

# Research for Cause analysis of Major Hazard according to Machinery & Installation

**Choong-Lyul Lee**

Dept. of Safety Engineering & hygiene Research,  
Occupational Safety & Health Research Institute, KOSHA

Abstract : This research is designed to propose the countermeasures for preventing the major hazards related to crane work. Major hazards are classified by analysing their characteristics and causes. The summary of the research is as follows.

To prevent the hazards related to tower crane, the following devices are developed.

## (1) Automatic release device of gang-form joint bolt

This device is designed to release the joint bolt of the gang-form automatically during lifting the gang-form. By this, the hazard of the previous method which requires the worker's manual operation can be reduced.

## (2) Wireless video equipment

This equipment is designed to be attached to the crane hook easily. The hazard due to inadequate viewing, for example fall of carrying object can be reduced.

To prevent the hazards related to overhead crane, the following devices are developed.

- (1) Hook release device using self weight

This device is designed to prevent the hand crushing.

- (2) Automatic locking device for the coil

This device is designed to let the coil taken off despite the collision with the hindrance during the moving.

To prevent the hazard related to mobile crane, defect detector for wire rope is developed to find out the defect of the wire rope in advance. The hazard caused by sudden cutting of the wire rope can be reduced by means of this device.