



## Hold on to the noble philosophy that commands “technologies of God”

Kazuo INAMORI

Founder and Chairman Emeritus, Kyocera Corporation

At college, my major was applied chemistry, which was the most popular subject at the time. I specialized in organic chemistry, which included petrochemicals or the like, and hoped to join a pharmaceutical corporation and develop new medicines in the future.

However, the year of my graduation in 1955 was a very difficult year to find employment, being only ten years after the end of World War II and also being during the period of the post-Korean War recession. Thus, my hopes were not realized, and I entered a company that was manufacturing ceramic insulators in Kyoto. At this company, I was engaged in the synthesis of new materials, even though my experience there was in the field of inorganic chemistry. Afterwards, I founded Kyocera Corporation together with the colleagues who recognized my technological skills, and have since created a large variety of products applying the technology of fine ceramics.

People involved in chemistry, including myself, have been similarly producing new materials and products one after another at laboratories and corporations, be it organic or inorganic. Many of these have brought great benefits to the development of human society. For example, the application of chemical technology in the development of fertilizers and pesticides has enabled a dramatic increase in food production. In addition, artificial compounds such as plastics, which can be easily processed, have been used as raw materials for the mass production of everyday commodities and various industrial products, and have thus supported our modern material civilization.

But then again, if we reflect on these issues, the creation of new materials that do not exist in the natural world has been made possible for the first time in the modern age, but was thought to have been made only by God until then. This means that man has acquired the powers that only God could have possessed and has started to freely make use of these powers. I have described this act as man's “acquisition of technologies of God.”

In recent years, however, it has become clear that there are also negative aspects to these new man-made materials. For example, chemical detergents with strong cleansing power used by households may become a major cause of water pollution if

they are poured into rivers and seas before being broken down. In addition, it has been found that dioxins emitted through the incineration of vinyl chloride products are human carcinogens.

As seen above, the “technologies of God” to create new materials, while on the one hand have produced excellent products that enrich our lives, have also produced materials that cause great harm. It can be said that this is a consequence of man's use, with narrow wisdom and to satisfy human desires, of these “technologies of God” which only Almighty God was previously able to use.

As a consequence, what should we as researchers, who have become able to use such sophisticated technologies as may be called “technologies of God,” do to create products that can truly contribute to the progress and development of human society?

I think the most important thing is to allow researchers and chemists to preserve their correct thinking and philosophy as human beings. Of course, researchers and chemists must think freely and vigorously in their attempts to achieve creative work. However, such activities must be based on the unbending philosophy of conducting research and development for the “good of the people and the public.” That is to say, in pursuing new technologies and discoveries, researchers must thoroughly consider whether the pursuit is for the real benefit of “the people and the public,” but not out of their own ego. For this, a philosophy as a researcher is required.

Needless to say, chemists must continue their studies to improve their abilities. However, now that we have acquired these “technologies of God,” they must also put just as much enthusiasm into efforts to improving their way of thinking and philosophy. I strongly believe that only people who strive to improve not only their abilities, but also themselves as a person can produce results that bring both material happiness and intellectual growth to mankind.

© 2011 The Chemical Society of Japan

The *Kagaku to Kogyo* (Chemistry & Chemical Industry) Editorial is responsible for the English-translated article.