LIFE MEMBER
CLAUDE GENTAZ

Claude Gentaz *earned a metallurgical engineering degree and then three master's degrees — one in physics, one in metallurgy and one in economics. Beginning in 1966, he devoted 10 years to research and development with Battelle, a non-profit American research organization, with labs in Geneva, Switzerland. His research was in molten salts and slags thermochemistry applied to metallurgy. "We already had energy and environment concerns as guidelines," he recalled in an interview with* Iron & Steel Technolgy. *His first projects included a global technical study of iron and steel processes managed by Battelle-Columbus and an evaluation of calcium carbide's potential applications. He spent the year 1970 in the United States for management training at Battelle's Columbus labs. During that year, he was introduced to several members of the Iron & Steel Society (ISS), including Jack. R. Miller, William Goldberger and Tom Leontis.*

Back in Geneva, Mr. Gentaz was in charge of a 40-person team working on extractive metallurgy. "It was a very intense period," he said of this time. "We organized a European conference on molten salts applications. Our basic research on solutions of salt-like carbides and nitrides was leading to industrial developments, such as a cyanide-free carburizing product, a calcium electro-winning process and a pig iron desulfurizing slag. In addition to conferences, this was also a time of many papers and patents."

Mr. Gentaz then joined Pechiney SA, at that time a major aluminum conglomerate based in France, in order to broaden his experience. He said regarding this transition, "After six months of intense submerged arc furnace training, I was offered the position of plant manager to put on-stream a large ferrosilicon plant in Puerto Ordaz, Venezuela. Just before leaving France, I joined ISS, encouraged by Jean-Marie Henry of Bozel, an ISS member and a pioneer in the development of calcium use in steelmaking.

"After two-and-a-half years of intense and diversified activity," continued Gentaz, "we decided to return to France. I was appointed manager of a medium-sized plant and vice president of R&D. But after three years in France, I became vice president of the company's Argentine affiliation, with headquarters in Buenos Aires and a plant in the Andes. This was another exciting professional experience for me, as well as a humanizing one: for a few months we witnessed the Falklands War with the U.K., and we saw the shift from dictatorship to democracy. Once again, after three years, I was offered the chance to come back to France, this time in Paris, to build up a marketing department for the ferroalloys business.

"After 10 years of this professionally marvelous yet hectic journey, we decided to return to Geneva. I became a partner in a small consulting team, Transtec, in charge of developing its metallurgical activity. During the 1980s and '90s, there were so many emerging and developing iron and steel processes that it was necessary to compare their technical and economical performances. As many of these processes were American, I had the opportunity to meet many ISS members: Egil Aukrust, Peter J. Koros, Gordon H. Geiger, Louise Brinkmeyer, David F. Wood, James Trunzo, Donald R. MacRae, Alberto R. Hassan, Oscar G. Dam, John T. Kopfe,

John A. Vallomy and many others. The company benefited a great deal from ISS, its members and its meetings.

"I have been personally involved in the creation of two ferroalloy companies in France. One is a ferrochromium plant in Dunkirk, France. After several years, the company went into bankruptcy, and we looked into the feasibility of making other products. Today the plant specializes in valorizing stainless steel dusts.

"The second company was a manganese alloys company, also set up in Dunkirk. We developed a pilot plant for a combined steel slag and dust valorization process, an EAF slag foaming agent, and the technology transfer of the submerged arc furnace (SAF) to scrap melting, a concept recently adopted by others. We proposed a method for increasing BOF productivity by generating half the amount of slag. We also developed a SAF thermo-metallurgical model linking product energy consumption and electrical operating conditions.

"At last the time arrived for me to engage in other activities without completely abandoning my past. For instance, I was given the opportunity to put together my experiences on aluminum recycling. In 2008, I earned a Ph.D. in industrial ecology at the University of Lausanne on 'aluminum industry, energy and mass flows: recycling reality and challenges.' I have also been asked to give lectures on industrial ecology at a few French and Swiss universities.

"Over the years, membership in AIST has put me in contact with steel people and has enabled me to stay up-to-date on the worldwide steel industry. In recent years, AIST's growing global footprint has been very useful and important for those of us outside of North America.

"Today, I focus on worldwide energy problems and the impact which mankind has on climate. An increasing world population will require a more intense focus on the energy and water needed to support it. Mankind will also need to find better steel properties (lightness, corrosion resistance, etc.), longer-life steels, better valorization of the end-of-life products and so on. It is a huge undertaking. The steel industry, the second largest by its tonnage, has already dramatically reduced its CO_2 and thermal emissions. But more innovation is required everywhere — through waste valorization, energy savings, 'sustainable development' and steel's applications.

"I trust that we can overcome this tremendous challenge, a challenge much larger than the oil crisis of the 1970s. This is a marvelous job for young people! I encourage them to contribute usefully to make our world a better place." ✦


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1. Handling moon rocks in Richland, Wash., 1970.

2. Gentaz with his children, Valérie and Nicolas, 1970.

3. With the calcium pilot process team, 1974.

4. With Venezuelan visitors in the FeSi plant, 1977.

5. During the construction of the ferrochromium plant, 1993.

6. Gentaz and his wife, Monique, in Venice, Italy, 2012.