

Preface

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Spacecrafts often fly in the microgravity environment, and there are many engineering problems related to the microgravity research. Due to the development of satellite techniques in China, the studies of microgravity engineering such as fluid management [1] and heat management [2, 3] have been done since 1970s.

The research on microgravity science and application in China are stimulated by the Aerospace Program under the National High Technology Development Programme of China since the late of 1980s till the early of 1990s. Some ground-based microgravity projects were arranged, and space experiments of relatively simple facilities were on board the Chinese recoverable satellites in this preliminary period. The Phase I of the Chinese Program on Space Manned Engineering started in 1992 and the goal was to realize the space manned flight by Shen-Zhou spaceship. The unmanned spaceship of the manned program supported space experiment opportunities for microgravity research [4].

During the preparation and operation of the Space Manned Engineering, the space experiments on board the Chinese recoverable satellites have been performed [5]. Purpose of the materials sciences is mainly the semiconductor and protein crystal growth in the microgravity environment, especial the GaAs crystal growth in space [6]. Furthermore, the space experiments of life science have also been arranged [7].

Recently, the microgravity science and space life sciences are important parts in the national space science program, and the Chinese recoverable satellite will be used as a tool for space experiment of microgravity science and space life science.

The papers in this issue collected the recent results obtained by the space experiments on board the last two Chinese recoverable satellites SFW-3 and SJ-8. The next mission of SJ-10 is arranged specially for 28 space experiments of microgravity science and space life science, and will probably be launched in 2010.

Prof. Hans J. Rath and Dr. M. Dreyer arranged the special issue to publish the recent results of space experiments on board the Chinese recoverable satellite in the *Microgravity Science and Technology* journal, and their help and assistance is greatly appreciated.

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