

INTRODUCTION TO THE MICROELECTRONICS MISSION AND REPORT

The electronics industry is expected to be the fastest growing industry in the world for the remainder of this century and well into the next. This growth will be fueled by the need for new electronic systems such as those used in integrated supercomputers and supermicrocomputer systems which incorporate advanced integrated circuits. The growth will be fed by the demand in consumer electronics, the development of computer graphics technology, the trend toward visual information and the advent of high-definition television and filmless cameras.

By the 1990s, the aerospace industry's need for speed and precision in image processing will spur development of new technologies like those involved in very fast image processing systems. There is, too, the work toward artificial intelligence, applications in expert systems, electronic translating machines and advanced robotics to keep the electronics boom operating through the 1990s and into the twenty-first century.

Microelectronics has a major role to play in this electronics industry growth, since the electronics boom wouldn't have been possible without the revolution that has occurred in semiconductor technology. This revolution is continuing. It offers ever-increasing growth prospects for microelectronics industries. Incorporated into electronics products that touch every area of daily life, microelectronics is a driving force in the electronics age.

For this mission report, microelectronics is defined as being concerned with activities in the design and production of semiconductors and hybrid integrated circuits (ICs), along with the equipment needed to design and manufacture microelectronics devices and products. As well, software and software applications are included since they are of central relevance to the microelectronics field.

In product terms, microelectronics incorporates a wide range of items: semiconductors, hybrid ICs, telecommunications devices, PCB, surface accoustical wave (SAW) devices, R.F. microwave, imagers, thick polymer film, computer systems, software (operating systems, education, intelligent systems), lasers, satellite communications equipment, light emitting diodes (LED) and liquid crystal devices (LCD), frequency halvers and doublers, etc. In the equipment manufacturing area, there are a number of areas of interest to Canada including etchers, coaters, solder/dipping equipment, ion-beam equipment, plasma etching, moulding equipment, ion implanters, photoengravers, etc.