بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY

FIRST PRINCIPLES MODELING FOR THE CONTINUOUS HOT-PRESSING PROCESS OF MDF IN ECOSIMPRO

By

Enas Gouda ElSayed Mohamed Mostafa

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
INTERDISCIPLINARY - MASTER
in
Green Processes

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis: First Principles Modeling for the Continuous Hot-Pressing Process of MDN in EcosimPro

Key Words: MDF; EcosimPro; continuous pressing; modeling; thermodynamics

Summary:

The continuous hot pressing of medium density fiberboard (MDF) is a common and efficient way to produce this popular wood-based panels used for furniture and construction. The goal of this work is to develop a first-principles model of the process based on previously available work, and to use it to formulate predictions by implementing its numerical resolution on the program EcosimPro by the methodology of finite volumes. Results of the model are studied and compared with previous results available for a similar model of the same process from previous studies.

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: Enas Gouda ElSayed Mohamed Mostafa Date:

Signature:

Dedication

I would like to dedicate this work to my family.

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Finally, I have never been more proud to be a representative of my university, Cairo University, abroad. This fact has made me work even harder to be good example and to prove that Cairo University hosts great minds.

Table of Contents

DISCLAIMER ..... **I**

DEDICATION ..... **II**

ACKNOWLEDGMENTS ..... **I**

TABLE OF CONTENTS ..... **II**

LIST OF TABLES ..... **V**

LIST OF FIGURES ..... **VI**

NOMENCLATURE ..... **VIII**

ABSTRACT ..... **X**

CHAPTER 1 : INTRODUCTION **1**

1.1. RESEARCH APPROACH 1
1.2. MEDIUM DENSITY FIBER BOARD (MDF) 1
1.3. STATUS OF MDF IN EGYPT 3
1.4. THESIS STATEMENT 4
1.5. FUNDAMENTAL MODEL 4
1.6. ORGANIZATION OF THE THESIS 5

CHAPTER 2 : LITERATURE REVIEW **6**

2.1. INTRODUCTION 6
2.2. BACKGROUND ABOUT WOODS 6
2.2.1. MDF 6
2.2.1.1. Adhesive systems 8
2.2.1.1.1. UF adhesives *8*
2.2.1.1.2. MUF adhesives *9*
2.2.1.1.3. Phenol formaldehyde (PF) *9*
2.2.1.1.4. Polymeric methylene di-isocyanate (PMDI) adhesives *9*
2.2.1.2. Hardeners 11
2.2.1.2.1. Ammonium salts *11*
2.2.1.2.2. Formaldehyde scavenger *11*
2.2.1.2.3. Paraffin wax *11*
2.2.1.3. Types of MDF 12
2.2.1.3.1. Moisture resistant MDF *12*
2.2.1.3.2. MDF from acetylated fibers *12*
2.2.1.3.3. Fire resistant MDF *13*
2.2.1.3.4. CARB II MDF *13*
2.2.1.3.5. HDF flooring *13*
2.2.1.3.6. Other grades *14*
2.2.2. Plywood 14
2.2.3. Comparison 15
2.3. ABOUT CONTINUOUS HOT PRESSING 16
2.4. DEVELOPED EXPERIMENTAL WORK 17
2.4.1. Materials and Methods 17

2.4.2. Analysis of Experimental Results: 18
2.4.2.1. Impact of density on core pressure, temperature and density profile 18
2.4.2.2. Impact of steel temperature on core pressure, temperature and vertical density profile (VDP) 21
2.4.2.3. Impact of steel temperature on a denser board 24
2.4.2.4. Impact of moisture content on core pressure and core temperature 26
2.4.2.5. Analysis of core pressure and temperature in delaminated board 28
2.4.2.6. Analysis of internal changes in different thickness board: 29
2.4.3. Conclusion 31
2.5. DEVELOPED MATHEMATICAL MODELS 33
2.6. MASS AND HEAT TRANSFER 35
2.6.1. Heat conduction 36
2.6.2. Gas convection and diffusion 36
2.6.3. Mechanism of resin curing 37
2.6.4. Heat of sorption ..... **Error! Bookmark not defined.**
2.7. PHYSICAL PROPERTIES 39
2.7.1. Thermal conductivity 39
2.7.1. Specific heat 39
2.7.1. Properties of vapor-air mixture 40
2.7.2. Permeability 40
2.8. NUMERICAL METHOD 41
2.8.1. Finite difference method 41
2.8.2. Finite volume method 42
2.8.3. Orthogonal Collocation 43

CHAPTER 3 : MODEL DEVELOPMENT 45

3.1. PROCESS DESCRIPTION 45
3.2. MODEL FORMULATION 46
3.2.1. Enthalpy balance 46
3.2.2. Gas mass balance 47
3.2.3. Bound water mass balance 47
3.3. MODEL ASSUMPTIONS 48
3.4. BOUNDARY CONDITIONS 48
3.5. MODEL RESOLUTION 50
3.5.1. Finite volume method 51

CHAPTER 4 : ECOSIMPRO 53

4.1. INTRODUCTION TO ECOSIMPRO 53
4.2. WORKING WITH ECOSIMPRO 54
4.3. GOVERNING EQUATIONS 61

CHAPTER 5 : RESULTS AND DISCUSSION 63

5.1. INITIAL CONDITIONS 63
5.2. RESULT OF THE SIMULATION RUN 63
5.2.1. Moisture content predictions 64
5.2.1. Temperature predictions 64
5.2.2. Gas pressure predictions 65
5.2.3. Thickness and density profile predictions 66

5.2.4. Analysis and discussion of the model's results 67
5.3. COMPARISON WITH RESULTS FROM THE LITERATURE 68
5.3.1. Moisture content comparison 68
5.3.2. Temperature comparison 70
5.3.3. Gas pressure comparison 72
CHAPTER 6 : CONCLUSION AND RECOMMENDATIONS 75
6.1. CONCLUSION 75
6.2. RECOMMENDATIONS 76
REFERENCES 80
APPENDIX A: SIMULATION CODE 83

List of Tables

Table 1: Advantages and disadvantages of MDF.....7
Table 2: General properties of Formaldehyde-based adhesives [10].....10
Table 3: Types of MDF in Europe [10].....12
Table 4: Comparison between solid wood and engineered wood.....16
Table 5: Summary of experimental parameters.....18
Table 6: Experiment conditions for three different densities MDF boards.....19
Table 7: Pressing parameters for same density but different steel temperatures 21
Table 8: Initial parameters for different steel temperatures but same densities boards .24
Table 9: Experimental conditions for boards having different moisture content but same density.....26
Table 10: Experimental conditions for delaminated boards.....28
Table 11: Experimental conditions for boards having different thickness but the same densities.....29
Table 12: Initial operating conditions of the continuous press.....63
Table 13: Initial board characteristics 63
Table 14: Comparison of moisture content profiles of the current model against that predicted by Pereira, Carvalho and Costa 2006 [19].....69
Table 15: Temperature profile comparison between presented model and those present in the literature.....71

List of Figures

Figure 1: Process of MDF manufacturing [10] 2
Figure 2: Visible difference between particleboard (bottom layer) and MDF (top layer) [36] 6
Figure 3 HDF flooring [37] 14
Figure 4: Plywood (alternate veneers can be seen) [37] 15
Figure 5: A pair of thermocouple wires and a pressure transducer is inserted in the middle of the board 18
Figure 6: Core pressure in three different densities boards 19
Figure 7: Core temperature in three different densities boards 20
Figure 8: Density profile across three different densities boards under the same conditions 21
Figure 9: Profile of core temperature with two different steel temperatures 22
Figure 10: Core pressure profile for the two different steel temperatures 23
Figure 11: Density profile for two different steel temperatures while other conditions are kept unchanged 24
Figure 12: Core temperature profile for two different steel temperatures 25
Figure 13: Core pressure profile for two different steel temperatures 25
Figure 14: Impact of steel temperature on VDP 26
Figure 15: Core temperature profile for two different moisture content boards 27
Figure 16: Core pressure profile for two different moisture content boards 27
Figure 17: Core temperature profile for delaminated board 28
Figure 18: Core pressure profile in delaminated board 29
Figure 19: Core temperature profile for boards having different thickness 30
Figure 20: Core pressure profile for boards having different thickness 30
Figure 21: Impact of different thickness but same density on VDP 31
Figure 22: Rate of change of ploy-condensation reaction with temperature 37
Figure 23: Rate of change of exothermic heat released from poly-condensation reaction with time at constant temperature 38
Figure 24: Generation rate of water from poly-condensation reaction (kg water/kg resin) 38
Figure 25: Discretization points (mesh) for illustrating finite difference method [9] 41
Figure 26: Orthogonal collocation k elements [20] 43
Figure 27: Orthogonal collocation estimations [20] 43
Figure 28: Collocation points, Radau's roots are usually favored to be used for simplicity [20] 44
Figure 29: Macroscopic depiction of the continuous pressing process 45
Figure 30: Boundary conditions of the problem after contact with steel 49
Figure 31: Model tracking of the board, which will start at a) then b) under the steel of the press all the way until lp_{ress} [29] 50
Figure 32: The board is symmetrically divided into two halves and the upper half is then divided into a number of finite volumes for simulation 52
Figure 33: Steps involved in working with EcosimPro [20] 54
Figure 34: Screenshot of the model as it is written on EcosimPro 55
Figure 35: Creating a partition in EcosimPro 56
Figure36 : Screenshot of the created partition of the model that indicated that there was no mathematical errors in the equations written 57