## (9) Development of technology for public infrastructure construction to achieve sustainable construction recycling

## **Research Summary**

Research period: FY2016-2021 Program leader: Director of Materials and Resources Research Group



Establishment of a sustainable society has become an important proposition that we are responsible on a global scale. Among other things, our nation with poor natural resources needs to effectively use the wastes and strive to build a recycle-oriented society.

The construction sector generates construction by-products due to update of the structures, such as concrete blocks, asphalt blocks, and surplus soil. Efficient use of these construction byproducts without disposal reduces burden of the disposal sites and also helps conservation of natural resources. So far, such construction by-products have been utilized and we have obtained certain results, however, the amount of construction by-products will continue to increase in the future along with the full-scale constructions of the 2020 Summer Olympics and Paralympics in Tokyo and full-fledged maintenance and renewal work for existing structures. Further expansion of utilization is expected in order to properly maintain the resource circulation including the construction by-products. Specifically, we conduct research on further expansion of utilization of concrete recycled aggregate, clarification of applicable conditions in case of using a lot of recycled aggregate, and expansion of utilization of warm mix asphalt pavement technology for recycled asphalt pavement.

On the other hand, due to the large-scale tunnel construction, surplus soil occurrence from construction is expected. It is necessary to enhance environmental safety assessment and countermeasures for surplus soil. We conduct research on development of regulations for surplus soil including natural heavy metals, evaluation for sources in accordance with the environmental characteristics of the element type, and practical use of efficient countermeasure at low costs.