Special Issue on Advanced Construction Robot System

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Advanced Construction Robot System is an important and promising application domain in robotics. Fourth Industrial Revolution, in which Artificial Intelligence (AI), Internet of Things (IoT), Big data, Robotics Technology (RT) are connected by high-speed communication and each industry is digitized and automated utilizing the real big data, has great impact on the industry. Against the background of this global revolution in the industry, the construction sites are also advancing the digitization, robotization, and automation of construction machinery and human works. In developed countries such as Japan, it is necessary to shorten the construction period and improve efficiency in order to tackle the reduction and aging of the working population and the reduction of energy and CO_2. Also, with the worldwide spread of COVID-19, remote control technology and automation are becoming more and more necessary. Such social needs are also accelerating the importance of the advanced construction robot system.

This special issue aims to provide a comprehensive overview of this active research area with the latest results on construction robot systems and its technologies. Therefore, we solicit technical papers on all aspects of construction robotics including, but not limited to, the following topics:

- Mechatronic systems and model-based control for construction automation
- Artificial Intelligence and machine learning for automated/mechatronic construction engineering
- Real-time mapping, localization and navigation in automated/mechatronic construction environments
- Human-machine interaction and control
- Retrofit technology for construction automation
- Automated/ mechatronic methods and systems in unstructured environments
- Terramechanics and safety for construction robot system
- Construction robot system for disaster response

Submission: Your complete manuscript (either PDF file or MS word file) should be submitted by February 28 2021 to the office of Advanced Robotics, the Robotics Society of Japan through our homepage (http://www.rsj.or.jp/advanced_e/submission). Instruction to the authors and the sample formats of the manuscript are also available there. Please send the copy to Prof. Kazunori Ohno (kazunori@rm.is.tohoku.ac.jp) as well for the confirmation.