بسم الله الرحمن الرحيم

HANAA ALY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HANAA ALY

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

HANAA ALY

NUMERICAL INVESTIGATION OF SMOKE MANAGEMENT SYSTEM IN A MOVIE THEATRE

By

Yousra Abdelreihim Hussein Toulan

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of

Master of Science

In

MECHANICAL POWER ENGINEERING

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Professor, Mechanical Power Engineering Department,
Faculty of Engineering,
Cairo University

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Approved by the Examining Committee:

Prof. Dr. Essam E. Khalil **Thesis Main Advisor**
Professor, Mechanical Power Engineering, Faculty of Engineering, Cairo University

Prof. Dr. Mahmoud Abdelwahab Kassem **Internal Examiner**
Professor, Mechanical Power Engineering, Faculty of Engineering, Cairo University

Prof. Dr. Ahmed Farouk Abdelgawad **External Examiner**
Professor, Chair, Mechanical Power Engineering, Faculty of Engineering, Zagazig University

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2021

Engineer: Yousra Abdelreihim Hussein Toulan

Date of Birth: 24/4/1995

Nationality: Egyptian

E-mail: yoaraabdelreihim@yahoo.com

Phone: 01142121001

Address: 7 L Abel Raoouf St, New Maadi ,Cairo

Registration Date: 1/10/2018

Awarding Date: / / 2021

Degree: Master of Science

Department: Mechanical Power Engineering

Supervisors: **Prof. Dr. Essam E. Khalil (Thesis Main Advisor)**

Examiners:
Prof. Dr. Essam E. Khalil (**Thesis Main Advisor)**
Prof. Dr. Mahmoud Abdelwahab Kassem **(Internal Examiner)**
Prof. Dr. Ahmed Farouk Abdelgawad **(Professor, Faculty of Engineering, Zagazig University (External Examiner)**

Title of Thesis: **NUMERICAL INVESTIGATION OF SMOKE MANAGEMENT SYSTEM IN A MOVIE THEATRE**

Key Words: Fire Dynamics Simulator, Smoke Management System, Movie Theatre, Concentration of Carbon Monoxide, Visibility

Summary:

Smoke management system in all buildings received great interest as a way to decrease fatalities during fires as it prevents the spread of fire and provides a safe escape route for occupants. The smoke has many dangerous effects as it causes asphyxiation and death. Additionally, it reduces the visibility thus will lead to difficulty in the evacuation during the fire. This research provides a numerical study for smoke control in the movie theatre. This research investigates the effect of the fire source location in the case of the natural ventilation system on basic design parameters such as smoke layer height, concentration of Carbon Monoxide (CO), temperature, and visibility at different heights and different places in the movie theatre. Also, the effect of natural ventilation and mechanical ventilation on the same design parameters are studied.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Date: / /2021

Signature:

ACKNOWLEDGMENT

I would like to thank **Prof. Dr. Essam E. Khalil** for his guidance, motivation, assistance, and valuable comments that added to this research and perfect supervision. I appreciate everything he has done for me. I would like to thank Eng.Mostafa Shawqy and Eng. Mohamed Elaqabawy for their helpful suggestions. I am also grateful to my home-university "Université Française d'Égypte" for their motivation and cooperation. Finally, I am grateful to my parents for their encouragement in completing this thesis**.**

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