

Industry 4.0 and Circular Economy in Chemical Industry of the Czech Republic – First Mapping*

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Abstract

Industry 4.0 and Circular Economy are two new concepts that change the form of the current industry. Industry 4.0 is a concept that involves modern technologies, such as the Internet of Things, Advanced Digitalization and Robotics, Big Data processing, etc. It has a potential to make corporate processes significantly more effective across the entire supply chain. Circular Economy is a concept focussing on circulation of material and energy flows in the current market environment. This concept has a potential to decrease the negative impacts of companies and their products on the environment. This paper represents a primary probe into chemical companies in the Czech Republic, and it aims to identify the awareness, the stage of implementation, and potential blending of these concepts based on a questionnaire survey. A part of the respondents knows the concepts, and some of them even use some elements of Industry 4.0 within activities connected with Circular Economy. On the other hand, the research confirmed that some of the respondents are not aware of these concepts or of their contents, even though they are using some elements of Industry 4.0 or Circular Economy.

Keywords: Industry 4.0; Circular Economy; Sustainable Development, Czech Republic