

**DYNAMIC RISK ANALYSIS ON PROCESS
SAFETY: A REVIEW OF THE EVOLUTION,
APPROACH, AND ADVANTAGES IN THE
INDUSTRY**

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UNIVERSITI TEKNOLOGI MARA

2022

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By

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This report is submitted in partial fulfillment of the requirements
needed for the award of
Bachelor of Chemical Engineering (Environment) with Honours

**CENTRE FOR CHEMICAL ENGINEERING STUDIES
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AUG 2022

ACKNOWLEDGEMENT

In the name of Allah, the most gracious and the most merciful. Alhamdulillah, thank you to Allah S.W.T for His blessings and mercifulness for my health, mentally and physically to complete my Final Year Project report by doing a lot of research throughout both semesters.

Firstly, I would like to express my sincere thanks to my supervisor, Ir Mohd Azahar Mohd Ariff for his guidance, indispensable advice, constant support, and endurance throughout this project. Besides, I would also express my appreciation towards my FYP coordinators for both CEV651 in this semester.

Finally, I would also like to express my gratitude to my parents and family. Without their tremendous. It would have been difficult for me to finish my studies without their wonderful understanding and encouragement throughout the last few years. Alhamdulillah.

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ABSTRACT

This paper evaluates the process safety regarding dynamic risk assessment (DRA) implementing in chemical process industries. Dynamic risk assessment is a scientific technique for identifying hazards, evaluating risk, and appraising the working environment. Dynamic risk assessments are used to find risks in the field and take prompt which well-informed action to eliminate them in order to protect workers. Since they are carried out in the field, most likely without the aid of a risk assessment template, current risk assessments are built upon by a dynamic risk assessment. The process of recognising risks and trying to avoid them as much as feasible is known as dynamic risk assessment. This paper used Systematic Literature Review (SLR) as the method to evaluate and analyse all the related review paper within 10 years back of publishing. The aim of this DRA approach was the innovative continuous real-time process safety strategy to eliminate or avoid any risk to occur in certain places. Currently, the development of technology needs to change the way of evaluating the risk in industries in convenient ways. There are a lot of evolution in DRA approach which are in physical security and cyber security. Hence, there are also the description of DRA approach stated in this paper for instance, DyPasi, Bayesian Network, Bowtie, and Risk Barometer which all have their own pros and cons. The main advantages of this method are the detection of risk in certain places occur instantly right after run the software. This action will save the time and more time on focusing on the production rather than maintenance and fix the problems. However, there are also disadvantages of DRA which no laws stated that we can use DRA for the evaluation of risk in Malaysia instead of conventional risk assessment. DRA really help in many angles in evaluating risk in industries. The implementation of DRA will help all industries to comparable with another developed countries that are always ahead due to technological advances.