DIII-D
NATIONAL FUSION FACILITY

HARNESSING THE POWER OF THE STARS

The Scientific Path to a New Clean Energy Source

Fusion takes place in the sun as hydrogen atoms combine to make energy. Inside the sun, gravity holds gases tightly together to reach high temperatures enabling fusion.

On earth, this process is recreated in a magnetic chamber known as a tokamak, where temperatures over 200,000,000°C have been achieved – 10 times hotter than those of the sun.

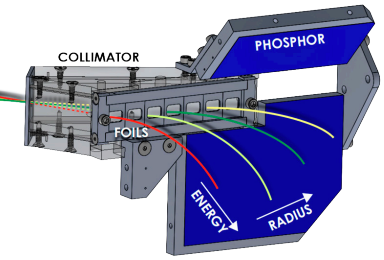
DIII-D – the largest fusion facility in the U.S. and one of the most capable tokamaks in the world – is tackling the great scientific challenge of bringing star power to earth to create a clean, safe, and virtually unlimited energy source.

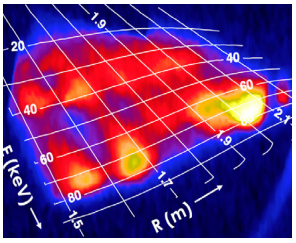
DIII-D NATIONAL FUSION FACILITY SAN DIEGO

GENERAL ATOMICS

DIII-D NATIONAL FUSION FACILITY

Award-Winning Science Advancing New Energy and Technology Research and Development





- Seven-time winner of the "John Dawson Award for Excellence in Plasma Physics Research" from the American Physical Society – the most such awards received by any facility or research team in the world
- 65 Fellows of the American Physical Society
- Major breakthroughs in physics advancing the quest for fusion and its promise of a clean, unlimited energy supply

A novel Imaging Neutral Particle Analyzer measures neutralized fast ions escaping from the DIII-D tokamak plasma, allowing detailed studies of the impact of waves and other perturbations. This new diagnostic has an unprecedented combination of energy and spatial resolution and could revolutionize measurements of confined fast-ion profiles in fusion experiments.

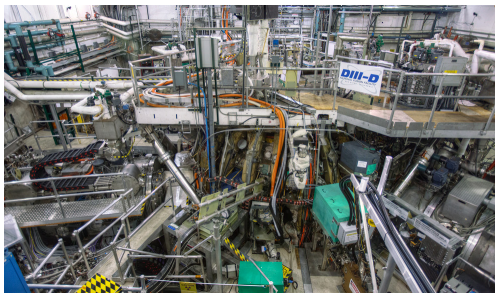
Major Hub for International Scientific Community

- More than 800 collaborating researchers from more than 100 institutions worldwide
- Partnerships with seven U.S. national laboratories
- 40 universities among collaborators with more than 80 doctoral theses produced
- Over 100 current graduate students and post-doctoral users

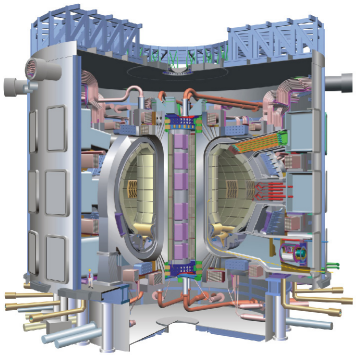
DIII-D National Fusion Facility collaborators

Strengthening the U.S. Economy

- **Experience:** General Atomics has hosted a progression of fusion research facilities going back to the early days of the U.S. fusion program
- **Progress:** Continued success of DIII-D has led to its development into the nation's largest magnetic fusion facility
- **Breakthroughs:** Fusion research continually leads to vital scientific discoveries and spinoff technology, from MRI medical diagnostics to maglev transport to semiconductors and electronics, including the next-generation Electromagnetic Aircraft Launch System (EMALS) used on the USS Gerald R. Ford



DIII-D National Fusion Facility, San Diego, CA



Cross-section of the ITER fusion reactor

Capitalizing on Global Investment in Fusion Energy Science

- DIII-D is the world leader in resolving critical design issues for ITER, one of the largest scientific programs in history, with the goal of demonstrating the feasibility of fusion power
- ITER is currently under construction in France by an unprecedented scientific partnership of 35 nations (including the U.S.)
- DIII-D collaborators include scientists from China, Europe, Japan, Korea, Russia, India, Australia and Canada, enabling strategic U.S. engagement in fusion programs worldwide

Richard Buttery, Director and Vice President of DIII-D National Fusion Facility
Ph: 858-455-3557 | E: butter@ga.com
GENERAL ATOMICS | 3550 General Atomics Court, San Diego, CA 92121, USA | WWW.GA.COM

3101-1022