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Social and Economic Impacts of Applied Mineralogy

Tsutomu Sato

Laboratory of Environmental Geology
Faculty of Engineering, Hokkaido University
Kita 13 Nishi 8, Kita-Ku, Sapporo 060-8628, Japan
Email: tomsato@eng.hokudai.ac.jp

Most of us use the products of modern technology without fully appreciating which minerals are required to make a cell phone, a modern internal combustion engine, an aluminum can, ceramics and the concrete used in buildings. For example, in Japan, all students in junior high school have to learn "what are minerals" and "what is the definition of minerals" with some examples from rock-forming minerals such as quartz, feldspar, mica, and so on, although the author does not know the situation of minerals in education at other countries. I suppose that the situation is not so different in different countries. However, as stated in the special issue of Elements on "Social and economic impact of geochemistry", minerals are definitely central not only to our natural and technological environments but also to our social and economic environments. Environmental mineralogy is a fast-growing multidisciplinary field, addressing major societal concerns about the impact of anthropogenic activities on the global ecosystem. However, mineralogists are still not very good at communicating the social and economic impacts of mineralogy to the public. Of course, minerals may sometimes inspire us to design new materials for advanced technologies. Minerals and mineralogical processes such as adsorption, sorption, and precipitation may play an important role to solve problems in negative legacy such as pollution, health effect, and waste disposal. The author, as an environmental mineralogist, has been involved in many activities against the negative legacies of the accident and contamination and positive new discovery of advance technology. In this presentation, the author shows how applied mineralogy has been and will be an important component in social and economic impacts based on the author's experiences.