A close-up of a sign

Description automatically generated

**SCHOOL OF SCIENCE**

**DEPARTMENT OF CHEMISTRY**

**POSTGRADUATE PROGRAM**

**“INORGANIC CHEMISTRY AND ITS APPLICATIONS IN INDUSTRY”**

**RESEARCH DIPLOMA THESIS**

**Title**

**NAME AND SURNAME**

**AREA OF SPECIALIZATION (e.g., CHEMIST)**

**ATHENS**

**MONTH** **YEAR**

**RESEARCH DIPLOMA THESIS**

Title

**NAME AND SURNAME**

**R.N.:** 000000000000000000000000000

**THESIS COMMITTEE**

DATE OF THESIS DEFENSE DD/MM/YEAR

**ABSTRACT**

**SUBJECT AREA:**

**KEYWORDS:** 5 keywords

**ACKNOWLEDGEMENTS**

**CONTENTS**

[**CHAPTER 1 [HEADING]** 15](#_Toc150623746)

[1.1 Basic concepts 15](#_Toc150623747)

[1.2 Subheading 15](#_Toc150623748)

[**CHAPTER 2 [HEADING]** 16](#_Toc150623749)

[2.1 Subheading 16](#_Toc150623750)

[2.2 Subheading 16](#_Toc150623751)

[2.3 Subheading 16](#_Toc150623752)

[**2.3.1** **Subheading** 16](#_Toc150623753)

[**2.3.2** **Subheading** 16](#_Toc150623754)

[2.4 Subheading 16](#_Toc150623755)

[CONCLUSIONS 18](#_Toc150623756)

[**ABBREVIATIONS-ACRONYMS** 19](#_Toc150623757)

[**APPENDIX I** 21](#_Toc150623758)

[**APPENDIX II** 22](#_Toc150623759)

[REFERENCES 23](#_Toc150623760)

**LIST OF SCHEMES**

[Scheme 1. Mechanism of catalytic alcohol oxidation **Error! Bookmark not defined.**](#_Toc106133190)

**LIST OF FIGURES**

[**Figure 1.** Serene sunset 17](#_Toc150623708)

**LIST OF TABLES**

[**Table 1.** Selected properties of the first-row d-block elements. 15](#_Toc150622956)

**CHAPTER 1  
[HEADING]**

* 1. **Basic concepts**

The electron configuration and selected properties of the elements of the first-row d-block elements are presented in Table 1.

**Table 1. Selected properties of the first-row d-block elements.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Element** | **Z** | **Electron configuration** | **Electronegativity** | **Metallic radius (nm)** | **Melting point (ºC)** | **Density (g cm-3)** |
| **Sc** | 21 | [Ar]3d14s2 | 1.36 | 0.162 | 1541 | 2.99 |
| **Ti** | 22 | [Ar]3d24s2 | 1.54 | 0.147 | 1668 | 4.51 |
| **V** | 23 | [Ar]3d34s2 | 1.63 | 0.134 | 1910 | 6.00 |
| **Cr** | 24 | [Ar]3d54s1 | 1.66 | 0.128 | 1907 | 7.15 |
| **Mn** | 25 | [Ar]3d54s2 | 1.55 | 0.127 | 1246 | 7.30 |
| **Fe** | 26 | [Ar]3d64s2 | 1.83 | 0.126 | 1538 | 7.87 |
| **Co** | 27 | [Ar]3d74s2 | 1.88 | 0.125 | 1495 | 8.86 |
| **Ni** | 28 | [Ar]3d84s2 | 1.91 | 0.124 | 1455 | 8.90 |
| **Cu** | 29 | [Ar]3d104s1 | 1.90 | 0.128 | 1085 | 8.96 |
| **Zn** | 30 | [Ar]3d104s2 | 1.65 | 0.134 | 420 | 7.13 |

All elements except scandium can be found in the divalent state, corresponding

The first-row d-block elements can react with various chemical elements.

* 1. **Subheading**

Text text text

**CHAPTER 2   
[HEADING]**

* 1. **Subheading**

Text text text

* 1. **Subheading**

Text text text

* 1. **Subheading**

Text text text

* + 1. **Subheading**

Text text text

* + 1. **Subheading**

Text text text

* 1. **Subheading**

Text text text



**Figure 1. Serene sunset**

# CONCLUSIONS

Text text text

**ABBREVIATIONS-ACRONYMS**

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**APPENDIX I**

**Text text text**

**APPENDIX II**

**Text text text**

# REFERENCES

1. O'Garra, A.; Redford, P. S.; McNab, F. W.; Bloom, C. I.; Wilkinson, R. J.; Berry, M. P. R., The immune response in tuberculosis. *Annu.* *Rev*. *Immunol*., **2013**, *31*, 475-527.

2. Frieden, T. R.; Sterling, T. R.; Munsiff, S. S.; Watt, C. J.; Dye, C. Tuberculosis. *Lancet* **2003,** *362*, 887-899.

3. Koul, A.; Arnoult, E.; Lounis, N.; Guillemont, J.; Andries, K. The challenge of new drug discovery for tuberculosis. *Nature* **2011,** *469*, 483-490.

4. Smith, I. Mycobacterium tuberculosis pathogenesis and molecular determinants of virulence. *Clin. Microbiol. Rev.* **2003,** *16*, 463-496.