

# Preface

Four years have passed since the accident at Tokyo Electric Power Company's Fukushima Daiichi nuclear power station, and gradual steps have been taken toward environmental recovery in Fukushima. However, there are still many issues that need to be tackled in order to achieve the full revitalization of Fukushima. These issues encompass many different disciplines such as economics, psychology, and sociology. I believe the role of the sciences related to radiation and radioactivity is especially important.

An international symposium titled "Radiological Issues for Fukushima's Revitalized Future" was held in Iizaka-onsen, Fukushima, Japan, May 30–31, 2015. We invited experts, researchers, and the general public to attend this symposium and think together, through lectures, poster presentations, and panel discussions, about the concrete steps that need to be taken toward the revitalization of Fukushima.

In this symposium, 14 invited lectures and more than 70 scientific posters were presented. We selected 20 presentations for publication in this book. These manuscripts were peer-reviewed by experts in the field to form the chapters of the book and were divided into the four contents as follows:

## Part 1 Radioactivity in the Terrestrial Environment

This part consists of six chapters related to the identification and migration of radionuclides in the terrestrial environment. It is important to clearly define the behavior of radionuclides, such as radiocesium in the terrestrial environment, to evaluate the long-term effect of the accident. These chapters give useful information on the present status and characteristics of radionuclides in the terrestrial environment.

## **Part 2 Decontamination and Radioactive Waste**

This part consists of three chapters related to the safety of the decontamination system and the treatment of radioactive waste. The safe treatment and disposal of waste generated by decontamination are the most important problems needing quick resolution for the revitalization of Fukushima. These chapters focus on the safe treatment and reduction of cesium in waste.

## **Part 3 Environmental Radiation and External Exposure**

This part consists of four chapters related to the development of a measurement system for environmental radiation and the evaluation of external exposure. For the residents of Fukushima, external exposure comes predominantly from contact with radiocesium. Therefore, development of a high-accuracy system for measuring environmental radiation and a method for evaluating external exposure are required. These chapters are a response to the request of government bodies and the public for such developments.

## **Part 4 Radioactivity in Foods and Internal Exposure**

This part consists of seven chapters related to the identification of radionuclides in farm products, control of radionuclide root uptake, the decrease in radionuclide concentration by food processing, and the evaluation of internal exposure. Some of the chapters report that the internal dose by ingestion is not very high. However, the level of uneasiness among the public with regard to contamination of food is high. In addition, some agricultural products, such as peaches, are special products of Fukushima. These chapters provide information about the safety of food products and should help ease some of the worries of the public. This information can also be useful for the revitalization of some industries.

This book focuses on Fukushima's revitalized future. It is difficult to cover all the radiological issues; however, I believe that the advanced research presented here provides useful information and data to help in that revitalization.

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