

## ACSI is Revolutionizing Gob Temperature Control

ACSI offers the first solution for direct control of Gob temperature. While previous control systems rely on indirect measurements upstream in the forehearth, this solution utilizes direct measurement of each gob, combined with advanced model based control to achieve exceptional stability and control right at the point of entry to the forming equipment.

process transfer function, adapts to process changes, understands dead time without requiring tuning. With tighter control, deviations from setpoint are greatly reduced which in turn leads to increased product consistency and quality.

**Q) What have been some of the benefits realized by customers?**

**A)** Many benefits have been derived from reduced variability of gob temperature; improved pack, faster compliance to setpoint, reduced job change time, and faster recovery from disturbances.

**Q) What type of systems can this control be applied to?**

**A)** The ACSI solution has been applied to both older and newer furnace systems.

**Q) How can the ACSI solution be applied to a glass plant's present system?**

**A)** ACSI's implementation methodology brings together the tools and know how to quickly adapt the Gob Temperature Control package to your existing control system. A detailed site assessment will determine the necessary hardware, software and instrumentation required.

**Q) Why choose the ACSI solution?**

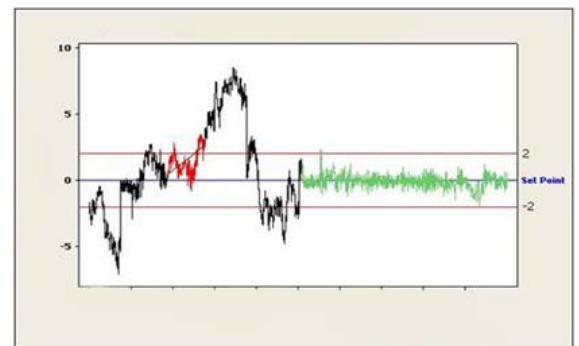
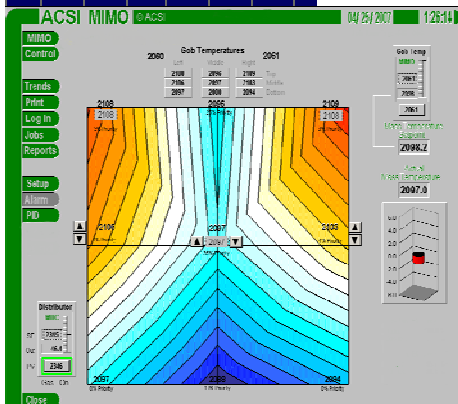
**A)** ACSI brings extensive experience from over 700 installations worldwide in various industries. Our company is a recognized leader in development of advanced control techniques.

**Q) What does tighter gob temperature control provide?**

**A)** Features of tighter gob temperature control include direct control of gob temperature, feedback and feed forward Model Based Control, and the consideration of dead time.

**Q) What is ACSI's application strategy?**

**A)** ACSI brings an additional level of control to the existing forehearth control system. ACSI's solution includes an optical thermometer for direct measurement of gob temperature and Brainwave® Model Based Control software. The ACSI Model Based Control system has the ability to track process dynamics, predict actions, and drive temperature quickly to setpoint while avoiding overshoot. These features make Model Based Control more efficient than traditional PID. The controller learns



Gob Temperature variation before and after ACSI optimization

# ACSI

Check out our web site at

[www.acsitolledo.com](http://www.acsitolledo.com)

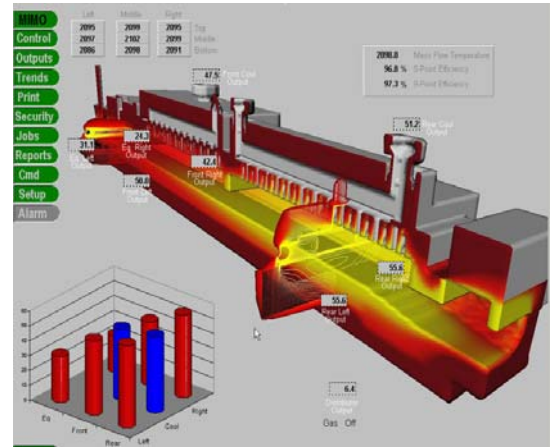
# ACSI Fall 2007 Event Calendar

Sept 4-5  
**GlassMan Middle East**  
Cairo, Egypt

Sept 17-19  
**ASM Heat Treating Exhibition**  
Detroit, MI, USA

Oct 15-17  
**Glass Problems Conference**  
Columbus, OH, USA

Nov 15-17  
**Glasstec Asia**  
Bangkok, Thailand



## News from ACSI Europe *(by Art Lawrence)*

ACSI Europe continues to expand its non-glass business

ACSI Engineers at the Wantage, UK office continue to build on their previous success with repeat orders in the Food Packaging industry.

Following previous cooperation with an equipment supplier on a contract, Rob Haydon and Mark Humphries have successfully implemented control systems at Nestlé in York and at Cadbury in Birmingham. These installations involved synchronisation of production lines and bar code scanning systems, based on Rockwell hardware and Panelview operator interface. Rob comments "Projects in the food industry tend to happen extremely fast compared to glass projects; they have much shorter lead times and there is intense pressure to install, test and commission within a tight time frame". ACSI's philosophy of being well prepared and getting the commissioning right first time resulted in a trouble free start up on both projects.

The latest Cadbury project involved modifications to the existing Easter egg line at Bourneville, near Birmingham UK. The line was originally installed in 2003 in a ACSI collaboration with CKF.

The production line caters to both standard and small Easter egg formats, together with other products including Crunchie bars, Chocolate Buttons and Twirl snack bars.

The line was required to be installed and commissioned during a tight annual shut down period. Redesign of the packaging ("nest") required alterations to line layout. Therefore modifications were made to CKF conveying and third party equipment (eg. Closers, de-nesters) that required control system to be updated.

The Cadbury job in particular has resulted in the customer nominating ACSI as its preferred control system supplier for an up coming project in Ireland. More on this in a future issue.



## Meet ACSI Engineer Hernando Martinez



**Hometown:**  
Waterville, OH

**Background:**  
Attended University  
of Toledo and studied  
Electrical Engineering

**Started with ACSI:**  
Don't remember, but  
the earth was still

cooling off. Cretaceous era, I think

**Favorite Movie:** TMNT (Teenage Mutant  
Ninja Turtles) (just out on DVD)

**Favorite Summer Time Activity:** Steak  
and Beer

**Interests:** Beer and Steak

**Best thing about working at  
ACSI:** The informal, yet intense  
environment. Except when I haven't had  
any coffee

## Meet ACSI Engineer Scott Houser



**Hometown:**  
Addison, Michigan

**Background:** BSEE  
from Western  
Michigan University

**Started with ACSI:**  
June 1994

**Favorite Movies:**  
Snatch, Band Of  
Brothers, Any "guy" movie

**Favorite Summer Time Activity:**  
Wasting the day away on a pontoon boat  
with a few adult libations!

**Interests:** Sports especially Soccer and  
Leeds United FC

**Best thing about working at  
ACSI:** Working with a bunch of talented  
Engineers

## Introducing the ACSI Glass Optimization Series

The ACSI Glass Optimization Series provides organizations with a range of tools and services to bring existing and/or new operations to peak performance. Designed on a building block basis, each step delivers quantified returns. The series starts with an assessment of existing instrumentation and control structures then culminates with an automatic control system of the process. Steps taken by ACSI will insure operation within the highest production/lowest energy cost window. Optimization is accomplished using existing control systems coupled with advanced model-based control and a rule based inference engine. Results are measured by using the key performance indicators that really matter: %Pack, Job Change Time, Defect Loss, BTU/ton, etc. Most of our customers find that each phase pays for itself within 6 months.

The ACSI approach utilizes best practices and continuous improvement concepts to assess and correct sources of variability. At the regulatory level, model based control is applied to key control loops in order to remove temperature variability by an astounding 300% on average. By utilizing a model based control approach instead of traditional PID, the ACSI solution provides additional advantages beyond just adherence to setpoint.

The ACSI Glass Optimization Series is designed for the specific type of glass(\*) being produced

- **Container Glass:**  
Gob Temperature control
- **Fiberglass:**  
Forehearth Temperature control  
Melter Temperature control  
Bushing control
- **Float Glass:**  
Glass Level control  
Canal Temperature control  
Melter Crown Temperature control

*\*For brochures on the Glass Optimization Series please contact the ACSI newsletter editor.*

“The ACSI control system exceeded our expectations. Not only did we cut job change times in half, we saw an 11% decrease in ware loss and a 2% pack improvement.”




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**Did You Know?**

ACSI has developed a control system that can reduce variability of gob temperature by 300%!

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**Boston House**  
**Grove Technology Park**  
**Wantage Oxon OX12 9FF**  
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improving performance  
through advanced control solutions



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