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COLOUR TERMS IN INORGANIC CHEMISTRY: A CORPUS STUDY

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Abstract

Colour is a common physical phenomenon involving selective absorption, reflection or transmission of certain wavelengths of light. It is one of the fundamental properties of chemical compounds, which is particularly evident in the field of inorganic chemistry.

The aim of this paper is to present colour terms used by scientists in the field of inorganic chemistry. We concentrate both on basic and non-basic colour terms – as understood by Berlin and Kay (1969). The research material is extracted from a corpus compiled with AntConc, consisting of abstracts published in Inorganic

Chimica Acta, Inorganic Chemistry Communications, Journal of Inorganic Biochemistry and ten other chemical journals. The size of the corpus is 1,626,380 words.

The most frequent basic colour terms found in the abstracts are blue (370 occurrences), green (302) and red (222), whereas the non-basic terms include, among others, violet (46) and cyan (4). In this paper, we investigate the uses of these and other colour words, focusing mainly on their occurrence in names of chemical compounds and other terms as well as in descriptions.

Keywords: *colour terms, English, corpus study, inorganic chemistry, terminology.*

1. Introduction.

Colour is a physical phenomenon involving selective absorption, reflection or transmission of certain wavelengths of light. It is one of the fundamental properties of chemical compounds, which is particularly evident in the field of inorganic chemistry.

In this paper, we present colour terms employed by scientists in the field of inorganic chemistry. We will concentrate both on basic and non-basic colour terms – as understood by Berlin and Kay (1969). The research material is extracted from a corpus compiled with AntConc, consisting of abstracts published in thirteen chemical journals, including, among others, *Inorganic Chimica Acta*, *Inorganic Chemistry Communications* and *Journal of Inorganic Biochemistry*. The size of the corpus is 1,626,380 words.

2. Literature Review.

2.1. Colour Vocabulary.

Colour vocabulary has been investigated from various perspectives: etymological, morphological, semantic, symbolic as well as comparative, to name just a few (see, among others, Anderson, Biggam, Hough and Kay, eds., 2014; Baran and Szeflińska-Baran, 2018; Berlin and Kay, 1969; Biggam, 2012; Biggam, Hough, Kay and Simmons, eds., 2011; Grzegorczykowa and Waszakowa, eds., 2000, 2003; Hardin and Maffi, eds., 1997; Kay and Maffi, 1999; Komorowska, 2010, 2017; Komorowska and Stanulewicz, 2018; Kosik-Szwejkowska, 2019; MacDonald, Biggam, Paramei, eds., 2018; MacLaury, 1997; Stala, 2011; Stanulewicz, 2009; Steinvall, 2002; Tokarski, 2004; Warth-Szczygłowska, 2014; Wierzbicka, 1996).

For the purposes of our study, we adopt the classification of colour terms proposed by Berlin and Kay (1969). Basing on the investigation of colour words found in 98 languages, Berlin and Kay suggest that there are eleven basic colour terms which join the lexicon in a stated order (see Figure 1).

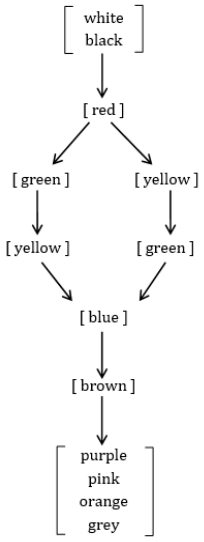

Figure 1. The evolutionary sequence of basic colour terms (based on Berlin and Kay 1969, p. 4, 104)

As Figure 1 demonstrates, the first basic colour terms in the lexicon of a language happen to be words for white and black, the third is a word for red, the fourth and fifth – words for green and yellow (or yellow and green), the sixth – a word for blue and the seventh – a word for brown. The remaining four terms – referring to purple, pink, orange and grey – join the colour lexicon in any order. We should note here that the evolutionary sequence has been modified, with new findings and assumptions taken into account (Kay, Berlin, Maffi and Merrifield, 1997; Kay and Maffi, 1999, 2005).

According to Berlin and Kay (1969, p. 6), a basic colour term should fulfil the following main criteria:

"(i) It is *monolexemic*; that is, its meaning is not predictable from the meaning of its parts [...]
(ii) Its signification is not included in that of any other color term. [...]
(iii) Its application must not be restricted to a narrow class of objects. [...]
(iv) It must be psychologically salient for informants. Indices of psychological salience include, among others, (1) a tendency to occur at the beginning of elicited lists of color terms, (2) stability of reference across informants and across occasions of use, and (3) occurrence in the idiolects of all informants. [...]"

Additionally, Berlin and Kay (1969, p. 6–7) give four subsidiary criteria to be used in doubtful cases:

"(v) The doubtful form should have the same distributional potential as the previously established basic terms. [...]
(vi) Color terms that are also the name of an object characteristically having that color are suspect [...]
(vii) Recent foreign loan words may be suspect.
(viii) In cases where lexemic status is difficult to assess [...], morphological complexity is given some weight as a secondary criterion. [...]"

In this paper, we concentrate on English colour vocabulary. The set of basic colour terms found in this language includes the following words: *white*, *black*, *red*, *green*, *yellow*, *blue*, *brown*, *purple*, *orange*, *pink* and *grey* (see, among others, Corbett and Davies, 1995). The criteria presented above exclude numerous words from this set, such as *violet*, *magenta*, *cyan*, *rose*, *olive*, *indigo*, *carmine* and many other colour terms.

2.2. Studies on Scientific Terminology.

Terminology is generally defined as "the sum total of terms used in a particular subject, e.g. chemistry or phonetics or swimming, and contained in special glossaries and dictionaries" (Hartmann and Stork, 1973, p. 236). *Terminology* also refers to a branch of linguistics which deals with collecting and investigating specialized terms (Sager, 1990, p. 3; de Bessé et al., 1997, p. 154; Michta, 2018, pp. 9–16).

Numerous scholars have analyzed specialized vocabulary with a view to creating word lists useful to learners of foreign languages for special purposes. According to Coxhead and Demecheleer (2018, p. 84), this particular type of research is popular in the study of English for Special Purposes (ESP). Hyland and Tse (2007, p. 238) examine English vocabulary for academic purposes (EAP) in a corpus which takes into account various disciplines, text types and authors' expertise. The disciplines whose terminologies are investigated by scholars include, among others, biology, physics, sociology and applied linguistics. Gardner and Davies (2014) analyze different subcorpora of the Corpus of Contemporary American English (COCA) to create a new Academic Vocabulary List (AVL). Apart from general studies of academic vocabulary, researchers pay attention to

specific disciplines in order to compile subject-specific word lists, e.g. commerce and finance (Chujo and Utiyama, 2006), medicine (Hsu, 2013; Lu and Coxhead, 2020), modern patent language (Lin and Hsieh, 2010), nursing (Yang, 2015) and plumbing (Coxhead and Demecheleer, 2018).

Chemistry is one of the disciplines whose terminology has drawn attention of some scholars. Ward (1999) investigates vocabulary of engineering where one of the studied sub-disciplines is chemistry. Ward (1999, p. 320) compiles a list of words that includes such words as *artificial*, *illness*, *penetrate*, *solute*, *accident* and *boron*. This list hardly contains any specialized vocabulary. It generally presents words which occur in the investigated corpus. Loyson (2010, p. 1305–1306), on the other hand, presents the use of Latin roots in chemical terms. The author also emphasizes the use of Latin roots in specific branches of chemistry, that is, analytical chemistry, inorganic chemistry, organic chemistry and physical chemistry. Loyson arrives at the conclusion that principal chemical terms originate from Latin. Moreover, Valipouri and Nassaji (2013) investigate academic words frequently used in chemistry research articles and compare their findings with reference lists created by Coxhead (2000). Also, a study conducted by Michta (2018) is worth mentioning. In the English-Polish systematic dictionary of chemistry, he discusses chemical terms as a network representing interrelated concepts.

2.3. Studies on Colour Vocabulary Used in the Sciences.

The phenomenon of colour is investigated by numerous scholars representing different scientific disciplines, including physics, chemistry, mathematics, biology and medicine (see, e.g. Chandrasekaran, 2001; Maciejewska and Maciejewska-Szaniec, 2012; Zausznica, 2012). However, colour terms employed in these disciplines are examined more rarely. The linguists who take interest in colour words used in scientific texts include, among others, Gonigroszek (2015), who analyses names of diseases deriving from colour words, and Pułaczewska (2016), who examines metaphorical expressions containing colour terms used in physics.

3. Aim and Objectives.

The aim of this paper is to investigate colour terms in inorganic chemistry. The uses of both basic and non-basic colour terms will be examined. This study addresses the following research questions:

(1) What colour terms occur in the corpus?

(2) What is the frequency of basic and non-basic colour terms?

(3) What are the most common uses of colour terms in the corpus of inorganic chemistry?

4. Methodology.

We employ corpus tools to extract colour terms used in texts dealing with inorganic chemistry. Making use of corpus tools to study colour vocabulary is presented in Steinvall (2002) as well as in Stanulewicz (2007, 2016) and many other works. Researchers discuss various aspects of colour vocabulary which can be investigated with corpus tools. These aspects include not only the frequencies of colour words and collocations, but also their polysemy, synonymy and figurative uses (Stanulewicz, 2016). Moreover, using corpora, we can examine fixed phrases, technical terms and proper names containing colour terms. Numerous researchers employ corpus tools in examining the use of colour terms in different languages (see, for instance, Apresjan, 2018; Bogushevskaya, 2021; Gheltofan and Pungă, 2018; Gieroń-Czepczor, 2011; Grossmann and D'Achille, 2016; Hamilton, 2016;

Palfreyman, 2016; Lototska, 2021; as well as our papers: Stanulewicz and Gierczyńska-Kolas, 2021; Stanulewicz and Grabarska, 2018; Stanulewicz and Komorowska, 2021; Stanulewicz and Pawłowski, 2018; Stanulewicz and Radomyski, 2021).

Investigating colour terms employed in inorganic chemistry, we focus on the use of these words in the terminology of this discipline, taking into consideration their other uses as well. The research material comes from a corpus compiled by one of us (see Table 1). We have called it the Inorganic Chemistry Corpus (ICC).

Table 1

The structure of the Inorganic Chemistry Corpus (compiled by Konrad Radomyski)

Journal	Years	Number of words	Percentage
Inorganic Chimica Acta	2016–2021	480,880	29.57
Inorganic Chemistry Communications	2016–2021	274,686	16.89
Journal of Inorganic Biochemistry	2016–2021	265,154	16.30
Coordination Chemistry Reviews	2016–2021	245,414	15.09
Journal of Fluorine Chemistry	2016–2021	112,223	6.90
Journal of Solid State Chemistry	2016–2021	54,518	3.35
Solar Energy Materials and Solar Cells	2016–2021	50,511	3.11
Polyhedron	2016–2021	43,356	2.67
Nano-Structure & Nano-Objects	2016–2021	35,736	2.20
Materials Science for Energy Technologies	2018–2021	34,659	2.13
Journal of Organometallic Chemistry	2016–2021	19,417	1.19
Tetrahedron Asymmetry	2016–2021	6,166	0.38
Green Synthesis and Catalysis	2020–2021	3,660	0.23
Total		1,626,380	100.00

ICC contains abstracts from 13 academic journals, selected by using the key term *inorganic chemistry*. The journals are available at *ScienceDirect* (URL: https://www.sciencedirect.com/).

The tool used to extract fragments with colour words from the corpus is the software AntConc version 3.5.8.0, developed by Laurence Anthony (URL: https://www.laurenceanthony.net/software/antconc/). The identified terms containing colour words have been consulted with the following sources:

(1) *A Dictionary of Inorganic Chemistry* by Daintith (2008);

(2) *IUPAC Red Book, Nomenclature of Inorganic Chemistry by* Connelly et al. (2005);

(3) *IUPAC Compendium of Chemical Terminology* by McNaught and Wilkinson (2014).

We have also consulted Dr Malwina Diduch, a specialist in chemistry, who has verified our classification of the uses of colour terms found in the abstracts.

5. Results.

We have extracted fragments containing the eleven basic colour terms and eight non-basic colour terms from ICC. Before we present their frequencies and uses in the chemical abstracts, we need to explain that in this study, we do not make any distinction between their uses as nouns and adjectives. We plan to analyze the distribution of particular word classes in another paper.

5.1. Basic Colour Terms.

As signalled above, all the eleven basic colour terms (white, black, red, green, yellow, blue, brown, purple, orange, pink and grey) occur in the corpus. Table 2 presents their frequencies.

Table 2

The frequencies of the basic colour terms

Colour term	Absolute frequency	Relative frequency (per 1,000,000)
blue	370	227.5
green	302	185.7
red	222	136.5
orange	130	79.9
yellow	119	73.2
white	49	30.1
black	32	19.7
brown	21	12.9
purple	18	11.1
pink	15	9.2
grey/gray	2	1.2

Let us now concentrate on the uses of particular basic colour terms in the abstracts. Below, we provide numerical data as well as illustrative examples.

Blue is used 178 times in names of compounds, e.g. *methylene blue* (*MB*), *Prussian Blue* (*PB*), *Reactive Blue 13*. *Blue* is also employed 155 times in descriptions of light emitting properties of chemical substances, e.g. *blue light, blue emission, blue luminescence*. Lastly, *blue* occurs 37 times in general descriptions of compounds, solutions etc., e.g. *blue form, blue carbon dots* (*CDs*), *blue solution*.

Green occurs 302 times in the corpus. It appears only 7 times in names of chemical compounds, e.g. *malachite green* (*MG*) / *malachite green dye, methylene green, Brilliant Green* (*BG*). *Green* is used in descriptions of light emitting properties, e.g. *green emission, green region, green luminescence*/*luminescent, green fluorescence*/*fluorescent*. *Green* is used in descriptions of various chemical compounds (24), e.g. *green complex, green solid, green colour of copper*. It is also employed in other contexts with the meaning 'ecological' (177), e.g. *green chemistry* / *Green Chemistry, green chemistry* / *Green Chemistry principle*/*rule, green synthesis*/*synthesised*/*synthetic, green material*/*medium*/*method*. Finally, *green* is also part of certain miscellaneous biological terms (8), e.g. *African green monkey, the green alga Chlamydomonas reinhardtii, green tea*.

Red is found 40 times in names of compounds, e.g. *Red Congo* / *congo red* (*RC*), *Red Congo* / *congo red dye* (*RC*), *Neutral Red* / *neutral red* (*NR*), *alizarin red S*. It occurs 123 times in descriptions of light emitting properties, e.g. *red shift*/*shifted, red emission, red luminescence*. This colour term is used 45 times in descriptions of compounds, e.g. *red solid, red phosphor, red complex*. Lastly, it is found 14 times in biological terms, e.g. *Red Blood Cell* / *red blood cell* (*RBC*), *red cell membrane, red microorganism, Rhodotorula rubra*.

Orange occurs 89 times in names of chemical compounds, e.g. *Methyl Orange* / *methyl orange* (*MO*), *acridine orange* (*AO*), *Orange IV* (*OIV*). It is also used in both descriptions of light emission (22), e.g. *orange emission*/*emitting, from orange to red emitting, pure orange field*, and descriptions of compounds (16), e.g. (*dark*) *orange crystal, orange complex*/*compound, orange solid*. There are 2 occurrences which are classified as

other uses: *orange juice*, *orange protein* (*ORP*) and 1 occurrence which is classified as a biological term: *Osage orange*.

Yellow is used 6 times in names of compounds, e.g. *Reactive Yellow* (*RY 160*), *Acid Yellow* (*AY 1*), *Basic Yellow 24* (*BY 24*). This colour term is employed 31 times in descriptions of light emission, e.g. *yellow emission*/*emissive*/*emitter*, *yellow fluorescence*/*fluorescent*, *yellow luminescence*. It is also used 80 times in descriptions of compounds, e.g. *Prussian yellow material*/*nanostructures*, *dark yellow complex*, *yellow and orange compounds*. *Yellow* is also found in 2 biological terms, i.e. *yellow and purple passion fruit seeds* and *yellow passion fruit seed oil*.

White is used in 25 descriptions of light emission, e.g. *white light emission*/*illuminating*, *white light-emitting diodes*, *white emission*. It is also found 10 times in biological terms, e.g. *chicken*/*hen white egg Lysozyme* (*CEWL*/*HEWL*), *egg white*, *white blood cells* (*WBCs*). *White* is found in 8 descriptions of chemical compounds, e.g. *white phosphor*, *white phosphorous*, *white pigment*. Finally, there are 6 other uses of *white*, e.g. *the white* […] *backsheet*, *White Light Interferometry*.

Black is used 18 times in names of chemical compounds, e.g. *carbon black* (*CB*), *black phosphorus*, *Acid Black 1* (*AB 1*), and 14 times in descriptions of compounds, solutions or crystals, e.g. *black cubic-like crystal*, *black NiTiO nanotubes*, *the black allotrope of phosphorus*.

Brown is part of one term used only 3 times. It is *Bismarck brown*, a chemical compound. The remaining examples (18) are descriptions of solid-state substances, e.g. *complexes brown in colour*, *brown and air-stable solid*, *brown icosahedral isomer*.

Purple occurs once in a name of a compound, i.e. *dinuclear metallohydrolase purple acid phosphatase*, 3 times in descriptions of light emitting properties, i.e. *luminescence in the purple and blue regions*, *emitted purple light*, *UV-vis spectra* [...] *from pale yellow to purple*, and 12 times in descriptions of compounds, e.g. *suspension turned* [...] *from faint pink to purple*, *blue-purple in the coloured state*, *dark purple*/*red solids*. *Purple* also appears twice in descriptions of a fruit and a bacterium, i.e. *from yellow to purple passion fruit seeds*, *purple sulphur bacterium Thiocapsa*.

Pink appears only 7 times in three descriptions of light emitting properties, e.g. *from yellow to pink UV-vis*/*fluorescent*, *fluorescent* [...] *colourless to pink* and *colourless-pink-colourless transitions*, and 8 times in general descriptions of compounds, e.g. *red and yellow to pink* (of compounds), *crystalline phase* [...] *between pink and purple*, *pink colour* (of compounds).

Grey/*gray* appears only twice: *grey* occurs in the description *grey Se* and *gray* in the biological term *gray matter*.

Table 3 and Figure 2 present the frequencies of the particular uses of the basic colour terms found in the corpus.

Table 3

The uses of basic colour terms

Uses / Colour term	Names of chemical compounds		Descriptions of light emitting properties		Descriptions of chemical compounds		Meaning 'ecological'		Biological terms		Other uses		Total
	F	%	F	%	F	%	F	%	F	%	F	%	
blue	178	48.11	155	41.89	37	10.00	0	0.00	0	0.00	0	0.00	370
green	7	2.32	86	28.48	24	7.95	177	58.61	8	2.65	0	0.00	302
red	40	18.02	123	55.41	45	20.27	0	0.00	14	6.31	0	0.00	222

Uses / Colour term	Names of chemical compounds		Descriptions of light emitting properties		Descriptions of chemical compounds		Meaning 'ecological'		Biological terms		Other uses		Total
	F	%	F	%	F	%	F	%	F	%	F	%	
orange	89	68.46	22	16.92	16	12.31	0	0.00	1	0.77	2	1.54	130
yellow	6	5.04	31	26.05	80	67.23	0	0.00	2	1.68	0	0.00	119
white	0	0.00	25	51.02	8	16.33	0	0.00	10	20.41	6	12.24	49
black	18	56.25	0	0.00	14	43.75	0	0.00	0	0.00	0	0.00	32
brown	3	14.29	0	0.00	18	85.71	0	0.00	0	0.00	0	0.00	21
purple	1	5.56	3	16.67	12	66.67	0	0.00	0	0.00	2	11.11	18
pink	0	0.00	7	46.67	8	53.33	0	0.00	0	0.00	0	0.00	15
grey/ gray	0	0.00	0	0.00	1	50.00	0	0.00	1	50.00	0	0.00	2

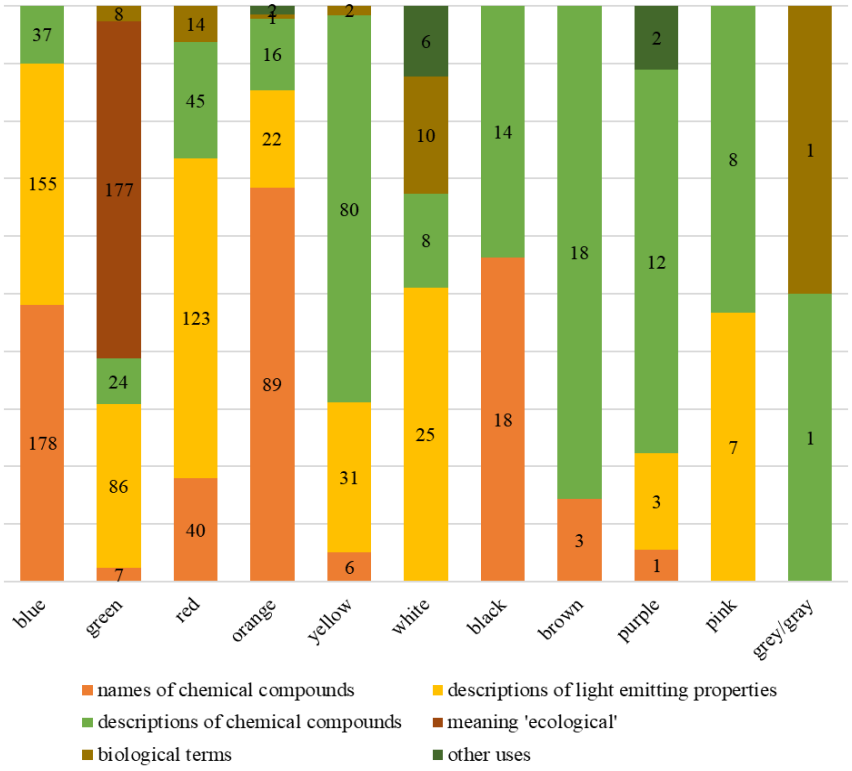

Figure 2. The uses of basic colour terms

5.2. Non-basic Colour Terms.

The non-basic colour terms found in the abstracts are the following: *violet*, *indigo*, *rose*, *cyan*, *olive*, *ruby*, *turquoise* and *golden*. Table 4 presents their corpus frequencies.

Table 4

The frequencies of the identified non-basic colour terms

Colour term	Absolute frequency	Relative frequency (per 1,000,000)
violet	45	27.7
indigo	11	6.8
rose	8	4.9

Colour term	Absolute frequency	Relative frequency (per 1,000,000)
cyan	4	2.5
olive	2	1.2
ruby	2	1.2
turquoise	2	1.2
golden	1	0.6

Violet is the most common non-basic colour term found in the abstracts. It is frequently used in names of compounds (36), e.g. *methyl violet* (*MV*), *Crystal Violet* / *crystal violet* (*CV*) and *gentian violet* (*GV*). It is also employed in descriptions of light emitting properties (4), e.g. *ultra-violet visible* (*UV-vis*), *blue and violet emission* or *near UV and violet light*, and in descriptions of compounds (5), e.g. *solution ranges from red-orange to violet*, *violet complex* and *film presents a dark violet colouration*.

Indigo is used only in names of chemical compounds, e.g. *indigo carmine*, *indigo carmine dyes*, *Ni-6,6'-dibromo-indigo*, *indigo-bridged dilanthanide complexes*.

Rose appears 7 times in names of compounds, e.g. *Rose Bengal* (*RB*), *Rose Bengal* (*RB*) *dye* and *Methyl Rose* (*MR*). It occurs in one biological term, i.e. *rose snapper*, a kind of fish.

Cyan is found 4 times in ICC. It is solely used with reference to light emitting properties of chemical compounds: *blue and cyan emission*, *fluorescence colour change from blue to cyan* and *luminescence from cyan to orangish*.

Olive is used twice in the ICC abstracts. It is found in two descriptions. One of them is a description of a chemical compound: *olive-green few-layered BiOI*. The other one is a description of light emitting properties: *multicolor electrochromic performance (yellow, blue-green, and olive)*.

Ruby appears twice in ICC. This word is used in a description: *solution* […] *changed from ruby colour to blackish blue colour* and in the name of a compound: *molecular ruby*.

Turquoise is used twice in ICC, in two descriptions of chemical compounds, i.e. *turquoise crystals* and *the complex turning to turquoise*.

Golden appears once, in a description of a chemical compound: *from pale yellow to dark golden or green.*

Table 5 and Figure 3 present the frequencies of the particular uses of the non-basic colour terms found in the corpus.

Table 5

The uses of non-basic colour terms

Uses / Colour term	Names of chemical compounds		Descriptions of light emitting properties		Descriptions of chemical compounds		Biological terms		Total
	F	%	F	%	F	%	F	%	
violet	36	80.00	4	8.89	5	11.11	0	0.00	45
indigo	11	100.00	0	0.00	0	0.00	0	0.00	11
rose	7	87.50	0	0.00	0	0.00	1	12.50	8
cyan	0	0.00	4	100.00	0	0.00	0	0.00	4
olive	0	0.00	1	50.00	1	50.00	0	0.00	2
ruby	1	50.00	0	0.00	1	50.00	0	0.00	2
turquoise	0	0.00	0	0.00	2	100.00	0	0.00	2
golden	0	0.00	0	0.00	1	100.00	0	0.00	1

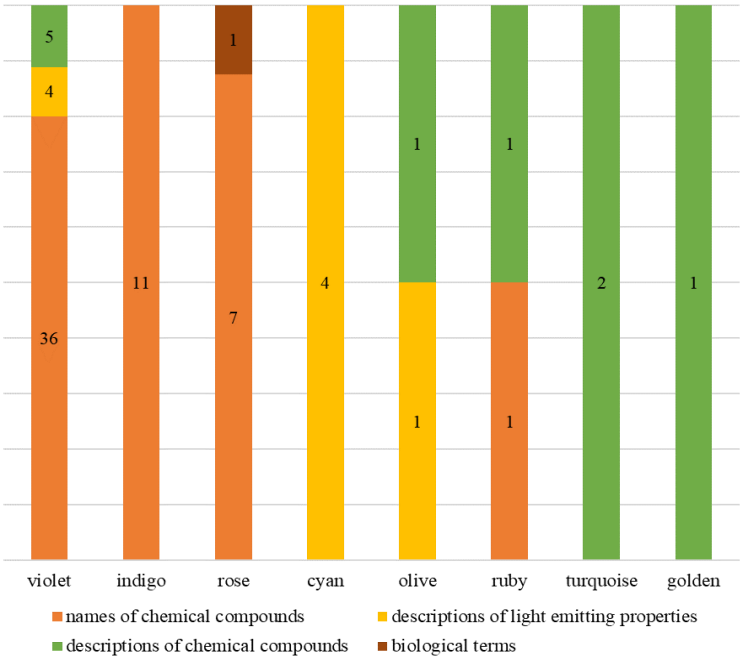

Figure 3. The uses of non-basic colour terms

6. Discussion.

As follows from the data presented in Tables 2 and 3, both basic and non-basic colour terms occur in the abstracts. These words refer to the whole colour spectrum, catering not only for the typical, focal colours, but for their shades as well.

As regards frequency, *blue*, *green* and *red* happen to be much more popular than the other colour terms: they occur 370, 302 and 222 times respectively. It comes as no surprise that the basic terms are considerably more frequent than the non-basic ones. There is, however, one exception: one non-basic term, *violet*, happens to be much more frequent than the basic term referring to the same colour, namely *purple*. *Violet* occurs 45 times, whereas the absolute frequency of *purple* is only 18. Moreover, *violet* is more popular than four other basic terms: *black*, *brown*, *pink* and *grey*/*gray*.

We have identified several types of uses of colour terms in the abstracts. Colour words are frequently part of names of chemical compounds; they may occur in other names as well. Moreover, they are often employed in descriptions which, in turn, may be divided into descriptions of light emitting properties and descriptions of chemical compounds. Table 6 presents a ranking list of the uses of the colour terms. The discussed colour terms are found to occur most frequently in descriptions of light emitting properties and in names of chemical compounds.

Table 6

Types of uses of the colour terms in the abstracts

Rank	Use	Absolute frequency	Percentage
1	description of light emitting properties	461	34.02
2	part of a name of a chemical compound	397	29.30
3	description of a chemical compound	273	20.15
4	meaning ‘ecological’	177	13.06
5	part of a biological term	37	2.73
6	other uses	10	0.74
Total		1355	100.00

Curiously enough, the distribution of the uses is not regular: particular colour terms have their dominating uses. The high frequencies of *blue* and *red* correlate with their occurrence in names of chemical compounds and in descriptions of light emitting properties, whereas the popularity of *green* – meaning mainly 'ecological' – stems from the growing interest in ecological issues; however, it should be added that this word is also employed in descriptions of light emitting properties. Returning to *violet*, it is mainly used in names of chemical compounds, which accounts for its relatively high frequency in comparison with the frequency of *purple*, employed most often in descriptions of chemical compounds. Tables 7 and 8 present the dominating uses of basic and non-basic colour terms respectively.

Table 7

Dominating uses of the basic colour terms occurring at least 15 times in the corpus

Colour term	Absolute frequency	Dominating use(s)
blue	370	part of a name of a chemical compound, description of light emitting properties
green	302	meaning 'ecological'
red	222	description of light emitting properties
orange	130	part of a name of a chemical compound
yellow	119	description of a chemical compound
white	49	description of light emitting properties
black	32	part of a name of a chemical compound, description of a chemical compound
brown	21	description of a chemical compound
purple	18	description of a chemical compound
pink	15	description of a chemical compound, description of light emitting properties

Table 8

Dominating uses of the non-basic colour terms occurring at least 4 times in the corpus

Colour term	Absolute frequency	Dominating use(s)
violet	45	part of a name of a chemical compound
indigo	11	part of a name of a chemical compound
rose	8	part of a name of a chemical compound
cyan	4	description of light emitting properties

7. Conclusions.

The compiled corpus containing abstracts of papers in inorganic chemistry and the corpus tools provided by AntConc allow us not only to examine the frequency of colour terms used in this discipline, but also to identify the types of uses of these words. It appears that colour words are used most frequently in descriptions of light emitting properties and in names of chemical compounds. The third rank is occupied by descriptions of chemical compounds.

The use of non-basic colour terms leads us to the conclusion that the set of basic terms is not sufficient to cater for the need to refer to colours precisely – either in a name of a chemical compound and its description or in a description of light emitting properties.

The only colour term whose dominant meaning is figurative is *green*. The relatively high frequency of this meaning points to the popularity of the topic of ecology in papers on issues in inorganic chemistry.

As regards prospects for further research, we have already mentioned that we plan to analyze the distribution of particular classes of colour words (mainly adjectives and nouns).

Moreover, we intend to concentrate on the use of colour vocabulary in the other branches of chemistry, namely analytical chemistry, organic chemistry and physical chemistry. Besides, it would be interesting to examine colour terms found in chemical texts written in other languages.

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Анотація

Колір – це типове фізичне явище, пов'язане з вибірковим поглинанням, відображенням або трансмісією хвиль світла певної довжини. Це – одна з фундаментальних властивостей хімічних сполук, що є особливо очевидним в галузі неорганічної хімії.

Метою статті є презентація реєстру колоротермінів, які використовують науковці з неорганічної хімії. У фокусі уваги знаходяться як базові, так і небазові колоротерміни у розумінні Berlin and Kay (1969). Матеріалом дослідження слугував корпус, укладений за допомогою програми AntConc. До складу такого корпусу увійшли тези з Inorganic Chimica Acta, Inorganic Chemistry Communications, Journal of Inorganic Biochemistry, а також ще десяти журналів з хімії. Обсяг корпусу складає 1 626 380 слів.

Базовими колоротермінами, які найчастіше зустрічаються у тезах, є blue / синій (370 випадків), green / зелений (302) і red / червоний (222). Серед небазових колоротермінів виділяються violet / фіолетовий (46) and cyan / блакитний (4). У цій статті ми досліджуємо специфіку використання як вищезгаданих, так і інших колороназв, фокусуючись насамперед на їхньому вживанні у складі хімічних сполук, інших термінів та їхніх описів.

Ключові слова: *колоротерміни, англійська мова, корпусне дослідження, неорганічна хімія, термінологія.*