

## LIST OF ABBREVIATIONS

WECS: Wind Energy Conversion System

DFIG: Doubly-fed Induction Generator

WGEC: Wind Global Energy Council

SVPWM: State vector pulse width modulation

PI: Proportional integral

DTC: Direct torque control

DPC: Direct power control

RSC: Rotor side converter

SMC: Sliding mode control

DSMC: Discrete sliding mode control

QSM: Quasi sliding mode

SCIG: Squirrel Cage Induction Generator

IEA: International Energy Agency

WRIG: Wound Rotor Induction Generator

IGBT: Insulated gate bipolar transistor

VSC: Voltage source converter

HAWG: Horizontal axis wind generator

PWM: Pulse width modulation

MRAS: Model reference adaptive system

FOC: Field Oriented Control

DFIM: Doubly Fed Induction Machine

VSI: Voltage Source Inverter

SVM: Space vector modulation

DSVM: Discrete space vector modulation

GSC: Grid side converter

IDSVM: Improve discrete space vector modulation

IMC: Internal model control

MPPT: Maximum power point tracking

PBC: Passivity-based control

VSCF: Variable speed constant frequency

IM: Induction motor

IVS-DTC: Integral variable structure's direct torque control

SOF: Static output feedback

PSO: Particle swarm optimization

BFO: Bacterial foraging optimization

LMI: Linear Matrix Inequality

FACT: Flexible AC Transmission

WEC: Wind Energy Conversion

PCC: Point of Common Coupling

WRSG: Wound rotor synchronous generator

PMSG: Permanent magnet synchronous generator

PID: Proportional Integral Derivative

FACTS, Flexible AC Transmission Systems

WT: Wind Turbine

FFA: Firefly algorithm

DE: Differential Evolution

AI: Artificial Intelligence

S: Slip

SRG: switched reluctance generator

DEO: Differential Evolution Optimization

GAO: Genetic Algorithm Optimization

PE: Power Electronics

PSF: Power Signal Feedback

RPM: Revolution per Minute

WTG: Wind Turbine Generator

SEIG: Self Excited Induction Generator

CM: condition monitoring

SCADA: Supervisory control and data acquisition