

LIST OF SYMBOLS AND ABBREVIATIONS

ANFIS	-	Adaptive Neuro – Fuzzy Inference System
AC	-	Alternating Current
APOD	-	Alternative Phase Opposition Disposition
ACO	-	Ant Colony Optimization
ANN	-	Artificial Neural Network
BJT	-	Bipolar Junction Transistor
COPWM	-	Carrier Overlapping PWM
COT	-	Constant ON-time
CCM	-	Continuous-conduction-mode
CFD	-	Control Freedom Degree
CSI	-	Current Source Inverter
DSP	-	Digital Signal Processing
DC	-	Direct current
DCM	-	Discontinuous-conduction-mode
DVR	-	Dynamic Voltage Restorer
EMI	-	Electro- magnetic interference
EMC	-	Electromagnetic Compatibility
FCMLI	-	Flying Capacitor Multi-level Inverter
GTO	-	Gate Turn Off Thyristor
GE	-	General Electric Company
GMLI	-	Generalized P2-cell Multi-level Inverter
GA	-	Genetic Algorithm
HR-PWM	-	Harmonic Reduction-Pulse width Modulation
HVDC	-	High Voltage Direct Current
HTSDC	-	Hybrid Three Step Damping Compensator
IGBT	-	Insulated-Gate Bipolar Transistor

ISPWM	-	Inverted sine PWM
LDN	-	Level Doubling Network
LGU	-	Level Generation Unit
LSPWM	-	Level Shifted PWM
MATLAB	-	Matrix Laboratory
MPPT	-	Maximum-Power-Point Tracker
MOSFET	-	Metal-Oxide-Semiconductor Field-Effect Transistor
M2I	-	Modular Multi-level Inverter
MLI	-	Multi-level Inverter
MSPWM	-	Multi-level sinusoidal Pulse Width Modulation
PD	-	Phase Disposition
PDPWM	-	Phase Disposition Pulse Width Modulation
POD	-	Phase Opposition Disposition
PSPWM	-	Phase Shift PWM
PV	-	Photovoltaic
PGU	-	Polarity Generation Unit
PF	-	Power factor
PFC	-	Power factor Correction
PSM	-	Predictive Switching Modulator
PD	-	Proportional- Derivative
PISB	-	Proportional Integral Simple Boost
PI	-	Proportional-Integral
PID	-	Proportional-Integral-Derivative
PWM	-	Pulse Width Modulation
RVMLI	-	Reversing Voltage Multi-level Inverter
RMS	-	Root Mean Square
SHE	-	Selective Harmonic Elimination
SSHM	-	Sequential switching Hybrid modulation
SCR	-	Silicon Controlled Rectifier

SSPFC	-	Single Phase Single Stage Power Factor Corrected AC/DC converter
SEPIC	-	Single-ended Primary-inductor Converter
SPWM	-	Sinusoidal pulse width modulation
SVPWM	-	Space Vector Pulse Width Modulation
STATCOM	-	Static Synchronous Compensator
STATCOM	-	Static VAR Compensation
SR	-	Synchronous Rectifier
SRF	-	Synchronous Reference Frame Theory
THD	-	Total Harmonic Distortion
TSMC	-	Total Sliding Mode Control
UPS	-	Uninterruptible Power Supply
VFD	-	Variable Frequency Drive
VFISPWM	-	Variable Frequency Inverted Sine PWM technique
VFPWM	-	Variable Frequency PWM
VSC	-	Voltage Source Converter
VSI	-	Voltage Source Inverter
VAR	-	Volt-Ampere Reactive
ZCS	-	Zero Current Switching
ZVS	-	Zero Voltage Switching