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**DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING**

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**MSE 4198 ENGINEERING PROJECT II**

**UNDERGRADUTE THESIS**

Department of Metallurgical and Materials Engineering

**Thesis Supervisor**

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**MARMARA UNIVERSITY**

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##

# **ACKNOWLEDGEMENT/PROLOGUE**

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 APPENDIX

# **ÖZET**

**Proje adı**

**Anahtar kelimeler:**

#

**ABSTRACT**

**PROJECT NAME**

**Keywords:**

# **ABBREVIATIONS**

 **Definition:**

|  |  |
| --- | --- |
| PGMs | Platinum group metals |
| AAS | Atomic absorption spectroscopy |
| UN | United Nations |
| UV-Vis/NIR® | Ultraviolet/Visible/Near Infrared Spectroscopy (UV/VIS/NIR) |
| XRD | X-Rays Diffractometer |

# **LIST OF FIGURES**

# **LIST OF TABLES**

# **INTRODUCTION**

## General Information

**1.2. The Importance of the Subject, the Original Value of the Research Proposal, and the Research Questions/Hypothesis**

**1.3. Purpose and Objectives**

**Figure 1.1. xxx**

### 1.4 Definitions of Problem and Constraints

|  |  |
| --- | --- |
| Strengths* Low cost
* Coherent with the UN Sustainability Golas
* Green approach, environmentally friendly
 | Threats * Time
* Budget and primary investments
* Limited work time
 |
| Opportunities* Possibility for several publications or/and presentations
* Possible realization of the project at the industrial scale
 | Weakness* Financial support for the next level of the project
* Lack of people interested in sustainability and high-tech research in the industry
 |

Figure 1. SWOT Analysis of the study.

### 1.5 Plan B

**2.MATERIALS & METHOD**

**3. PROJECT MANAGEMENT**

**3.1 Work-Timetable**

Table 2. Work-Time Table (\*)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Work Package No** | **Name and Targets of Business Packages** | **By Who(s) It Will Be Performed** | **Time Range****(1-12 Months)** | **Success Criterion and Contribution to the Success of the Project** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |

**3.2 Risk Management**

The risks that may adversely affect the success of the research and the measures to be taken to ensure the successful conduct of the research when these risks are encountered (Plan B) are outlined in the Risk Management Table below by specifying the relevant work packages. The implementation of plans B should not deviate from the main objectives of the research.

Table 3. Risk Management Table\*

|  |  |  |
| --- | --- | --- |
| **IP No** | **Top Risks** |  **Risk Management (Plan B)** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |

**3.3. Research Facilities**

In this section, the infrastructure/equipment (laboratory, vehicle, machinery-equipment, etc.) facilities that exist in the institutions and organizations where the project will be carried out and will be used in the project are specified.

Table 4. Equipment and devices used in the project and their purposes

|  |  |
| --- | --- |
| **Type and Model of Infrastructure/Equipment Found in the Organization (Laboratory, Vehicle, Machinery-Equipment, etc.)** | **Purpose of Use in the Project** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**4.COMMON EFFECT**

 If the proposed study is carried out successfully, the expected and expected common effects of the study, in other words, what outputs, results and effects will be obtained from the research are given in the table below.

Table 5. Expected Common Effect from research study

|  |  |
| --- | --- |
| **TYPES OF COMMON EFFECTS** | **Expected Output, Outcome and Effects from the Proposed Research** |
| **Scientific/Academic** (Article, Paper, Book Chapter, Book) |  |
| **Economic/Commercial/Social** (Product, Prototype, Patent, Utility Model, Production Permit, Variety Registration, Spin-off/Start-up Company, Audio/Visual Archive, Inventory/Database/Documentation Production, Subject to Copyright Work, Media, Fair, Project Market, Workshop, Education, etc. Scientific Event, Institution/Organization to Use Project Results, etc. other common effects) |  |
| **Researcher Training and Creating New Project(s)** (Master's/PhD Thesis, National/International New Project) |  |

**5. BUDGET DEMAND SCHEDULE**

Table 6. Estimated budget of the project.

|  |  |  |
| --- | --- | --- |
| Budget Type | Demanded Budget Amount (TL) |  **Reason for Request** |
| **Supplies** |  |  |
| **Machinery/Equipment (Asset)** |  |  |
| **Procurement of services** |  |  |
| **Transportation** |  |  |
| **TOTAL** |  |  |

**6. RESULTS and DISCUSSION**

**7.CONCLUSIONS**

**REFERENCES**

[1] L. Erdmann, T.E. Graedel, Criticality of non-fuel minerals: a review of major approaches and analyses, Environ. Sci. Technol. 45 (2011) 7620–7630, http://dx.doi.org/10.1021/es200563g.