

GURUS OF GAS ANALYSIS HALL OF FAME
William J. Kroll, Chairman and CEO of Matheson Tri-Gas Inc.
By Lisa Bergson

A new feature of *Gases & Instrumentation* on-line, Gurus profiles active inventors, entrepreneurs, power users, and scientists who have contributed substantially to the advancement of gas analysis.

Name a man who can build a billion-dollar-plus gas company while keeping his eye on contaminants in the parts per billion. Most likely, it's William J. Kroll, the popular chairman and CEO of Matheson Tri-Gas Inc. since 2004. Bill, as he's widely known, is a connoisseur of good technology, investing in the best available analytical capabilities and gas delivery systems. If he can't find what Matheson needs, he'll work with suppliers to develop it.

He is equally skilled in business development and forging connections. Since 2005, sales have nearly tripled as Bill, has steered production and strategic acquisitions for Matheson, a unit of the Taiyo Nippon Sanso Corporation. Yet that hard work has dimmed none of his enthusiasm, curiosity and extraordinary ebullience. Bill knows and remembers vast numbers of people and follows up quickly on even the most casual of commitments. "It's a matter of respect," he says.

Bill is among the gas company leaders who have done the most to promote significant advances in gas analysis. For example, he was an early champion of Tiger Optics' Continuous Wave Cavity Ring-Down Spectroscopy and served as one of the initial members of the company's technology review board when Tiger developed its first commercial applications. "I liked the idea of having a spectral snapshot in a very quick duty cycle. It's more dynamic," Bill says, reflecting on his advisory role.

"With his background in devices, equipment, and materials, Bill actually understands gas contaminants and their effect on the device," say Terry Francis, Matheson's CTO, who has known Bill for close to four decades. "He's unusual in that he's a technologist and a marketing guy."

As a young man, Bill dreamed of studying chemistry at De Pauw University, but he could not afford the tuition. Instead, he was "found" by a professor at a junior college in Chicago who also taught at Northwestern University and arranged interviews on his behalf, as Bill later recounted for the university's alumni association. No financial aid was available in the chemistry department, but the engineering school wanted him. "That's how I wound up as an engineering major." He earned both his undergraduate and master's degrees from the Robert R. McCormick School of Engineering and Applied Science.

At Northwestern, Bill was drawn to materials science, based on its breadth: "It touched on a lot of related areas, from the physics to the chemistry to the engineering aspects. I thought, 'Hey, this is pretty good.'" While still in school, he was recruited to join the research group at AT&T/Bell Labs. "I was fascinated by the new things," he recalls, describing his involvement with electronic materials as early as 1970.

At AT&T/Bell Labs, Bill turned to management, particularly sales and marketing, and his career began to take off. The major gas companies of the day -- Airco, Liquid Carbonic, and Union Carbide -- recognized the need for marketing people who understood the Semi industry. All three vied for Bill. "I picked the one that was the weakest, where I could make the biggest impact," he says.

Airco (now Linde BOC) proved to be “very good on training” and paid for Bill to attend Wharton’s prestigious Executive MBA program. He was appointed general manager of Airco’s Electronics & Specialty Gases. “We were the first guys to make arsine,” which was used for stable standards needed for pollution control, Bill says. The project triggered his respect for gas analysis. “With arsine you could get an exchange reaction that kicked up moisture. We realized that if you can’t measure it, you can’t control it.”

After Airco, Bill served Matheson twice, interrupted by a star turn at Emcore, where he spearheaded that company’s initial public offering. As Emcore’s executive vice president of business development, Bill integrated one of that era’s top-end moisture analyzers into all of the company’s tools. “There was too much money and material at risk,” says Bill, with his renowned command of the details. “You’re growing on things like sapphire and other more expensive substrate materials. The deposition process took five to six *hours*. Hydrogen is a big part of the reaction in there, so we needed a moisture analyzer in case the palladium purifier died.”

Asked to describe his dream gas analyzer today, Bill throws down the gauntlet for instrument makers: “I would invent a real-time, non-contact spectral analyzer, with a really wild-ass photo-detector, one optical path, and multiple radiation sources.” We’ll see what we can do.

Lisa Bergson is President & CEO of MEECO, Inc. and Tiger Optics, LLC and a former journalist.

If you would like to nominate a candidate to the “GURUS OF GAS ANALYSIS” hall of fame, send your recommendation and contact information to lbergson@tigeroptics.com