

ministries and agencies involved, in accordance with the environmental policy that the government has formulated:

- Research on global warming issues,
- Technologies to eliminate wastes and to "recycle" resources through utilising waste products in a manner as to regenerate them for re-use as new resource materials,
- Creation of a society where humans can live in harmony with nature.

The government has attempted to integrate all environmental research programmes submitted by each ministry in order to unify progress in the area of environmental activity.

- **Nano-technology and Materials Science**

Japan's position is that the development of nano-technology in support of devices and materials needed to build the next generation info-communication system should be accelerated because of the severe competitive position Japan finds itself in with respect to developed countries such as the USA. Significant progress is required within the coming 5 to 10 years in the development of processing technologies for semi-conductors, and for the development of new devices for recording information and networking. Materials and devices based on new principles should be prioritised in the context of the requirements of the coming 10-20 years.

There should be more focus on the development of elemental technologies used to support nano-technology, measuring and processing technologies, processing technologies which enable one to upgrade research to the nano-technology level, and technologies for measuring proteins at the nano level. R&D in support of sub-micron level work used for industrial applications and the use of simulation technologies to speed up such development should be strengthened further.

Advances also are required in the areas of: 1) materials science, 2) in novel, state-of-the-art substances which exhibit revolutionary functions, 3) in the development of technologies to control the organisation and structures at the nano level. Strengthened new approaches should be taken for the use of biological functions, by which a wide range of areas such as energy, environment, and medicine intersect to create new knowledge.

(2) Reform of the S&T System

Four priority issues are to receive focus:

- 2.1 Reform of the competitive research fund, so as to improve its effectiveness,
- 2.2 Renovation of university facilities (the progress of the renovation of university facilities has been slower than originally expected; further efforts are needed to reach the 5-year plan's goals),
- 2.3 Promotion of co-operation among industry, academia and government,
- 2.4 Promotion of regional S&T.