

# Contents

<b>1</b>	<b>Introduction</b>	<b>7</b>
1.1	State of the art . . . . .	8
1.2	Aims of the thesis . . . . .	11
1.3	Outline of the thesis . . . . .	12
<b>2</b>	<b>Problem analysis</b>	<b>13</b>
2.1	Characteristics of discharge lamps . . . . .	13
2.1.1	Low pressure discharge lamps . . . . .	13
2.1.2	High pressure discharge lamps . . . . .	14
2.1.3	Electric circuits for electric discharge lamps	18
2.2	Identification . . . . .	19
2.2.1	Computation structure . . . . .	20
2.2.2	Lamp model . . . . .	21
2.2.3	Iterative computation method . . . . .	22
2.2.4	Graphical user interface for the lamp model identification . . . . .	23
2.3	Simulation . . . . .	23
2.3.1	Simulation model of a discharge lamp with a ballast . . . . .	24
2.3.2	Simulation model of a discharge lamp . . . . .	24
<b>3</b>	<b>Results</b>	<b>27</b>
3.1	Results of identifications . . . . .	27
3.1.1	Model parameters of low pressure discharge lamps . . . . .	27
3.1.2	Model parameters of high pressure discharge lamps . . . . .	27

3.2 Experimental verification . . . . .	28
3.2.1 Metal halide lamp verification . . . . .	29
<b>4 Conclusion</b>	<b>33</b>
<b>Bibliography</b>	<b>35</b>