

# Solutia Meets Changing Product Demands, Improves Quality with DeltaV™ System

## RESULTS

- Improved product quality
- Ease of ranging/calibration
- Reduced training costs
- Reduced installation costs
- Improved operation

## APPLICATION

Extrusion process. A single-end line takes in raw powdered polymer, mixes in solvents, heats, possibly dyes, filters, and finally extrudes acrylic resin into long strands of acrylic fibers.

## CUSTOMER

Solutia Inc., Decatur, Alabama, USA

## CHALLENGE

The end product coming off this process is further processed and sold to manufacturers for use in brake pads and other applications calling for high strength and adhesion to resins.

This pilot operation supports a wide range of new product developments and must constantly adapt to changing raw materials and processing parameters. Some of the products produced at this pilot facility are sold to other manufacturers, so the product quality must meet or exceed buyer specifications.

The process was run manually. Manual tweaking of several parameters was required to keep the polymer/solvent ratio correct. These adjustments took place after samples were drawn and extensive calculations were manually performed.

## SOLUTION

By successfully implementing a flexible process control strategy based on Emerson Process Management's DeltaV™ digital automation system, Solutia, Inc. is quickly meeting the constantly changing demands of its pilot acrylic production operation while delivering higher quality product.



*“It's been amazing to me how uniform the product is under the DeltaV system's control.”*

**Johnny Davis**

Operator, Solutia, Inc.



For more information:  
[www.EmersonProcess.com/DeltaV](http://www.EmersonProcess.com/DeltaV)



Together, Solutia and Emerson were able to seamlessly introduce the technology to plant operations staff, while streamlining support efforts traditionally required.

Much of the processing facility operated manually until the DeltaV system was installed and commissioned. It was imperative that the DeltaV system be easy to learn and use so that extensive retraining would not be required.

Solutia saw the DeltaV system as the perfect solution for its acrylic production processing facility. The DeltaV system provided an easy-to-learn system for both the engineers and operators.

After developing control strategies and operator displays in the DeltaV system, David Montgomery, a senior specialist in process modeling said, "I was impressed, not only in what the DeltaV system could do, but how easy it was to do it."

David Montgomery said the two main areas where he saw tremendous advantages in the DeltaV system over other systems he's used in the past, are in the graphics editing, and in the re-ranging of equipment online.

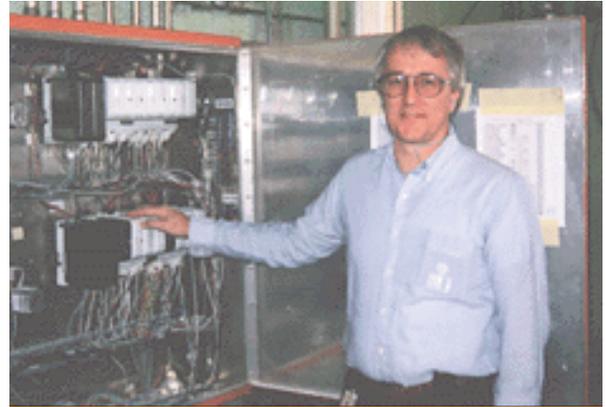
Montgomery could make changes in the operating graphics and see the results instantly, something critical for a pilot plant with constantly changing production requirements.

Re-ranging/re-calibration was easily done by the operators initiating control logic to run at the click of a button, which dynamically changed the range of the intelligent field instruments right from an operator's display.

Montgomery and his team have performed other fascinating work with the DeltaV system. For example, they have created dynamic graphics that change depending on the equipment used. They also manage alarms so that alarms on unused equipment are disabled—a feat impossible with many other systems available today. DeltaV sequential function charts (SFCs), one of the IEC-1131 standard control languages, easily and dynamically change the alarm attributes as process conditions change.

### Improved Product Quality

Since the DeltaV system's installation, Solutia operators don't have to constantly adjust the process to keep the quality of the finished acrylic fiber where it needs to be. "It's been amazing to me how uniform the product is under DeltaV's control," said operator Johnny Davis.



*"I was impressed, not only in what the DeltaV system could do, but how easy it was to do it."*

**David Montgomery**

Senior Specialist Process Modeling, Solutia, Inc.



## Reduced training costs

Davis, who had no prior PC experience, enthused, "I learned DeltaV by doing it, and felt totally comfortable operating our line with it in a few days."

## Reduced Installation Costs

Solutia required a cost-effective installation to justify the investment. Reginald Williams, the engineer responsible for the installation, was able to take a junction box retired from service and install the compact and field-hardened DeltaV controller and I/O subsystem right in the processing area instead of building a separate control room typical with other control systems.

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