TÉCNICO LISBOA

Fast response MPPT switched charger for the Solar Boat Technician

Afonso Daniel Guerreiro Coelho

Introduction to the Research in

Electrical and Computer Engineering

Supervisors: Gonçalo Nuno Gomes Tavares
Pedro Rafael Bonifacio Vitor

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Abstract

Resumo do trabalho

Contents

Acronyms

IST	Instituto Superior Técnico
TSB	Técnico Solar Boat
MPPT	Maximum Power Point Tracker
MPP	Maximum Power Point
PCB	Printed Circuit Board
CAN	Controller Area Network
USB	Universal Serial Bus
GUI	Graphical User Interface

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Introduction

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1.1 Motivation

Explicar o contexto do TSB, paineis solares, sua falta de eficiencia, e MPPTs

1.2 background

de maneira a complementar o cap 1.1 vou explicar alguns conceitos basicos sobre paines solares, MPPTs e o projeto TSB

1.2.1 Solar Panels

1.2.2 MPPTs

1.2.3 TSB Project

1.3 Objectives

Explicar os objetivos do projeto com bulet points.

1.4 Outline

Explain how the work is organized by chapters.

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State-of-the-Art

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Intro if needed

2.1 mppt! algorithms

Escolher algumas para falar

2.1.1 Constant Voltage (CV)

2.1.2 Fractional Open Circuit Voltage (FOCV)

2.1.3 Fractional Short Circuit Current (FSCC)

2.1.4 Perturb and Observe (P&O)

2.1.5 Incremental Conductance (IncCond)

2.1.6 Method beta

2.1.7 Method based on temperature

2.2 MPPT converter topology

Intro..

Escolher algumas para falar

2.2.1 Buck Converters

2.2.2 Boost Converters

2.2.3 Buck-Boost Converters

2.2.4 Sepic Converters

2.2.5 Half-Bridge Converters

2.3 Comercial mppt!s

Table with comercial MPPTs and some of their carateristics.

2.4 Battery charging unit

2.5 Protection circuits

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Solucion Proposal

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3.3 Current and Voltage Sensing 8
3.4 Power electronics 8

3.1 Microntroller

Explicar a escolha do microcontrolador, o que ele faz, etc

3.2 Communication

sensors, CAN, USB, GUI

3.3 Current and Voltage Sensing

pq que é necessarion, e o que é que escolhi

3.4 Power electronics

Topologia escolhida, pq, vantagens e componentes

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Preliminary Work

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Planning and Scheduling

Fazer um planeamento com um gantt chart e explicar as decisoes

Bibliography

Appendix Name