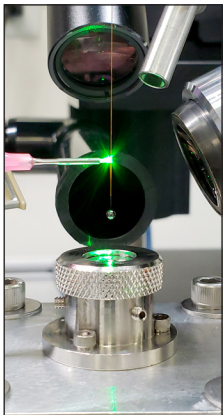


One of the seven central solenoid modules GA is supplying to ITER



Interior of DIII-D, the most flexible and highly instrumented tokamak in the world

INERTIAL FUSION TECHNOLOGY



A two-micron target fill tube fabricated by GA for experiments on the National Ignition Facility

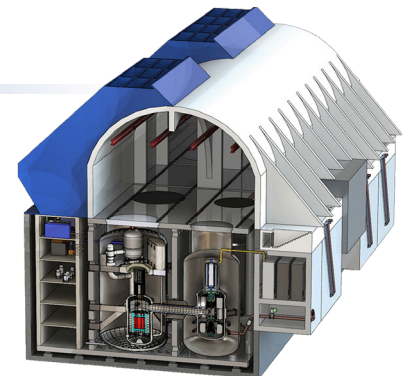
For more than 25 years, GA has supported the National Nuclear Security Administration's research in inertial confinement fusion and high-energy-density physics by supplying critical components, diagnostics, and other associated equipment. GA works closely with DOE national laboratories to develop innovative solutions to the physics challenges presented by researchers. These programs have made GA an innovator in microfabrication, micromachining, microprinting, advanced coatings, aerogels, and related technologies.

NUCLEAR TECHNOLOGIES & MATERIALS

GA's TRIGA research reactors have a flawless record of inherently safe operations reaching back to 1958. Over the years, GA has been at the forefront of developing TRISO fuel, processes to remove fission products, and helium-cooled reactor technologies. For the next generation, GA is focused on the innovative Energy Multiplier Module (EM²), an advanced modular gas-cooled design that addresses the core challenges facing nuclear energy. GA is leveraging EM² research for DOE's Accident Tolerant Fuel program to develop composite cladding materials that offer a significantly higher safety margin than current metal alloys.



Nuclear fuel rod cladding made from SiGA™ silicon-carbide composite can withstand extreme conditions well beyond that of current metal fuel rods



The innovative EM² design addresses the four core challenges facing nuclear energy – safety, waste, cost, and non-proliferation

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