



Georgia Tech Hydrogen Initiatives

The Georgia Institute of Technology has a broad range of testbeds, industry partnerships, and federal programs across the hydrogen value chain, including hydrogen production, storage/transport, and utilization. Georgia Tech is also focused on developing diverse STEM talent for such industries and is committed to ensuring that these advancements impact our society in an environmentally and socially equitable manner.

• Hydrogen Production

Georgia Tech has activities in various pathways to producing hydrogen, including renewable energy sourced “green” hydrogen, carbon-sequestered “blue” hydrogen, and nuclear energy sourced “pink” hydrogen. Crosscutting technologies such as advanced electrolysis cells are being developed under industrial and agency sponsorships.

• Hydrogen Storage/Transport/Logistics

Georgia Tech has an array of projects to investigate novel modes of hydrogen storage, including hydrogen carriers like ammonia and advanced storage vessels like specialized composite pressure vessels. Georgia Tech also houses the Supply Chain and Logistics Institute, which works with a variety of industries in rail, ground transport, pipelines, and electric grid optimization and design.

• Hydrogen Utilization

Georgia Tech has one of the largest national test and evaluation centers for utilizing hydrogen in electric power plants, with major technology development, testing, and R&D programs with multi-national companies and the Department of Energy. Georgia Tech also has a range of fuel cell development activities for transport and electric power applications. Work is also underway to use hydrogen as a feedstock for renewable fuels and chemical development.

• Hydrogen Workforce

Georgia Tech is the largest producer of engineers in the country, including one of the largest producers of Black, Latino, and female engineers. Georgia Tech has a range of activities associated with developing the hydrogen STEM workforce.

• Hydrogen Capacity

Georgia Tech has several decades of experience in research, development, testing, and safety considerations around hydrogen. Large scale test facilities are available for direct hydrogen utilization, and hydrogen blending with natural gas, carbon monoxide, nitrogen and other fuels/dilents. Georgia Tech has capabilities for handling hydrogen over a large range of scales, ranging from single bottles, to six-packs of hydrogen, to tube trailers. The Institute also has a significant amount of Environmental Health & Safety infrastructure for hydrogen sensing, handling, purging, and safety. Finally, Georgia Tech has comparable experience and infrastructure for other hydrogen carriers, such as ammonia.

• Hydrogen Equity

Georgia Tech researchers are studying how unintended technical and social consequences of hydrogen energy systems can be mitigated or avoided; as well as ensuring that a diversity of talent engages with hydrogen developmental opportunities, so that we avoid a demographic divide of beneficiaries. Georgia Tech is engaging these and other critical points of equity because sustainable energy is about more than economic viability and environmental benefits.

Strategic Energy Institute (SEI)

<https://www.research.gatech.edu/energy>

Georgia Tech Research Institute (GTRI)

<https://gtri.gatech.edu>

Georgia Tech Supply Chain & Logistics Institute

<https://sci.gatech.edu>