

**ERNEST F. FULLAM, INC.**

Latham, NY

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In October 1953, after an eight year tour at the GE R&D Center in Schenectady, Ernest Fullam left to devote full time to the company bearing his name. The company was founded to do research and consulting for customers who had no laboratory of their own, or were overloaded with work. The first lab consisted of a single room housing a sample preparation area, a vacuum evaporator and an RCA EMU-2 microscope. That and a 5' x 9' darkroom occupied less than a quarter of the basement of his house. The office was in a spare room upstairs.

The main activity was materials analysis by means of light or electron microscopy. The company began to grow and soon filled half, then all of the basement. A machine shop was added to provide equipment for use in-house. Our first commercial product, a carbon grating replica for magnification calibration of a TEM, was soon introduced. With the machine shop in operation, this was followed with a carbon evaporation kit. We thus became the first of the small family-owned EM accessories companies.

By 1957 the company employed nine people and had expanded into the garage and half of the upstairs of the house. Construction of a new lab began that year and we moved in the following summer. While the hardware and accessories business continued to grow, consulting and research remained the primary activity of the company. X-ray microscopy and diffraction equipment was added, along with another TEM. We built our own microprobe, we developed cutting and shredding machines, we analyzed everything from hog bristles to cigarette smoke. The world's first duster, the EFFADUSTER, was introduced in 1960. It was Mrs. Fullam's idea and was made out of a Freon powered foghorn. The handmade prototype is in our lobby showcase and still works. The Sixties saw continued expansion with additions to the lab, the arrival of our first SEM, two more TEMs, and a new JEOL microprobe. The product line expanded into portable evaporators, electron diffraction measuring equipment, custom stages and sample holders. Biological stains, embedding media and microtomy supplies were added. We built particle collectors that flew on the Spacelab and a stage controller to count the particles they collected.

After several years in the machine tool industry, Ernest's oldest son Peter joined the company in 1974. The consulting business had leveled off by then, but growth continued in the supplies and accessories side. Product development accelerated and manufacturing and warehouse space was added. Peter Fullam became president in 1978. The early 1980s brought annual growth rates approaching 20%. The two 1960s vintage TEMs were replaced by a new JEOL 100CX and a JEOL T-300 replaced the JSM U-2. Peter's wife, Dianne, joined the company in 1979. She now manages our advertising, publicity and trade show exhibits and runs the desktop publishing computer.

By the late 80s, changes were sweeping the R&D field. The consulting business had shrunk to a small fraction of total sales. Ernest and Barbara Fullam had retired, the microprobe and X-ray equipment had been sold and there were long days of eerie silence in the EM lab. The consulting customers had bought their own microscopes and were now buying supplies for them. In 1988 the hard decision was made to exit the consulting business. Just at that moment a local environmental testing concern wanted to get into the asbestos analysis business. They bought the consulting operation and much of the equipment, then rented the space it occupied in our lab, as they did not have an EM facility.

As the 90s arrived, we added a CAD system to speed up engineering and design work. We introduced new carbon and sputter coaters and a bench top turbo evaporator. Custom accessories, vacuum equipment, video interfaces, mechanical testing substages and improved micromanipulators remain vital parts of our product line. ■

## The LAMENT of the ELECTRON MICROSCOPE

Gary T. Faulkner, Dalhousie University

*With electronic wizardary to study the beyond  
Our quest for knowledge goes ever on*

*We ponder structural detail that seems so real  
As we set behind consoles of stainless steel,  
Viewing the static images etched in green  
Establishing new theories that appear so keen*

*But sometimes doubts rise to grasp the significance  
That life in resin was never in existence  
That our peek at reality, is no more  
Than observations of a new art form*

*No better term for this science, to be sure  
Has been coined the "ultra" - structure  
For we look not at, but beyond, God's creation  
Because life must change after glutaraldehyde  
fixation*

## Why Buy Edax?

Mr. John White had been given the difficult job of deciding for his company which EDS system to buy. How was he going to set about making this decision? A question many microanalysts in the same position would be asking themselves.

John decided to concentrate on the basics. He realized that good presentations and reports were important but if the EDS system was not capable of correctly identifying the elements in his sample then nothing else was going to matter. He chose a test sample to use in comparing different systems that he thought would be impossible to identify correctly. He chose Mississippi mud, an abrasive used for fine optical lens grinding. What makes the identification difficult is the many overlapping L lines of elements present (Cs, Ba, La, Ce, Pr and Nd).

The sample was sent to four major EDS manufacturers. The ONLY one to identify all six elements correctly was EDAX.

Having evaluated the results, John White's decision was now easy. The only company to correctly identify the elements had to be his choice: EDAX.

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- ✓ **JEOL JSM 35C with four crystal spectrometer, Krisel Control Automation package, Kevex SiLi Detector with Tracor MCA.** Purchased 1975, asking \$25,000 for complete system or split - \$15,000 for spectrometer and automation OR - \$5,000 SiLi Detector and MCA OR - \$5,000 for bare JSM 35C. Contact Christos Hadidiacos, Carnegie Geophysical Laboratory: (301)686-2414.
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- ✓ **AMRAY 1400 Scanning Electron Microscope with NORAN Series 5400 Energy Dispersive X-ray System.** SEM under full service contract since original purchase. EXCELLENT CONDITION. \$25,000. Phone: (607)974-3841.

## USED EQUIPMENT WANTED

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