## Instrumentation



# Beau Trepp Electrical, Electronic and Computer Engineering

University Of Western Australia

A thesis submitted for the degree of Bachelor of Computer Science/Bachelor of Electronic Engineering  $2011 \ {\rm November}$ 

## Abstract

Put your abstract or summary here, if your university requires it.



## Acknowledgements

During work on this project, I recieved

TODO thank

 ${\it ZeroMQ}$  guys, Gumstix Guys

Ian Hooper Jonathan something?. Thomas

REV Team

## Contents

Li	dist of Figures		$\mathbf{v}$
Li	ist of Tables	v	ii
$\mathbf{G}$	Glossary	i	ix
1	Introduction		1
	1.1 Electric Vehicles	•	1
	1.1.1 Pollution		1
<b>2</b>	Aims of the project		5
	2.1 Final aim		5
	2.2 Preliminary aims		5
3	Discussion		7
4	Materials & methods		9
$\mathbf{R}$	References	1	.1

### CONTENTS

## List of Figures

1.1	A common glucose polymers	2
1.2	Title	2

## LIST OF FIGURES

## List of Tables

1.1 title of table								3
--------------------	--	--	--	--	--	--	--	---

## Glossary

DAPI 4',6-diamidino-2-phenylindole; a fluorescent stain that binds strongly to DNA and serves to marks the nucleus in fluorescence microscopy **DEPC** diethyl-pyro-carbonate; used to remove RNA-degrading enzymes (RNAases) from water and laboratory utensils

DMSO dimethyl sulfoxide; organic solvent, readily passes through skin, cryoprotectant in cell culture

EDTA Ethylene-diamine-tetraacetic acid; a chelating (two-pronged) molecule used to sequester most divalent (or trivalent) metal ions, such as calcium  $(Ca^{2+})$  and magnesium  $(Mg^{2+})$ , copper  $(Cu^{2+})$ , or iron  $(Fe^{2+} / Fe^{3+})$ 

### GLOSSARY

## Introduction

#### 1.1 Electric Vehicles

There are many motivating factors behind the development of electric cars. These vehicles utilze new technologies and are represent humanity moving forward in both imagination and respect for the environment.

#### 1.1.1 Pollution

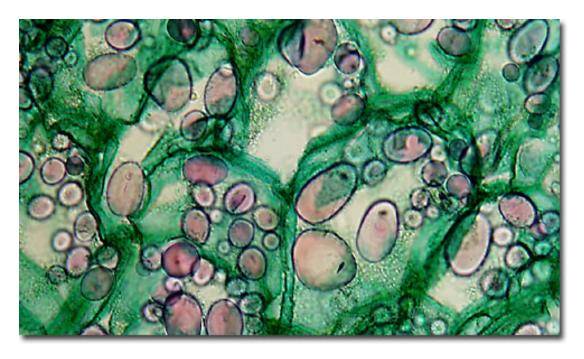
Electric vehicles are advantageous over traditional ICE vehicles as they operate with zero emissions. These vehicles have no exhaust, so therefore have no emissions. While this does not make them completely pollutant free, it does help limit and control the emissions being produced by the act of transport. It is important to remember when discussing electric vehicles that the components must be manufactured using industrial processes and the act of generation electricty. This does not making them truly carbon neutral, but helps limit the sources of pollution. It is much more easier to manage the pollution produced from one power plant, than that from thousands upon millions of vehicles.

Starch of plants and glycogen of animals consists of  $\alpha$ -1,4-glycosidic glucose polymers (1). See figure 1.2 for a comparison of glucose polymer structure and chemistry.

Two references can be placed separated by a comma (1, 2).

Insulin stimulates the following processes:

• muscle and fat cells remove glucose from the blood,



 $\begin{tabular}{ll} \textbf{Figure 1.1: A common glucose polymers - The figure shows starch granules in potato cells, taken from Molecular Expressions.} \end{tabular}$ 

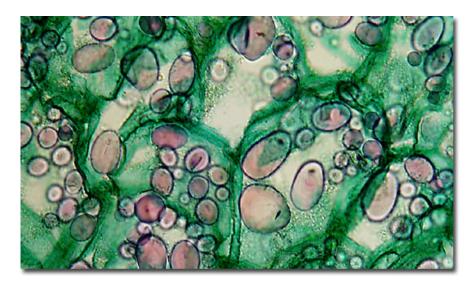


Figure 1.2: Title - Caption

- cells breakdown glucose via glycolysis and the citrate cycle, storing its energy in the form of ATP,
- liver and muscle store glucose as glycogen as a short-term energy reserve,
- adipose tissue stores glucose as fat for long-term energy reserve, and
- cells use glucose for protein synthesis.

$\mathbf{Gene}$	GeneID	Length
human latexin	1234	14.9  kbps
mouse latexin	2345	$10.1~\mathrm{kbps}$
rat latexin	3456	9.6  kbps

Table 1.1: title of table - Overview of latexin genes.

### 1. INTRODUCTION

## Aims of the project

## 2.1 Final aim

Our ultimate goal is...  $\,$ 

## 2.2 Preliminary aims

There will be several preliminary scientific targets to be accomplished on the way...

## 2. AIMS OF THE PROJECT

## Discussion

### 3. DISCUSSION

Materials & methods

### 4. MATERIALS & METHODS

## References

[1] Lastname. Title. Journal of Sth, 2007. 1

### Declaration

I herewith declare that I have produced this paper without the prohibited assistance of third parties and without making use of aids other than those specified; notions taken over directly or indirectly from other sources have been identified as such. This paper has not previously been presented in identical or similar form to any other German or foreign examination board. The thesis work was conducted from XXX to YYY under the supervision of PI at ZZZ.

CITY,