OIT's Glass Partnership Portfolio

Materials

- Molybdenum Disilicide ($MoSi_2$) Composites for Glass Sensors
- CFCC Burners for Heating & Drying Applications
- Intermetallic Alloy Development
- Acoustic Monitoring of Corrosion/Erosion in Recovery Boiler Tubing
- Tunable Diode Laser Sensors for Combustion
- Electrochemical Extraction of Oxygen from Air
- Corrosive Resistant Recuporator for Metals Industry
- Monolithic Refractory Material

Production Efficiency

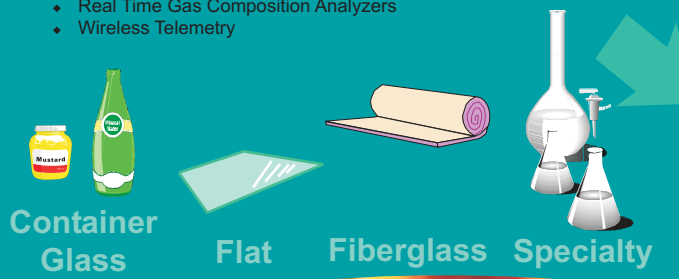
- Auto Glass Process Control
- Advanced Combustion Space Models
- Coupled Glass Combustion Space/Glass Bath Furnace Simulation
- Advanced Process Control for Glass Production
- Diagnostics and Modeling of Refractory Corrosion
- Measurement and Control of Glass Feedstocks
- Enhanced Cutting/Finishing of Handglass
- Online Sensor for Monitoring Cure of Coatings
- Sensor Fusion for Intelligent Process Control
- Producing Glass Fiber
- Intelligent Control of the Cupola Furnace
- Sensors for Die Casting
- Diagnostics and Control of Furnaces via Flame Image Analysis
- High Temperature Micromachined Sensor for Gas Streams
- Real Time Gas Composition Analyzers
- Wireless Telemetry

Innovative Uses

- Integrated Ion-Exchange Systems for High-Strength Glass
- Process Optimization for On-Line Coating of Float Glass
- Novel Frequency Selective Solar Glazing System
- Enabling Tool for Innovative Glass Applications
- Composites and Coatings
- Microwave and Plasma Processing
- Fiber Optic Sensor for Online Paper Weight Measurement
- Optical Sensors for Improved BOF Operations
- Fiber Optic Sensor for Industrial Process Measurement
- Optical Coupling of Infrared Analyzers
- Inventions and Innovations

Energy Efficiency

- Combustion & Melting Test Research Facility
- Batch/Cullet Preheater
- High-Temperature Properties Measurement
- Rotary Electric Glass Furnace
- Laser Diagnostics for Oxygen Enhanced Glass Synthesis
- Vertical Floatation Melter
- Energy Conserving Tool for Combustion Dependent Industries
- Aluminum Melting Using Oxygen Enhanced Combustion
- Laser Ultrasonics for Property Measurement
- Innovative High Temperature Natural Gas Furnace
- In-Situ Real Time Measurement of Melt Constituents
- Thermal Imaging Control of Furnaces
- Rotary Burner
- Plant Energy Audits
- BestPractices



Environmental

- High-Luminosity, Low NOx Burner
- GPLUS
- Monitoring/Control of Alkali Volatilization and Batch Carryover
- Oscillating Combustion
- Very Low Emissions Burner (Forced Internal Recirculation)
- Multi-Phase Fluid Dynamics Research Consortium
- Integrated Low Emission Process Heater System
- VOC Control in Kraft Mills
- Plasma Treatment for VOCs
- Novel Low NOx Burners for Steel Boilers
- Hot Oxygen Injection into Blast Furnace
- Oxy-Fuel Burners for Steel Reheating
- Reduced VOC Emissions
- Online Emissions Sensors
- Dilute Oxygen Combustion
- Miniature Oxygen Sensor

Recycling

- In-House Recovery/Recycling of Glass Manufacturing Waste
- Converting Spent Potliner to Glass Fiber Products
- New Method of Manufacturing Ceramic Products from Waste Glass

Total Project Funding

Direct = $39 million

Relevant = $64 million

Total = $103 million