

UPPER-LIMB IMPEDANCE PARAMETERS-BASED MODEL FOR MOTOR RECOVERY

**Zaw Lay Htoon
Shahrul Na'im Sidek**



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MODEL FOR MOTOR
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CONTENTS

<i>Figures</i>	ix
<i>Tables</i>	xiii
<i>Preface</i>	xv
<i>Abbreviations</i>	xvii
<i>Symbols</i>	xix

CHAPTER 1 INTRODUCTION	
CHAPTER 2 LITERATURE REVIEW	
CHAPTER 3 MATHEMATICAL MODELLING OF UPPER-LIMB	
CHAPTER 4 EXPERIMENTAL RESULTS AND DISCUSSION	
CHAPTER 5 CONCLUSION AND RECOMMENDATIONS	

<i>References</i>	91
<i>Appendix A</i>	98
<i>Appendix B</i>	99
<i>Appendix C</i>	100
<i>Appendix D</i>	101
<i>Appendix E</i>	102
<i>Appendix F</i>	103

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Estimation of patients' muscle tones allow proper prescription of therapy and determination of physical recovery progress. The book proposes a strategy for the estimation of upper-limb mechanical impedance parameters as a mean for the prediction and assessment of subjects' muscle tone level and recovery state. The human upper-limb is modeled as a mass-spring-damper system and represented as an Auto Regressive eXogenous (ARX) dynamic equation for the estimation of upper-limb mechanical impedance parameters. The estimated impedance parameters are then fed as inputs to a trained Artificial Neural Network (ANN) which is used to predict, the subjects' muscle tone level and recovery state during rehabilitation exercise.

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