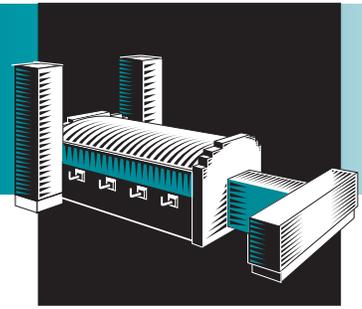


GLASS

Project Fact Sheet



PRODUCING GLASS FIBER

BENEFITS

- Energy consumption savings of up to 40%
- Greater manufacturing flexibility
- Improves product quality and consistency
- Reduces waste due to breakage
- Reduces use of platinum in the forming tips
- Decreases initial and operating costs
- Can improve U.S. participation in a growing global market that has surpassed five billion pounds per year nationally

APPLICATIONS

This technology can be used to produce fiberglass and composite materials that are reinforced with glass fibers. Such materials are much stronger than wood, steel, and aluminum by themselves, and provide other major benefits.

APPLYING SCIENCE TO THE ART OF GLASS FIBER MAKING YIELDS ENERGY SAVINGS

Glass fibers are exceptionally strong, lightweight, and inexpensive to produce. The natural materials glass fibers are made from are abundantly available. More than 40,000 products use glass fiber for reinforcement. By changing the furnace design and process used to produce glass fiber for nearly 50 years, glass fibers could be more uniform in diameter, break less easily, and be produced more economically.

This is the objective of a new furnace design that is doughnut-shaped and revolves to melt glass uniformly. The glass is drawn through numerous bushings and can produce fibers faster and with less breakage.

PRODUCING GLASS FIBER



Over 40,000 different products use glass fibers to add strength while remaining light in weight. A new process and hardware for producing high-quality glass fiber would lead to more uses and benefits to the United States.



Project Description

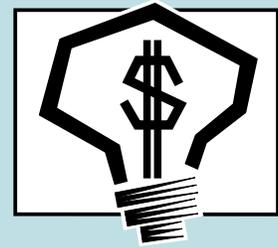
Goal: The goals of this project are to engineer, construct, and operate a prototype unit to demonstrate the complete feasibility of the technology, and to measure the benefits.

The new technology uses a revolving, doughnut-shaped melter that distributes the molten glass to a large number of bushings around its circumference. The internal burners use a mixture of gas and oxygen to produce a very uniform, energy-efficient melting temperature. This new furnace will be smaller than the current rectangular melters but will hold the same capacity, thereby realizing energy and capital investment savings.

Vortec Corporation is developing this new technology with the help of a grant funded by the Inventions and Innovation Program through the Department of Energy's Office of Industrial Technologies.

Progress and Milestones

- Scoping of the work among the partners has begun.
- A patent application has been filed.
- Basic engineering has started.



The Inventions and Innovation Program works with inventors of energy-related technologies to establish technical performance and conduct early development. Ideas that have significant energy savings impact and market potential are chosen for financial assistance through a competitive solicitation process. Technical guidance and commercialization support are also extended to successful applicants.

PROJECT PARTNERS

Inventions and Innovation Program
Washington, DC

W. Wendell Drummond
Gainesville, FL

Vortec Corporation
Collegeville, PA
<http://www.vortec-cms.com>

FOR PROJECT INFORMATION, CONTACT:

W. Wendell Drummond
Phone: (352) 377-4429
Fax: (352) 374-9360
E-mail: wwdrum@aol.com

FOR PROGRAM INFORMATION, CONTACT:

Sandy Glatt
Program Manager
Inventions & Innovation Program
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585
Phone: (202) 586-2079
Fax: (202) 586-7114
sandy.glatt@ee.doe.gov

Visit our home page at
www.oit.doe.gov

Office of Industrial Technologies
Energy Efficiency
and Renewable Energy
U.S. Department of Energy
Washington, D.C. 20585

INDUSTRY OF THE FUTURE—GLASS

Through the Industries of the Future initiative, the Glass Industry has partnered with the U.S. Department of Energy (DOE) to spur technological innovations that increase production efficiency, energy efficiency, environmental protection/recycling and innovative uses of glass. The U.S. glass industry employs 150,000 people in skilled jobs and generates more than \$22 billion of products ranging from optical fibers to windshields.

OIT Glass Industry Team Leader: Theo Johnson (202) 586-6937.



DOE/GO-10099-641
January 1999