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GENDER COMPARISON IN EMG AMPLITUDE DURING MAXIMAL VOLUNTARY CONTRACTIONS OF THE UPPER LIMB MUSCLES

TAN TIAN XIANG

Report submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Mechatronics Engineering

Faculty of Manufacturing Engineering
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June 2016
SUPERVISOR’S DECLARATION

We hereby declare that we have checked this thesis and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor of Engineering in Mechatronics Engineering.

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\textbf{P-value} \hspace{5mm} \text{Probability value}

\textit{R} \hspace{5mm} \text{Coefficient of Regression}

\textit{R}^2 \hspace{5mm} \text{Coefficient of Determination}
LIST OF ABBREVIATIONS

ACL  Anterior Cruciate Ligament
BF   Biceps Femoris
CMRR Common Mode Rejection Ratio
CoV  Coefficient of Variation
DOMS Delayed Onset Muscle Soreness
EMG  Electromyography
FFT  Fast Fourier Transform
GUI  Graphical User Interface
iEMG Integrated Electromyography
LE   Lumbar Extensors
LG   Lateral Gastrocnemius
MAV  Mean Absolute Value
MG   Medial Gastrocnemius
MNF  Medial Frequency
MPF  Mean Power Frequency
mV   milliVolts
MVC  Maximal Voluntary Contractions
MVIC Maximal Voluntary Isometric Contractions
PM&R  Physical Medicine & Rehabilitation
QF    Quadriceps Femoris
RF    Rectus Femoris
RMS   Root Mean Square
sEMG  Surface Electromyography
ST    Semitendinosus
STD   Standard Deviation
TA    Tibialis Anterior
VL    Vastus Lateralis
VM    Vastus Medialis