

Current Status of Industry 4.0 in Material Handling Automation and In-house Logistics

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Abstract : In the last decade, a new industrial revolution seems to be emerging, supported -once again- by the rapid advancements of Information Technology in the areas of Machine-to-Machine (M2M) communication permitting large numbers of intelligent devices, e.g. sensors to communicate with each other and take decisions without any or minimum indirect human intervention. The advent of these technologies have triggered the emergence of a new category of hybrid (cyber-physical) manufacturing systems, combining advanced manufacturing techniques with innovative M2M applications based on the Internet of Things (IoT), under the umbrella term Industry 4.0. Even though the topic of Industry 4.0 has attracted much attention during the last few years, the attempts of providing a systematic literature review of the subject are scarce. In this paper, we present the authors' initial study of the field with a special focus on the use and applications of Industry 4.0 principles in material handling automations and in-house logistics. Research shows that despite the vivid discussion and attractiveness of the subject, there are still many challenges and issues that have to be addressed before Industry 4.0 becomes standardized and widely applicable.

Keywords : Industry 4.0, internet of things, manufacturing systems, material handling, logistics

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