・研究課題名＝「Development of safety recycle system for waste gypsum board and construction sludge based on controlling impurities and inversed logistics」
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・要旨（200 語以内程度）＝Gypsum board is widely used as building materials in many countries. In Japan, 1.2 million tons of waste gypsum board is generated form demolition work. Most of waste gypsum board has placed in the landfill. Recycle processes of waste gypsum boards are needed because of lack of landfill capacity. To improve recycle ratio, waste gypsum board is recycled not only to gypsum board but also to another product, such as roadbed materials. Waste gypsum board must be clean from contaminants for recycling. In this study, we focused fluoride and other impurities in waste gypsum board, and developed on-site determination device and inversed logistics that provide treatment method based on information of impurities in waste gypsum board.

 The major results of the study were as follow.

(1) We have developed on-site determination method of fluoride and arsenic compounds in gypsum by using pre-treatment with ion exchange resin and "pack test". We have assessed the on-site determination method with consortium for recycling waste gypsum board in Japan.

(2) By results from research on recycle companies, "open innovation" is very important "open innovation" by companies having business ethics on recycle of waste gypsum board.

(3) We have researched the environmental problems of gypsum in North Africa (such as Tunisia, Morocco) and recycling of sediment in Korea.

(4) We organized outreach with waste management engineers.

・キーワード（5 語以内）＝ Waste gypsum board, Fluoride, On-site monitoring, Construction Sludge, CSR