

WATER DESALINATION REPORT

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IDA Keynote Speaker Profile A MEMBRANE SURVIVOR

Survivor's Club, a new book by Ben Sherwood, chronicles cases in which people beat the odds and survived in the face of adversities ranging from financial trouble and serious illnesses to car accidents. In one vignette, Sherwood describes a 1991 plane crash in which a US Air jet struck a commuter plane while landing in Los Angeles. All passengers on the commuter plane and 22 of the 89 people aboard the jet were killed.

The safety board investigating the crash said 18 deaths occurred because panicked passengers blocked the aisles as they scrambled over one another trying to get out the overwing emergency exit.

David H Koch was sitting in first class on the jet. When it skidded to a stop, he ran to the middle of the plane to escape with everyone else, but found himself at the back of a line going nowhere. After collecting his thoughts, he realized that if smoke was entering the front of the plane, there might be an opening that also offered a way out. He returned to first class where he jumped out the galley door, past the flames from the burning commuter plane, to the ground below.

It wasn't the first time Koch followed his instincts and found success where others had failed. His business instincts and a passion for the membrane industry have led to several innovations that will be on exhibit at the coming IDA World Congress, where Koch will be the keynote speaker at the opening ceremonies.

Like his father, Fred Koch – the founder of Koch Industries, the largest, privately held US company – David, and two of his three brothers, studied chemical engineering at the Massachusetts Institute of Technology (MIT). After David and his twin brother William received their master's degrees, David went on to work as a process design engineer for Amicon and Arthur D. Little, while William continued to study at MIT under Professor Ray Baddour.

It was Baddour's separation process work that first piqued William's interest in membrane technology. In 1963, Koch Industries provided Baddour with seed money to start Abcor and commercialize his research. Of all the Abcor products, its tubular UF membrane was the most successful and a one-inch diameter, ten-foot long version proved very effective

at recovering and concentrating paint in electrocoating systems. The evolution of that original product is still used in electrocoating systems around the world.

Meanwhile, David joined Koch Industries in 1970 as a field salesman, and after the company acquired Abcor in 1977, he replaced its president and ran the company for the next three years. By 1980, Abcor had also developed a spiral-wound UF and changed its name to Koch Membrane Systems (KMS).

KMS acquired Romicon, the developer of a hollow-fiber capillary UF in 1990, and eight years later, it acquired Fluid Systems, the company that commercialized the spiral-wound RO in the mid-1960s under the ROGA brand. Puron's MBR technology was added to KMS's arsenal of membrane products in 2004.

Although he is a board member and 42 percent owner of Koch Industries, Koch spends two days a week at KMS. When *WDR* asked him what it is about membranes that has maintained his interest after 40 years, he said, "People often ask me why the executive vice president and major shareholder of a \$115 billion corporation spends two days a week with a \$100 million subsidiary? They wonder why I'm not on a beach somewhere. Well, I find this technology to be extremely challenging and intellectually stimulating, and the opportunities in this field are tremendous.



Then



Now

Koch captained the MIT basketball team in 1962 and held the single-game scoring record until it was broken this year. Photos courtesy MIT Athletic Department.

Even though they are essential to our way of life, refining and petrochemical industries are unpopular to many people these days and Koch Industries frequently receives criticism for its involvement in them. On the other hand, people are enormously supportive of our water activities. I like to say that companies that can supply effective water treatment systems are on the side of the angels, both in the eyes of the public and the government.”

One doesn't have to spend much time talking about water with Koch before his passion for the subject becomes obvious. He is KMS's most aggressive and unapologetic salesman, always ready to talk about the company's latest innovation. He is eager to expound on economies-of-scale – his guiding philosophy – noting that he commissioned the development of the company's 18-inch diameter MegaMagnum more than ten years ago and insisted on building a new state-of-the-art manufacturing facility to construct the elements.

“The new composite pressure housing that we will be exhibiting in Dubai is the last piece of the large-diameter puzzle. After years of work with various vendors, we partnered with a composite vessel manufacturer to develop the housing. We now have a low cost vessel that is rated to operate at pressures up to 1200 psi [83 bar], which has been designed and tested to ASME Code 10 requirements.”

Outside the world of refineries, chemicals and membranes, Koch is a well-known philanthropist who regularly and very generously contributes to hospitals, universities and charities. He is a major contributor to the PBS television series *Nova*, and to the Smithsonian Institution. The night before he is to arrive in Dubai to give the IDA keynote address, the New York Ballet will honor him by renaming its Lincoln Center theatre after him.

As with most assertive, headstrong executives, it's not difficult to find people who don't always see eye-to-eye with Koch. A discussion with desalters who have worked with him over the last 40 years is sure to include several colorful anecdotes.

But it's difficult to argue with his success and track record for identifying innovative ideas. You can be sure that he won't be stuck at the back of another line for very long. “At 69, I'm working harder than I ever have and I love it. They will have to carry me out the door, feet first,” he said.

He lives in New York with his wife and three young children.