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**From the President**



As Advanced Instruments, Inc. enters the second half of our first century in business, we thank everyone who

made it happen; our founders and share-holders, our loyal employees, our distributors and salespeople worldwide, and, most of all, our customers. During the next 50 years, we will continue to focus on the values that have guided our company; building the best instruments in our industry, never compromising on quality, treating our employees with respect, and conducting our business with honesty and integrity. By doing this, we hope to remain the example of excellence that was started in 1955.

John L. Coughlin  
 President / CEO  
 Advanced Instruments Inc.

You can register to receive a mailed copy of Advanced Dairy News by visiting our website at [www.aicompanies.com/dairynews](http://www.aicompanies.com/dairynews). You can also download current and prior issues there. We hope you enjoy this publication. Send your questions, comments and suggestions to [info@aicompanies.com](mailto:info@aicompanies.com).

**Does your Pasteurization Testing Fail to Meet New FDA Regs?**

On March 1, 2005, more demanding pasteurization testing regulations will go into effect for dairy processors located in the United States. And it is envisioned that similar regulations will soon be adopted in Europe.

Growing consumer and government awareness that food safety and quality are critical public health issues drives the new requirements. The impact on certified dairy labs will be significant as the manual Scharer colorimetric test to confirm pasteurization will no longer be acceptable.

The Fluorophos® ALP Test is the test of choice for labs looking to embrace new testing technology to meet these stricter regulations and advance its food safety program.

We have produced a white paper that explains the Fluorophos ALP Test and the attractive new benefits it brings to dairy process control and productivity.

For a copy, please visit [www.aicompanies.com/fluorophos/](http://www.aicompanies.com/fluorophos/).

**Fluorophos® ALP Product Improvements Reduce Cleaning Time and Contamination**

We are replacing the 2mL Bottle-Top Dispenser (Part# FLA824) with a 2mL Air-Displacement Pipet (Part# FLA888). Replacing the dispenser reduces the time customers spend cleaning the bottle-top dispenser between uses. This will also prevent potential contamination of the substrate caused by use of improperly cleaned dispensers.

In addition to the new pipet, we have replacement Pipet Tips for use with the 2mL Air-Displacement pipet. The tips come in a quantity of 25 and can be ordered using Part #ACM205.

To ensure optimal assay performance, we recommend changing the pipet tips when pipetting different samples, calibrators A, B, C, and quality control materials.

These changes will improve your ALP test routine. We welcome any feedback you have regarding these changes.



**Dairy Processors Working With Delta Instruments**

Delta Instruments, a Netherlands-based manufacturer of high quality analytical equipment for testing milk and milk products, has been working together with leading dairy processors around the world. Twenty-five of the top dairy processors (source: IDF Dairy Market 2003) own either a Filter- or FTIR-based LactoScope™ instrument for testing the composition of milk and milk products.

Many of these processors test their products just for fat, protein, solids and lactose. For them the LactoScope C4 can do the job. The LactoScope C4 is a real workhorse with superb accuracy and repeatability. Other dairy processors have additional specific analytical requirements. The Delta LactoScope FTIR can be calibrated to provide results for free fatty acids (FFA), casein, citric acid, and more.

*continued on page 3*

# Spiral Biotech PetriScan® Gets Turbo-Charged

In our efforts to continually provide better solutions to the micro lab, Spiral Biotech has redesigned the PetriScan to be even faster and more efficient. The PetriScan is now twice as fast as it's ever been! It only takes 15 seconds to scan 4 Petrifilms™ using the PetriScan.

The PetriScan utilizes a flat bed scanner for capturing the image of your Petrifilm plates. Once your Petrifilms have been incubated for the recommended amount of time, they can be placed on the scanner FOUR at a time for enumeration. After scanning, they can then be counted with a simple click of the mouse. Almost instantly, the plates are enumerated and the data recorded automatically in a database. Additionally, the PetriScan comes ready to read bar coding as well; capturing all of the Petrifilm sample information, in one quick scan.

The new PetriScan now has the speed to match its top-of-the-line data handling and evaluation software. PetriScan gives the laboratory technician the security they need to be confident in their decisions and to chronicle their results with speed and efficiency.



# SBI Introduces the Gravimat® Gravimetric Dilutor

To better serve our customers, Spiral Biotech has added to the BagSystem line of sample preparation products with the Gravimat Gravimetric Dilutor.

Typically, preparation of solid samples requires careful measuring and calculation for dilution. You can forget about the math and calculators and don't bother adding or subtracting sample from the bag! Gravimat automatically dilutes a solid sample with the appropriate mass of solvent. Any diluting and dispensing methods used in the lab can be selected directly on the screen. A customized dilution factor is saved automatically to be applied to the following dilution.

Other features include:

- "Booster" Kit to increase dispensing velocity for large volumes
- Large-screen display for easy viewing
- Stainless steel material allows for easy cleaning
- Barcode reader and printer allows the end user to capture date, time, user code, pump selection, sample ID, weight dilution ratio and more
- Multi-head pump options

The BagSystem from Spiral Biotech consists of an entire line of dilutors, the BagMixer®, gamma-sterilized filter bags and pipettes, storage racks, and many other accessories. Spiral Biotech will address your solid-sample handling needs.



# Advanced Instruments Introduces the SomaScope™ for Somatic Cell Quantification in Raw Milk

The SomaScope provides a cost effective way to count somatic cells in unpasteurized milk. The instrument features high throughput, dual photomultipliers for outstanding accuracy, and proven reliability at an unmatched price. Its modular construction, including open access to the Sample Preparation Unit and other components, allows easy maintenance and parts replacement.

The SomaScope is also one of the fastest instruments in its class, with integrated automation that maximizes your analyses of somatic cells in unpasteurized milk. Accuracy and repeatability exceed industry-accepted standards for automated laboratory analyzers with a throughput rate of up to 400 samples an hour. A simple user interface makes it easy to operate and no external computer is required for the manual version. A standard RS-232 enables data transmission to a central data management system and a printer output port allows local printing of results.

The SomaScope is designed to meet the needs of dairy processors requiring accurate determination of somatic cells in a cost effective design. Hundreds of SomaScopes are in service at major dairy processing companies worldwide.

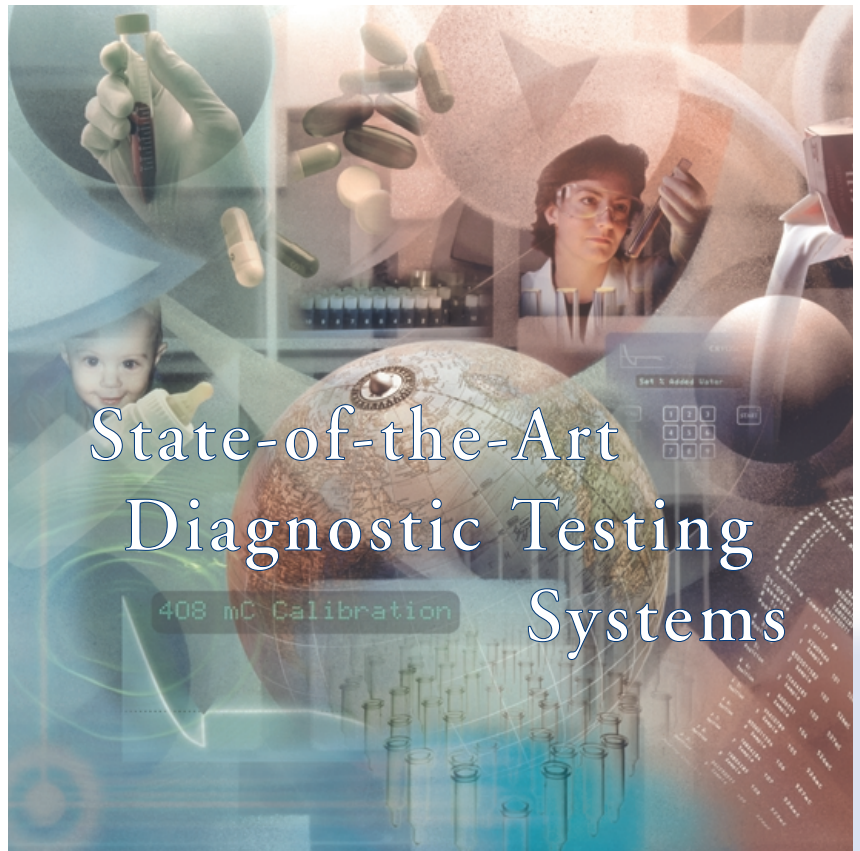
Field service and technical support is available on a 24-hour basis from Advanced Instruments, Inc. In addition, all supplies, accessories, and spare parts are available from our headquarters in Norwood, MA.



# Advanced Instruments, Inc.: Celebrating 50 Years of Diagnostic Excellence

Early in 1955, AI pioneered the development and popularized a new freezing-point application, milk cryoscopy, used for measuring added water in milk. Added water has long been a threat to the quality of dairy products. If the water contains copper, iron or sulfur, the milk may have a metallic taste or oxidized flavor. Concentrations of less than 1ppm of iron can cause a change in the taste of milk. Added water can also result in elevated coliform and psychrophilic bacteria, causing accelerated degradation of the raw milk. Dairy processors were very receptive to the obvious improvements AI's cryoscopes offered over more primitive cryoscopes on the market at that time.

Today, AI continues to lead its competitors with process and precision improvements, meeting and exceeding pasteurization-detection criteria with its Fluorophos® ALP test. Advanced Instruments' dairy solutions panel also includes infrared-based spectrometry for the analysis of milk components, flow-cytometry for the counting of somatic cells, and a comprehensive set of quality, automated microbiology systems. AI's microbiology product line includes automated microbial plating and enumeration systems, and solid/liquid sample preparation equipment. These complement Advanced Instruments' cryoscopy and dairy analysis products, to help you implement a comprehensive HACCP, quality control, or process-monitoring/analysis program.



## *Dairy Processors Working With Delta Instruments...continued from page 1*

For more than 25 years Delta Instruments has been building analytical equipment for milk testing. In 1991, Delta produced the first LactoScope milk analysis unit based on the FTIR technology. In 2003, Advanced Instruments, Inc., acquired Delta Instruments. The Advanced Instruments group of companies are able to offer an exciting product portfolio to the dairy industry with a variety of technologies and solutions. These include ALP testing for monitoring your pasteurization process, Cryoscopes for the screening of added water in milk, somatic cell counting for raw milk, and component analysis for milk, milk powders, creams, whey, whey concentrates, cheeses, ice creams, and many more.

**Curious?**

**Interested in what technologies we can offer you?**



Call, consult with us, and try us out!

We look forward to doing business with you.

Different by design, better by far! Delta Instruments, your partner in milk analysis.





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## Is your milk analyzer's life running out of time?

If the answer is yes, then it's time to learn about Advanced Instruments' complete line of analytical instrumentation for dairy labs and dairy processing companies worldwide. If your milk analyzer is aging or lacking the support that it deserves, contact us to learn about Advanced Instruments' complete product portfolio.

Why wait? Optimal performance and worry-free support is just a phone call away.

800-364-8860

info@aicompanies.com

If you are interested in receiving this newsletter electronically, please visit:

[www.aicompanies.com/dairynews](http://www.aicompanies.com/dairynews)

## Upcoming EVENTS

### Food Safety Summit

March 16 – March 18

Washington, D.C.

Booth #444

## Technical Support

### 24-Hour Support,

### 7 Days a Week

Technical Support is available around the clock for all Advanced Instruments, Fiske® Associates, Spiral Biotech, and Delta Instruments products.

Contact us toll free at  
1-800-364-8860 or at +1-781-320-9000.  
FAX us at +1-781-320-8181 or by  
email at [techsupport@aicompanies.com](mailto:techsupport@aicompanies.com).

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

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## User Tips

### Cryoscope Repeatability Tips

For best results treat all samples, as well as standards and reference solutions, uniformly before the test. All samples should be at the same temperature [room temp.], sample volumes should be uniform [ +/- 2% ], sample tubes or tips should be uniform in size and clean.

If an occasional sample produces irregular results, discard obviously discrepant readings as long as the instrument has been producing accurate readings repeatedly. For repeat runs, use additional samples from the same source.

### Maintaining the Advanced LactoScope FTIR Accuracy

Advanced Instruments' Lactoscope FTIR is manufactured to provide years of accurate and repeatable measurement. To ensure repeatable results, we recommend that you run a daily "check sample". When sample measurement is out of range, one of the following solutions can help get you back into acceptable measurement limits:

**CLEANING** - Although the FTIR is equipped with automatic cleaning, when measuring a high number of samples or certain products (Ice Cream Mixes, Heavy Creams, Chocolate Milk, etc.), additional cleaning may be necessary. Advanced Instruments recommends running twenty replicates of a heated, concentrated cleaner solution (we recommend a 20% Decon solution).

**VOLUME** - The measurement can be affected by changes in sample volume. To check your sample volume, simply run a sample of distilled water through the instrument and collect from the waste valve in a graduated cylinder. Then divide the volume collected by the number of pump strokes. This number should be approximately 0.4 mL/pump stroke (0.37-0.43 is acceptable). If volume is too low, look for a blockage in the tubing (replace), waste valve (clean), milk filter (clean), or air in the system (open homogenizer). If volume is too high, it is likely that one of the check valves or homogenizer is faulty.

**RECALIBRATION** - This will help you bring the instrument back into range.

Use a set of certified reference samples to increase accuracy.

For questions on this, please contact Advanced Instruments Technical Support at 1-800-364-8860