

## 1. Preface

In the recent years the international community has become borderless in which firms from different countries carry out activities across national borders in search of more advantageous conditions and in which people, things, money and services freely come and go. With the growth of such borderless activities problems such as of trade and investment friction and acceptance of foreign workers have become prevalent between countries, with the result that they are energetically discussing measures to solve these problems.

In the area of science and technology also foreign countries have come to make demands on and pose problems for Japan regarding basic research and research and technology interchange, this means that Japan is being pressed to make an appropriate response. It will be a natural international obligation for Japan which has become an economic super power and technologically advanced country to precisely cope with these demands. Mistakes could develop into a more serious problems. Recognizing the matter's seriousness and promoting mutual understanding is important for Japan to develop into a country which is trusted and respected by others in the international community.

In the recent years Japan is being demanded to develop the level of its basic research by establishing R&D centers which will pass current best practice in the world and match the so-called "centers of excellence." It is said that there an imbalance has occurred between Japan and other developed countries, in particular in the interchange of researchers, because of lack of such R&D centers in Japan and the inadequacies of Japanese acceptance systems. This has come to draw the attention recently as a serious problem which could aggravate the science and technology friction if neglected.

The interchange of researchers is believed to produce the following effects through free exchange of researchers having different thinking patterns and cultural background.

- (1) It will promote complementation of the mutual research and technological abilities and production of original ideas.
- (2) It will promote the transfer of research and technological achievements and know-how.

(3) It will promote mutual understanding by researchers and maintenance of good competitive relationship.

The issue of imbalance of interchange of researchers surfaced when it was pointed out by the U. S. side in the 2nd Japan-U. S. Conference on Advanced Technology and International Environment held in Kyoto in 1986 and the subsequent negotiations for signing of the Japan-U. S. Agreement on Cooperation in Research and Development in Science and Technology. Specifically it has been pointed out that while Japan has been sending a massive number of researchers to the Western countries to acquire knowledge and connecting this to product development back home by having them bring back Western achievements, Japan is closed when it comes to acceptance of researchers from the Western countries and has not been taking positive acceptance measures.

In coping with such claims Japan has been producing steady results by taking measures recently such as creation of fellowship systems. However, while part of the interchange records have been made public recently the record of interchange of researchers which becomes the basis of arguments has not been grasped fully.

Given such a situation, this study has as comprehensively as possible studied and analyzed the record of interchange of researchers between Japan and other countries by using statistical data made available by the Justice Ministry and the Foreign Office. However, since these data have been collected from the government offices' own positions of controlling departures and entries and grasping the actual condition of foreigners in Japan it is impossible to extract data only on researchers.

Hence this study covers not only natural scientists but cultural and social scientists as well. It also covers those involved in the acquisition and provision of industrial technologies and skills. These are all called "researchers and engineers."