

Committee Report: JCI-TC181A Technical Committee on the Application of Cement and Concrete Technologies to Disposal of Hazardous and Radioactive Wastes

委員会報告：JCI-TC181A

有害廃棄物・放射性廃棄物処分へのセメント・コンクリート技術の適用研究委員会

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Abstract

The safe and rational disposal of waste is an important social issue supporting sustainable economic activities. Until now, cooperation between this waste management area and the cement/concrete field has not been very active. However, in recent years, the necessity and importance of addressing the above waste management by integrating knowledge and technologies, not only across those own fields but also in many related interdisciplinary areas, have been recognized. Considering this background, this paper reports the relationships between the treatment and disposal of hazardous wastes containing toxic/heavy metals/substances, etc., and the radioactive wastes generated by nuclear power generation and radiological accident, etc., with the knowledge and technology in the cement and concrete fields, and additionally discusses the research and technologies that will be necessary in the future.

1. Introduction

1.1 Purpose of the committee

In recent years, interdisciplinary research across research areas has been actively conducted for various topics. Concrete engineering is deeply related to the construction field and also to the disposal of hazardous wastes and radioactive wastes. For example, in foreign countries, a large-scale research group called Nanocem has been active since 2004, incorporating various knowledge and techniques of physical chemistry and

materials science. The expansion of the conventional research areas has dramatically increased the level of research, which also applies to the radioactive waste disposal field. However, in Japan, the latest advances in cement chemistry and concrete engineering have not been fully reflected in relevant fields.

Therefore, in view of this background, based on the basic knowledge in the fields of cement chemistry and concrete engineering, and.....