Title Page

(For reports, use the CWJCR report cover. Notice the limited space for printing the title, report number, contract number, submitted to:, submitted by:, date, etc. Variable font sizes can be used to make the report cover visually pleasing. The Report number is always at the page top, right corner. Use transparent plastic cover before the title page. Bind report using the spiral binder or other binders.)

Table of Contents

(Start numbering from this page on until the end of the document/report/proposal. Insert page numbers at page bottom, center or right corner. Appendix may have a different numbering system.)

Abstract/Executive Summary

(An abstract should have around 500 words, but not more than 750 words. An executive summary can be longer, as long as 1000 words.)

I. Introduction

(For the report text, use font size 12 for typical reports. Insert line space between heading and paragraph and between paragraphs. Start paragraphs without indent - currently accepted format. For draft copies, use 1.5 spacing to facilitate revision and editing. For final copies, use single spacing.)

II. Literature Review

II.1. Welding Fluxes

II.1.a. Chemical Nature of Fluxes

II.1.a.1. Ionic Theory as proposed by Flood

(Always retain headings in separate lines. Avoid using more than four levels of sub-headings. Use icon type bullets wherever necessary, i.e. under any levels of sub-heading. However, avoid further numbering. Refrain from using uncommon bullets since different computers may not have all the font files. Instead, unusual characters will be displayed.)

III. Technical Approach

(Note that you may not and do not have to use all the headings listed in this set of guidelines. Omit existing ones or add new ones if necessary.)
IV. Scope/Objectives

V. Experimental Procedure

VI. Results and Discussion

(Some authors present the results together with discussion. Others prefer separate sections on results and discussion.)

VI.1. Weld Metal Temperature Measurements

VI.1.a. Thermocouple Data Details

(Data can be reported in table form or graphs. If tables are included in the text, always remember that table captions precede the tables. If figures are included in the text, note that figure captions follow the figures. Data plots and photomicrographs are treated as figures, similar to schematic drawings. Preferentially, tables and figures should be inserted in appropriate locations near to the citation, whether in the text or as a separate page. However, they can also be grouped together and presented at the end of the report, but before the appendices.)

Table I. Flux Components and Their Primary Functions.

<table>
<thead>
<tr>
<th>Component</th>
<th>Chemical Formula</th>
<th>Primary Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina</td>
<td>Al₂O₃</td>
<td>Arc Stabilizer</td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>CaCO₃</td>
<td>Shielding Gas</td>
</tr>
<tr>
<td>Calcium Fluoride</td>
<td>CaF₂</td>
<td>Slag Former</td>
</tr>
<tr>
<td>Feldspar</td>
<td>K₂O·Al₂O₃·6SiO₂</td>
<td>Slag Former</td>
</tr>
<tr>
<td>Ferro-boron</td>
<td>Fe-B</td>
<td>Alloying</td>
</tr>
<tr>
<td>Ferro-manganese</td>
<td>Fe-Mn</td>
<td>Deoxidation-Alloying</td>
</tr>
<tr>
<td>Ferro-titanium</td>
<td>Fe-Ti</td>
<td>Deoxidation-Alloying</td>
</tr>
<tr>
<td>Iron Oxide</td>
<td>Fe₂O₃</td>
<td>Slag Former</td>
</tr>
<tr>
<td>Kaolin</td>
<td>Al₂O₃·3SiO₂·H₂O</td>
<td>Slipping Agent</td>
</tr>
<tr>
<td>Mica</td>
<td>K₂O·3Al₂O₃·6SiO₂·H₂O</td>
<td>Slipping Agent</td>
</tr>
<tr>
<td>Potassium Silicate</td>
<td>K₂O·SiO₂</td>
<td>Binder</td>
</tr>
<tr>
<td>Potassium Titanate</td>
<td>K₂O·TiO₂</td>
<td>Arc Stabilizer</td>
</tr>
<tr>
<td>Silica</td>
<td>SiO₂</td>
<td>Slag Former</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Na₂O·SiO₂</td>
<td>Binder</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>TiO₂</td>
<td>Slag Former</td>
</tr>
</tbody>
</table>
Figure 1. Arc signal data plotted as a function of lateral distance from the center of the arc.

VI.1.a.1. Temperature Data Conversion

VII. Discussion

VIII. Economic Impact

IX. Safety Concerns

X. Conclusions/Summary

Acknowledgment

XI. References

Christensen, N., Welding Metallurgy Notes, Colorado School of Mines, 1981. (Arrange all references in alphabetical order. An example of citation in the text: "...... A dimensionless approach was introduced in the 1950s for calculating the temperature field in the adjacencies of a weldment [Christensen]. You may need to supplement the format above with other details such as volume, number, page, etc.)

XII. Future Research Plans

XIII. Research Team

XIV. Brief Vitae

XV. Appendices
Additional Headings for Proposals

Work Statement
Deliverables
Proposed Budget
Business Plan
Time Table (Gantt Chart)
ABSTRACT OR SUMMARY REPORT:

Page   Function
1       Title page
2       Abstract or summary, comprising a maximum one-half page of double-space type, must discuss succinctly the results by specific reference to figures or tables.
3 to 5  Figures or tables, limited to the three most important for clarifying the summary.

TECHNICAL REPORT (Required sections are capitalized and underlined below):

Page   Function
1       Title page
2       ABSTRACT (do not reference figures)
3 and 4 Text, limited to two double-spaced typed pages (minimum type size: 12 pt). Text must include these sections:

   INTRODUCTION - Two to three sentences which scope the experiment

   DISCUSSION - Analysis of results emphasizing fundamental principles

   CONCLUSIONS - Maximum of three statements that incorporate the most important points

5       FIGURES/TABLES

A1 to A? Appendix A (if required)