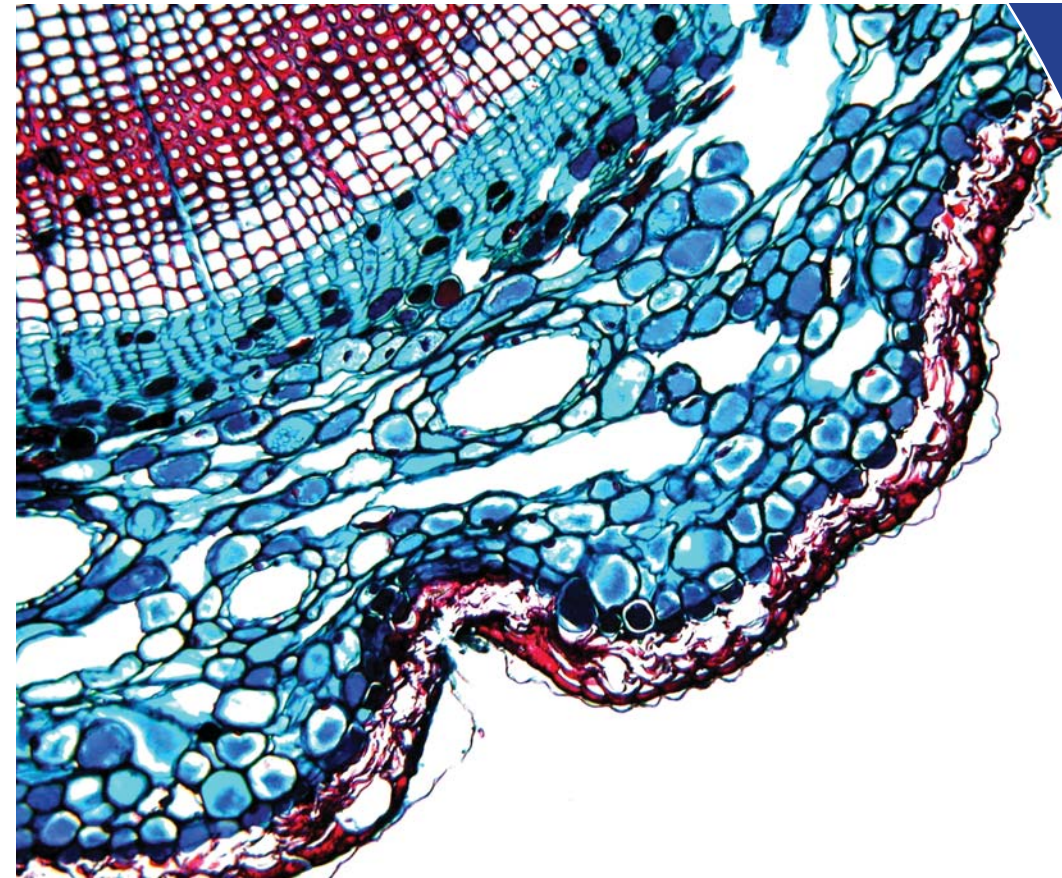


Fall 2011

The Caframo Mix

For Laboratory Equipment Sales Professionals



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The Science of Life

The growing Life Science Market captures a significant share of the laboratory equipment business. This diverse category encompasses water treatment and purification, cell biology, microfluidics, immunochemistry, genomics, food science, stem cell research, and more.

Life Science, by definition, involves the study of living organisms and ultimately affects every living thing (especially the human organism) in some way. The water we drink, medical cures and disease immunization, the food we produce, and HIV testing are only a small sample. With such a diverse inclusion, the Life Science market certainly deserves our focused attention.

This issue reveals Caframo overhead stirrers used in ways you may not expect. We play a part in ending world hunger, maintaining safe water supplies, and immunizing the world against disease. Take a moment to look inside...the science of Life Science.

Above photo: corn grain tissue under the microscope



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World Food Day

October 16, 2011

World Food Day (WFD) is a worldwide event designed to increase awareness, understanding and informed, year-around action to alleviate hunger. It is observed each October 16th in recognition of the founding of the UN Food and Agriculture Organization (FAO) in 1945. The first World Food Day was in 1981. In the United States the endeavor is sponsored by 450 national, private voluntary organizations.

Food science research and technology is a critical part of the solution to world hunger. Scientists continue to improve crop tolerance to various environmental stresses while maintaining the high yields necessary to support a growing global population. Overhead stirrers play an important part in this research, mixing viscous corn slurries as part of a larger process used in genetic research.

For more information, visit www.worldfooddayusa.org.

Growing

Where would cell culture be without the petri dish? Caframo stirrers are used in the production of media prep (agar). This media is the most essential tool for cell research of every kind such as immunochemistry, cell biology, stem cell research and more.



The Dirty Side of Life

Coagulation and Flocculation

Water treatment is one of the many industries relying on the tough durability of Caframo High Torque Stirrers. Transforming waste water into safe water requires a complicated series of steps and processes including coagulation and flocculation.

The demonstration shown above uses Potassium Aluminum Sulfate, an alum, as a flocculant to purify water. Alum is added to the dirty water, rapidly mixed using a Caframo BDC1850, and allowed to settle. The beaker mixed with the flocculant displays a clear upper, and dirty lower layer while the other is uniformly cloudy.

Coagulation and flocculation are used to separate suspended solids from water. Suspended solids in water are negatively charged, repel each other, collide and therefore, remain in suspension (will not settle out). Removing these particles requires proper coagulation and flocculation.

Negatively charged suspended solids are neutralized with the addition of oppositely charged coagulant chemicals. Once neutralized, the particles are capable of sticking together when they collide, creating microfloc particles.

A high-energy, rapid mix is required to properly disperse coagulant and promote particle collisions. Each step in the water treatment process is reliant on the previous step. Insufficient mixing will leave the coagulation step incomplete, potentially spoiling the entire process.

The next step, flocculation is a gentle mixing stage during which the microfloc particles collide, bond, and increase in size and weight. Once floc has reached optimum size and strength, water is ready for sedimentation and further processing.



Mixing Experts

Congratulations!

Suzanne Kresta, NAMF President and Professor at the Department of Chemical and Materials Engineering, University of Alberta has been awarded the A.C. Rutherford Award for Excellence in Teaching—the highest teaching award the University of Alberta bestows upon its professors.

Michael Tettenborn, P.Eng (mtettenborn@caframo.com) is Caframo's Engineering Manager and designer of Caframo's line of Real Torque Digital™, ReversingDigital™, CompactDigital™ and Petite Digital stirrers.

Professor David Dickey, Ph.D. (d.dickey@mixtech.com) is an independent consultant with his own business, called MixTech, Inc. in Dayton, Ohio. Contact David by telephone (937) 431-1446 or e-mail.

Professor Suzanne Kresta, Ph.D. (suzanne.kresta@ualberta.ca) has been working in the field of turbulent mixing since 1988. She is coeditor of the North American Mixing Forum (NAMF) Industrial Mixing Handbook. The NAMF web site, www.mixing.net, is an excellent mixing resource.

We would love to hear from you.

Comments, questions, feedback, topics of interest - we are here for you!

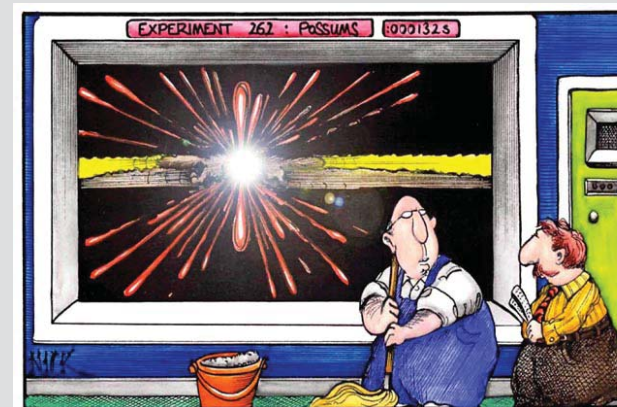


Pictured left to right: Andre, Melena, Marta

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"Sure been a heap more work for ME around here since those Biologists got granted research time on the ol' Supercollider..."

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