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GUEST EDITORIAL

Green Chemistry

Industries utilizing chemistry and chemical engineering have been major contributors to worldwide economic development over the past century, and yet the chemical industry is often taken to task for many serious environmental problems. The bad public image of modern chemistry has resulted in an alarming decrease in the number of talented high-school students who choose to pursue advanced studies and careers in the field. We chemists, biochemists, and chemical engineers should therefore do all that we can to change the negative image of the chemical industry. We must raise public awareness of the chemical community's positive and invaluable contributions to the continuous improvement of the quality of everyday life.

One has only to observe advertisements on television to see how, in today's world, the media greatly influence the images of various industries. Companies providing information technologies, for example, spend a significant amount of money on sustaining a positive image, but, apart from pharmaceutical companies touting designer drugs, chemical companies rarely invest in advertising campaigns to demonstrate their advancements and contributions. We must learn from other industries how to present our products and processes in a competitive environment for the general public's positive response. We have to convince the media that the introduction of environmentally friendly processes and products is newsworthy enough to appear on the front page or in the evening news broadcast.

I attended a fashion show in the Fashion Cafe in Budapest, Hungary, two years ago. Most of the participants were young designers working on ties, dresses, shoes, jewelry, etc. When, during the greetings and introductions, they found out that I am a chemist, their expressions turned rather sour, indicating their concerns. After hearing a few unpleasant comments (and consuming a few cool beers), I asked myself a fundamental question: *What is in chemistry that I love so much?* As a catalytic chemist, I mostly dream about (and design) marvelous catalysts, and then work to bring them to life in the laboratory. This, I thought, is probably not much different from designing a beautiful dress or an attractive shoe! As

I sat through the fashion show I made a very important decision: I will be a *molecular designer* in the future! Since then, I always introduce myself to non-chemists as a molecular designer. The most frequent response is along the lines of "Wahoo! This must be an interesting and exciting job." "Of course," I happily agree, "and I have been designing molecules more or less successfully for more than two decades." I can once again take pride in preparing molecules or, even better, chemicals. If you think that I have given up chemistry, I can assure you that I have not; I have just brought the mentality of my fashion designer friends to the molecular level.

Worldwide demand for environmentally friendly chemical processes and products requires the development of novel and cost-effective approaches to pollution prevention. One of the most attractive concepts for pollution prevention is green chemistry, which is best defined as *the utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture, and applications of chemical products* (Anastas, P.; Warner, J. *Green Chemistry: Theory and Practice*; Oxford University Press: Oxford, 1998). Although some of these principles seem trivial, their combined use frequently requires the redesign of chemical products or processes. Consequently, green chemistry focuses on the fundamentals of chemical research. Finally, it is important to note that the rapid development of green chemistry is due to the simple recognition that environmentally friendly products and processes are economical in the long term.

I hope that the excellent articles presented in this special issue focusing on green chemistry will convince you to become part of the green evolution, at the end of which we could lose the term "green" and be proud to call ourselves chemists and chemical engineers again.

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