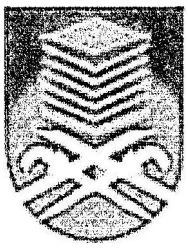

VIRTUAL MATERIAL SCIENCE LABORATORY MANUAL

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Table of Contents **Page Number**

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ABSTRACT

This Virtual Material Science laboratory manual is basically a computer programming project to computerized conventional material science laboratory manual. This indicates that all the experimental scripts can able to be displayed in interactive manner using computer as a platform rather than paper handout.

This project considers various aspects in the process of developing the computer program. Start from collecting related theories and experiments involved in the Material Science subject, selection of computer programming language and lastly designing the user interface and display of the program. Progression of this new virtual laboratory manual is also considered in the research.

Virtual laboratory manual is a web programming and up to date programming language such as HTML, JavaScript and ASP is implemented to fulfill the needs and requirements of this project. This project can set a new development trend of the virtual laboratory programming project to the faculty.

Chapter 1

Introduction

1.1 Objective

The main purpose of this project is to develop a working computer program for laboratory assessments on subject related to material science that is thought for degree and diploma students in the faculty.

The program will be able to assess by students to perform their laboratory works virtually by giving instructions and information needed. The program is capable to perform calculation involved in the experiments and give proper print out of the result and discussion.

Several experiments such as hardness testing for different kind of material, heat treatment for steel and non-ferrous metal, observation on metallographic appearances, observation on the microstructure of cast iron and Jominy quenched-end test will be implemented in a software that can be used by students. Study on a suitable programming language that is Hypertext Markup Language (HTML); is also necessary in order to produce a running software.

1.2 Significance of the Project

This project will produce a computer program that is beneficial not only for students but for lecturer as well. It will give better understanding to students with user friendly and easy to read instructions. The program will help and lead students in order to complete their lab session.