# СОВРЕМЕННЫЕ МЕТОДЫ ПОИСКА ХИМИЧЕСКОЙ ИНФОРМАЦИИ

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**Романенко В.Н., Орлов А.Г., Никитина Г.В. Книга для начинающего исследователя-химика. Л.: Химия, 1987.**

## Основные структурные элементы диссертации:

- **актуальность темы исследования**;
- **степень ее разработанности**;
- цели и задачи;
- **научная новизна**;
- теоретическая и практическая значимость работы;
- методология и методы исследования;
- положения, выносимые на защиту;
- степень достоверности и апробация результатов.

Шахрай С.М., Аристер Н.И., Тедеев А.А. О плагиате в произведениях науки (диссертациях на соискание ученой степени): научно-метод. пособие. – М.: МИИ, 2014. – 176 с.

**Неправомерное заимствование**. Формой **неправомерного заимствования** в научной сфере выступает **плагиат**. Под плагиатом понимается нарушение личных неимущественных прав автора (авторских прав) путем присвоения авторства на произведение науки …, выразившееся в неправомерном, т.е. необоснованном целями цитирования заимствования чужого текста (части текста) без указания (ссылки) на истинного автора и источник заимствования, оформленного в соответствии с установленными правилами цитирования.

Де факто плагиат осуществляется в 2 формах:

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2. Присвоения чужого текста с применением стилистического приема парафазы, т.е. с заменой слов и выражений на синонимы без изменения содержания заимствованного текста.

При использовании в научной работе **компиляции**, с формальной точки зрения, соискатель ученой степени не нарушает установленных правил цитирования, однако при этом **приращения нового научного знания практически не происходит, а проведение поискового научного исследования фактически имитируется.**

# Классические методы работы с литературой Библиотеки

- ГПНТБ – Государственная публичная научно-техническая библиотека (старый адрес: Кузнецкий мост, 12 – новый адрес: 3-я Хорошевская ул., 17; м. Окт. поле, Полежаевская) **//gpntb.ru**
- Российская Государственная Патентная библиотека (Бережковская наб., 24)
- Российская Государственная Библиотека (ул. Воздвиженка, 3/5) **//www.rsl.ru** www.rsl.ru

  Отдел диссертаций РГБ (г. Химки, ул. Библиотечная, 15)
- Библиотека по естественным наукам РАН (ул. Знаменка, 11) **//www.benran.ru**

# Основные пособия по поиску химической информации


Потапов В.М., Кочетова Э.К. Химическая информация. Что, где и как искать химику в литературе. М.: Химия, 1979, 304 с.

Потапов В.М., Кочетова Э.К. Химическая информация. Где и как искать химику нужные сведения. 2 изд. М.: Химия, 1988, 224 с.

Потапов В.М., Розенман М.И., Кочетова Э.К., Покровский Б.И. Поиск химической информации. М.: МГУ, 1990, 174 с.

Гефтер Е.Л., Меквабишвили Т.В. Методы работы с химической литературой. М.: НИИТЭХИМ, 1996, 234 с.

Information sources in chemistry. /ed. R.T.Bottle, J.F.B. Rowland. 4ed., 1983

Maizell R.E. How to find chemical information. 1987

Wiggins G. Chemical information sources. McGraw Hill, 1991

Wolman Y. Chemical information. A practical guide to utilization. 2 ed., 1988

The Internet. A guide for chemists. /ed. S.M. Bachrach. Am. Chem. Soc., 1996.

World databases in Chemistry. /ed. C.J. Armstrong.

# Систематический каталог

**УДК** – Универсальная Десятичная Классификация

Химия, химическая промышленность и смежные области науки и техники. М.: НИИТЭХИМ, 1968

## АВТОРЕФЕРАТЫ ДИССЕРТАЦИЙ

5 – математика, естественные науки

54 – химия, кристаллография, минералогия

541 – теоретическая химия; 542 – экспериментальная химия; 543 – аналитическая химия

546 – неорганическая химия; 547 – органическая химия

547.1 – общие вопросы органической химии

” + ” объединение нескольких разделов; ” : ” сочетание подчиненных разделов

536.421 – превращение твердых тел в жидкость и наоборот

536.421.1 – превращение твердое – жидкость. Плавление. Точка плавления

536.652 – измерение тепла. Теплота плавления

**536.63** – теплоемкость

536.631 – теплоемкость твердых тел; 536.632 – теплоемкость жидкостей

536.722 – энтальпия; 536.75 – энтропия

541.123 – равновесие гетерогенных систем; 541.123.2 – равновесие гетерогенных систем. Бинарные системы

532.785 – кристаллизация из раствора

**532.783** – жидкие кристаллы

**536.63:532.783** – теплоемкость жидких кристаллов

1856(1830) – 1970 реферативный журнал “Chemisches Zetralblatt”
РЖ “**Chemical Abstracts**” (CA) (1907-)
“**Химия**” (РЖХим) (1953-)
ВИНИТИ – Всероссийский институт научной и технической информации

Chemical Abstracts Service

Закон рассеяния Брэдфорда: Основной поток информации концентрируется в сравнительно небольшом числе журналов. В 1970 г. для Chemical Abstracts было использовано 12000 источников. 15 журналов дают 20 % всех публикаций по химии, 50 журналов – 25 %, 500 – 62 %, 2000 – 75 %, 3000 – 90%.

# РЖ Химия

- **Авторский указатель** (ф.и.о. /рус., лат./)
- **Предметный указатель**

**неодим определение**

аскорбиновая кислота; присутствие; вольтамперометрия 19Г184

свинец определение; смеси, неодим, самарий 20Г145

**неодим перхлораты**

самарий перхлораты; вода, молекулы, координация 20Б3159

…

**Обзоры** алмазы; библ. 128 20Б2177

анионы, в газовой фазе, устойчивость; библ. 305 14Б415

…

**жидкие кристаллы**

дисплеи, конструкция, х-ки 5Д9П

компонеты; бензол, пр-ные, получение, применение 4Н106П, 8Н77П

бензойная к-та, производные, получение 8Н78П

19Г184 : 19 – номер РЖ, Г – серия РЖ, 184 – номер реферата

П – патент, К – книга

- **Формульный указатель**
- **Патентный указатель**

# Журналы с одинаковым или похожим сокращенным названием

V. Naggiar, Ann. Phys. 18, 5 (1943).

Annalen der Physik (V185) / Annales de Physique (V148) – Коды ГПНТБ

Chemical engineering

Chem. Eng. N.Y., 1902 -

Chem. Eng. (Japan) Tokyo, 1937 -

J. Chem. Phys. Journal of chemical physics

Chem. Phys. Chemical Physics

Z. Phys. Chem. / Z. Phys. Chem. N. F.

Arnold, H. : Z. Phys. Chem. 226, 146 (1964)

Maier, W., Saupe, A. : Z. Phys. Chem. N. F. 6, 327 (1956)

Zeitschrift fuer physikalische Chemie (Leipzig)

Zeitschrift fuer physikalische Chemie. Neu Folge (Frankfurt)

# Справочная литература

Химическая энциклопедия Т.1-5. Под ред. И.Л. Кнуньянца (т.1-3), Н.С. Зефирова (т.4-5). М.: Советская энциклопедия / Большая Российская энциклопедия, 1988-1998

- **Gmelins** Handbuch der anorganischen Chemie.
- **Beilsteins** Handbuch der organische Chemie.
- **Landolt-Boernstein**. Zahlenwerte und Funktionen aus Naturwissen – Physik, Chemie, Astronomie, Geophysik und Technik. Berlin: Springer

  6 Aufl. -1950-1957, Neue Serie. Springer, 1965-…

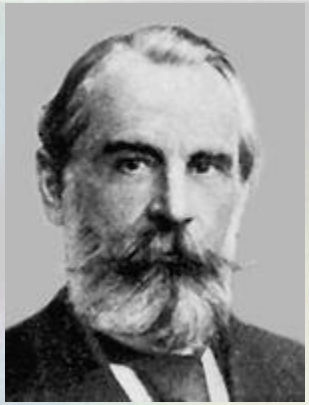
- Kirk-Othmer Encyclopedia of Chemical Technology
- Ulmann‘s Encyclopedia of Industrial Chemistry

# Gmelin Handbuch der theoretischen Chemie (1817 - )

1 – VIIIA; 2 – водород; 3 – кислород; 4 – азот; 5-8 – галогены
9-12 – халькогены; 13 – бор; 14 – углерод; 15 – кремний; 16–19 – VA (без азота)
20–25 – IA, аммоний; 26-31 – IIA; 32-34 – IIБ; 35-38 – IIIA (без бора)
39-40 – Ln, Ac; 41-43 – IVБ; 45-47 – германий, олово, свинец
48-51 – VБ; 52-54 – VIБ; 56 – марганец; 57-59 – никель, кобальт, железо
60-62 – IБ; 63-65 – рутений, родий, палладий
66-68 – осмий, иридий, платина
Отдельно описаны соединения $NH_4^+$.

Описание соединения в томе элемента с наибольшим номером.

**Бейльштейн Федор Федорович**
(5.02.1838 — 5.10.1906)



**Справочник Бейльштейна**

(«Handbuch der organischen Chemie», на немецком языке, Bd. 1-2, 1881)

Формульный поиск

**H** - основная серия; **E** - дополнительные серии

Франкфурт-на-Майне, 1951 год –

специальный Институт Бейльштейна

по литературе органической химии.

# Beilstein – Gmelin: разграничения. Где проходит граница между органической и неорганической химией?

**Gmelin**: Неорганические и металлоорганические соединения.

**Beilstein**: Органические вещества и соединения металлов с органической частью молекулы.

“Beilstein elements”: H

Li, Na, K, Rb, Cs (IA), Mg, Ca, Sr, Ba (IIA)

Неметаллы:

C, Si, N, P, As, O, S, Se, Te, F, Cl, Br, I

Соединения остальных элементов с органической сферой рассматриваются как “Gmelin elements”.

Fr, Be, Ra, Sc, Y, IIIA, Ge, Sn, Pb, Sb, Bi, Po, At, VIIIA, d, f - элементы (Б-группы).

Примеры:

Гмелин: $Cl_2$, $NH_3$, $SO_2$, $KNO_2$, ферроцен, $Na_2C_2$, $COCl_2$, $CH_3COONa$, $Na[BF_4]$, стали.

Бейльштейн: бифенил, $Na(C_5H_5)$, $NaHC_2$, $NH_2$-$COONa$, Cl-$CH_2$-$COONa$, соли Гриньяра

# *Landolt-Börnstein*


- **Landolt-Börnstein (LB)** is a systematic collection of numerical data and functional relationships in physics, physical chemistry, biophysics, geophysics, astronomy, materials science, and technology. It is a valuable but often overlooked source of reliable physical data. Its full German title is *Zahlenwerte und Funktionen aus Physik, Chemie, Astronomie, Geophysik und Technik*. The 6th Edition was published from 1950 to 1980, and contains 22,500 pages in 28 volumes. It contains fundamental, well-tested information that is less likely to require revision. In 1961 the extensive New Series began publication, which updates and expands the base set with a focus on solid state materials and semiconductors. Over 400 Volumes have been published so far.

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- **Ternary Alloy Systems. Crystallographic and Thermodynamic Data, Phase Diagrams - IV/11A-D**

Серверы издательств, выпускающих журналы по химии и наукам, связанным с химией

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//**onlinelibrary.wiley.com** Wiley

//**www.tandf.co.uk** Taylor&Francis Gordon&Breach

//**pubs.acs.org** American Chemical Society

//**pubs.rsc.org** Royal Chemical Society

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Поисково-аналитические возможности индекса научного цитирования **Scopus – www.scopus.com**

Галина П. Якшонок, консультант по аналитическим решениям Elsevier. МИТХТ, Москва, март 2015

## ЖУРНАЛЫ

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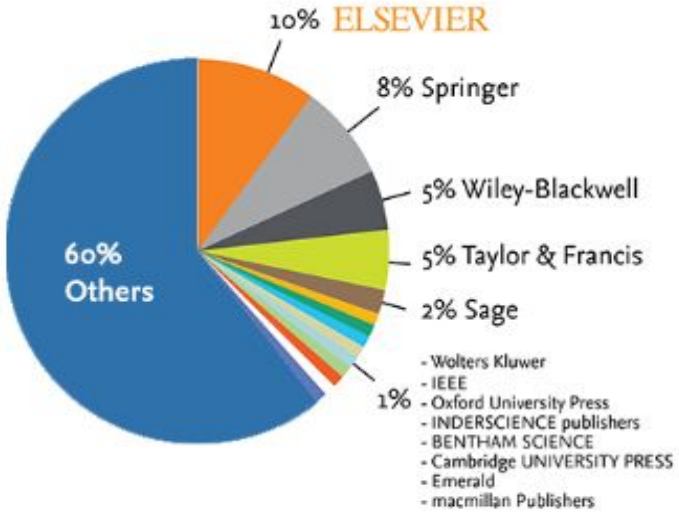


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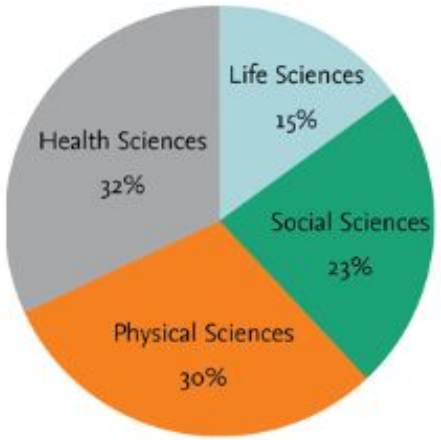


- Life Sciences (agriculture, biology, neuroscience, pharmacology)
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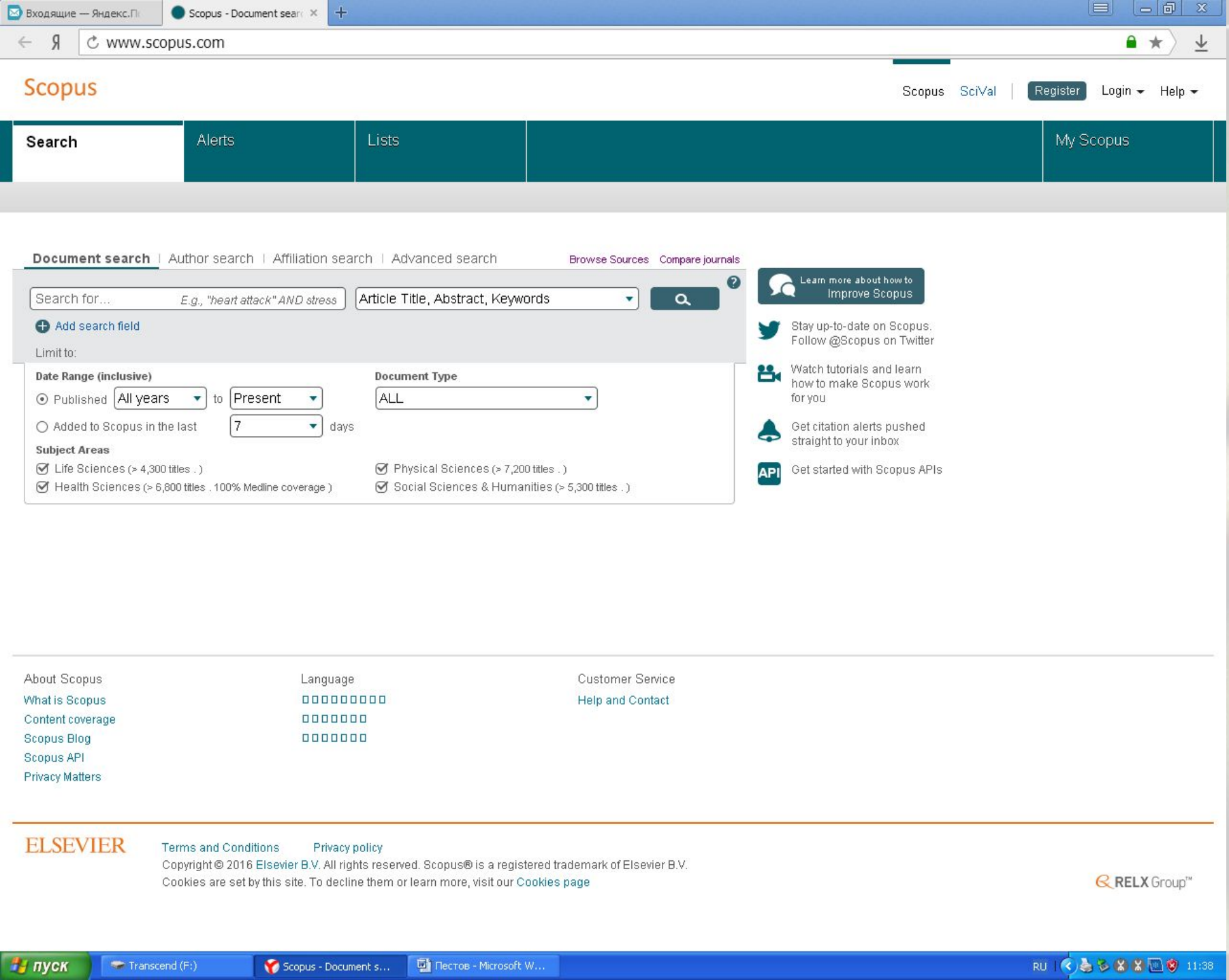
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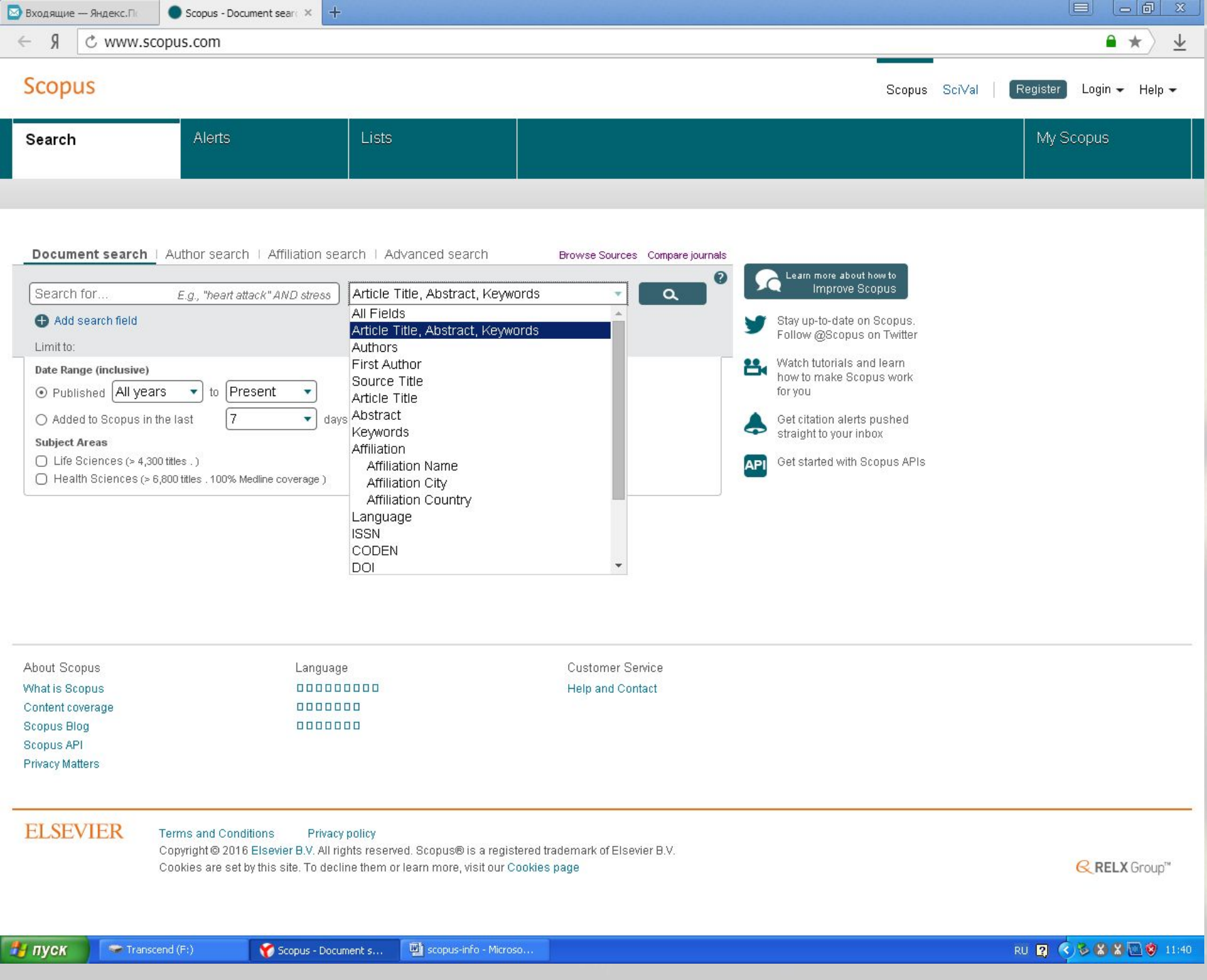
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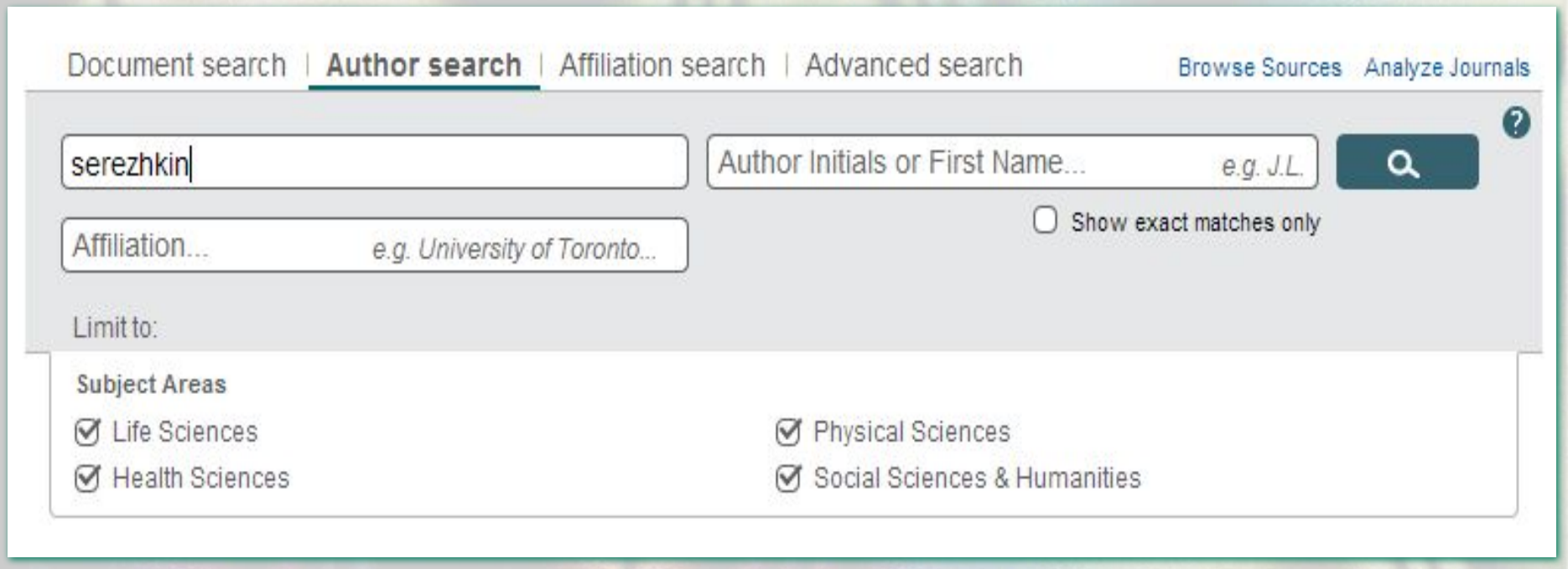


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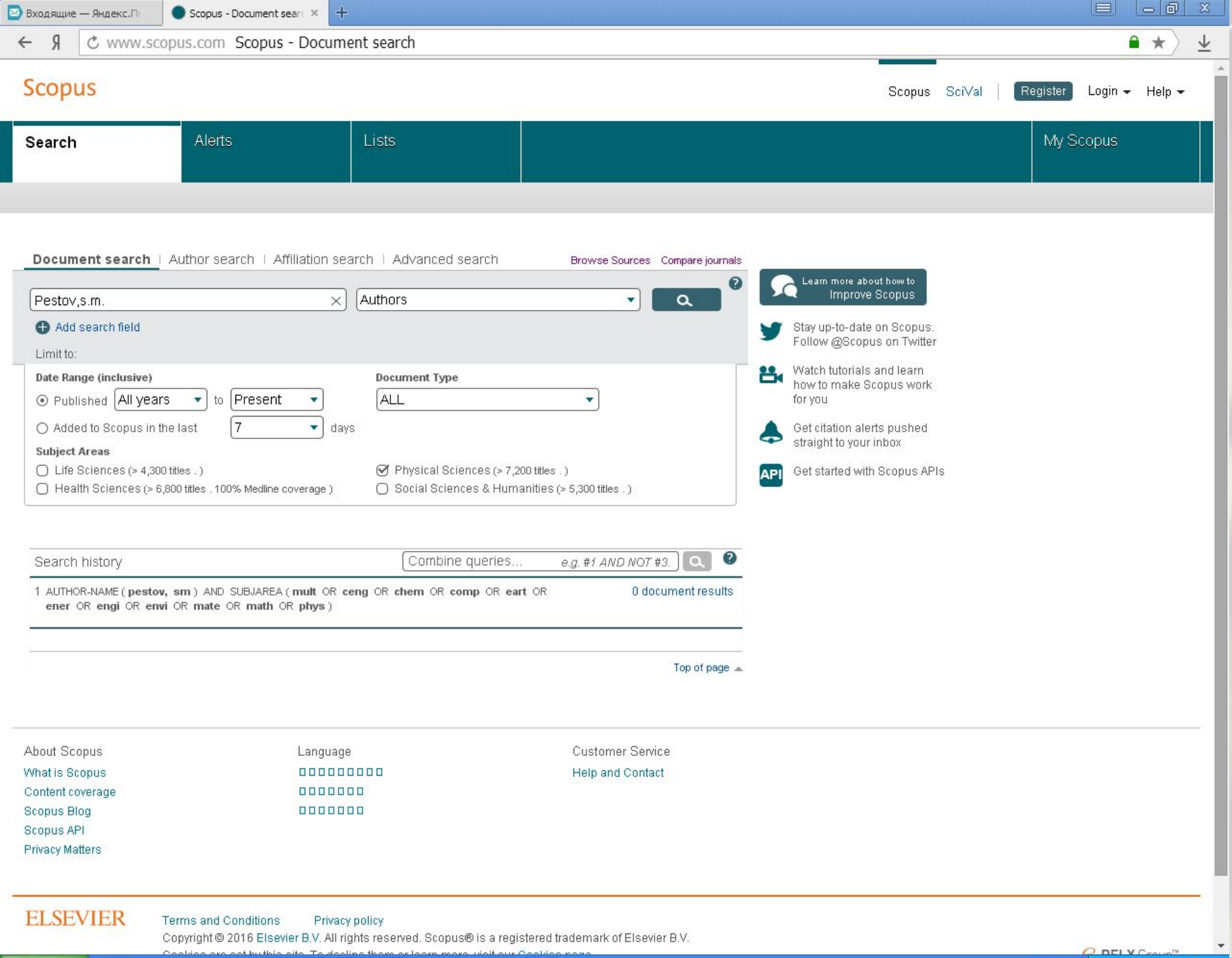
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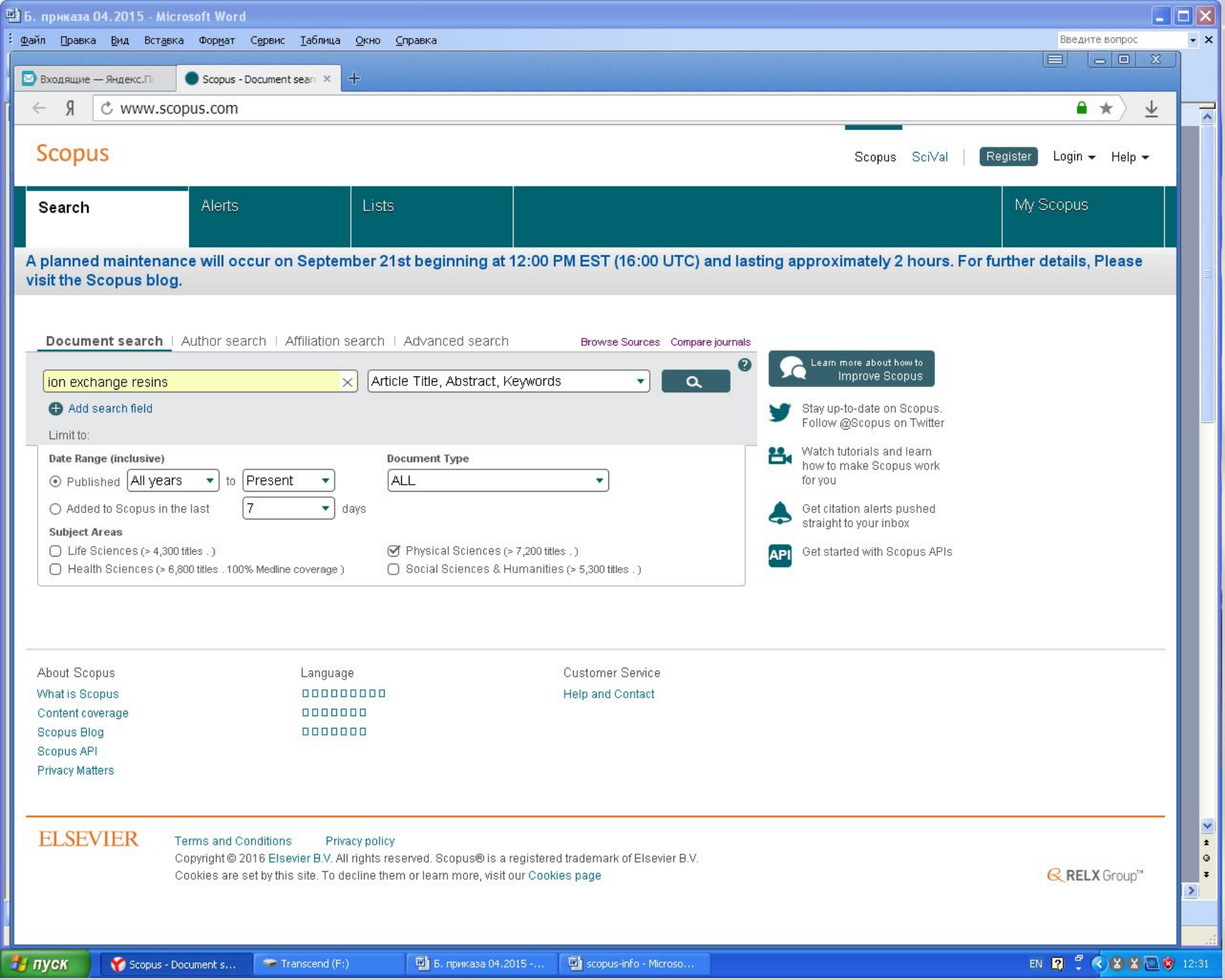
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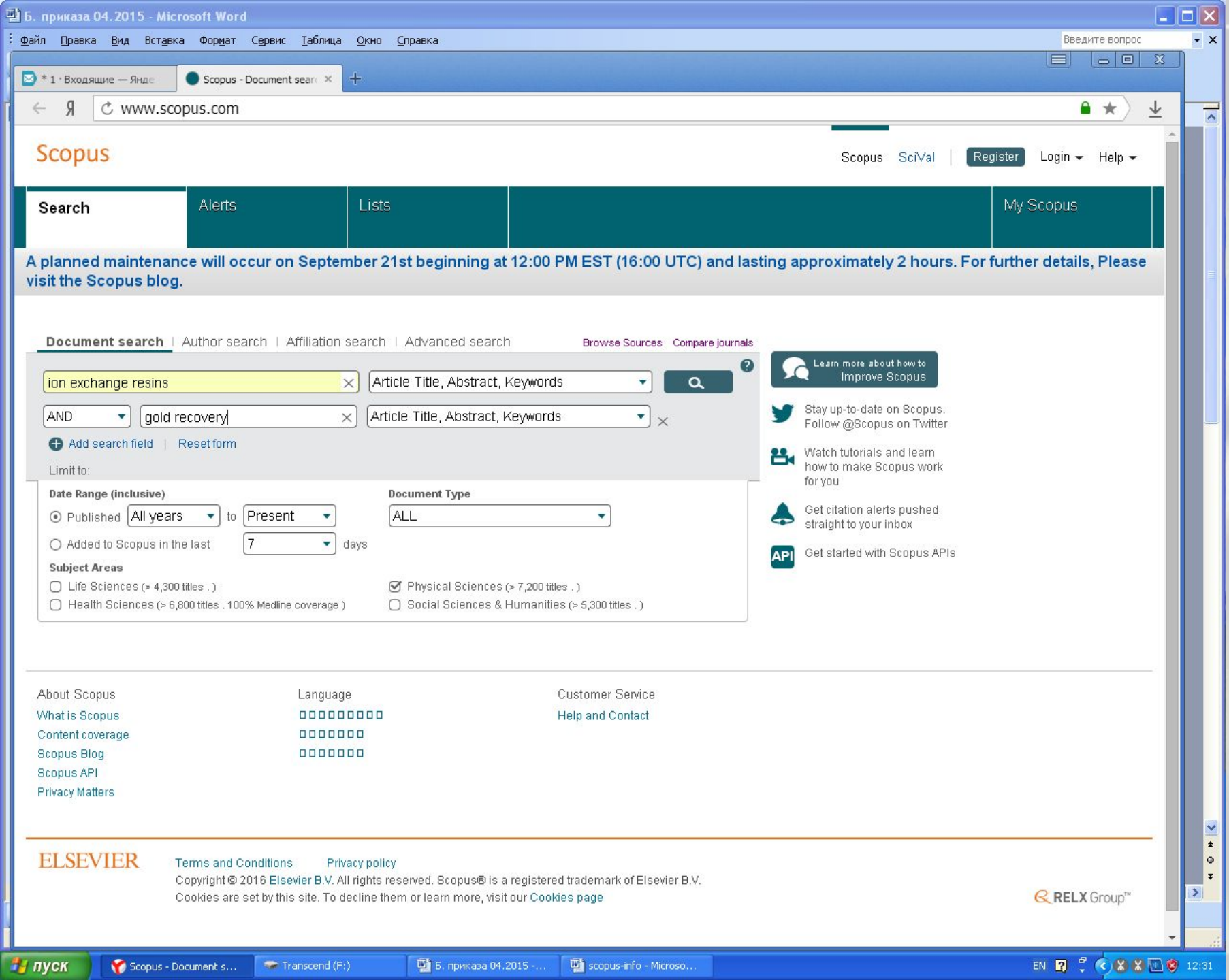
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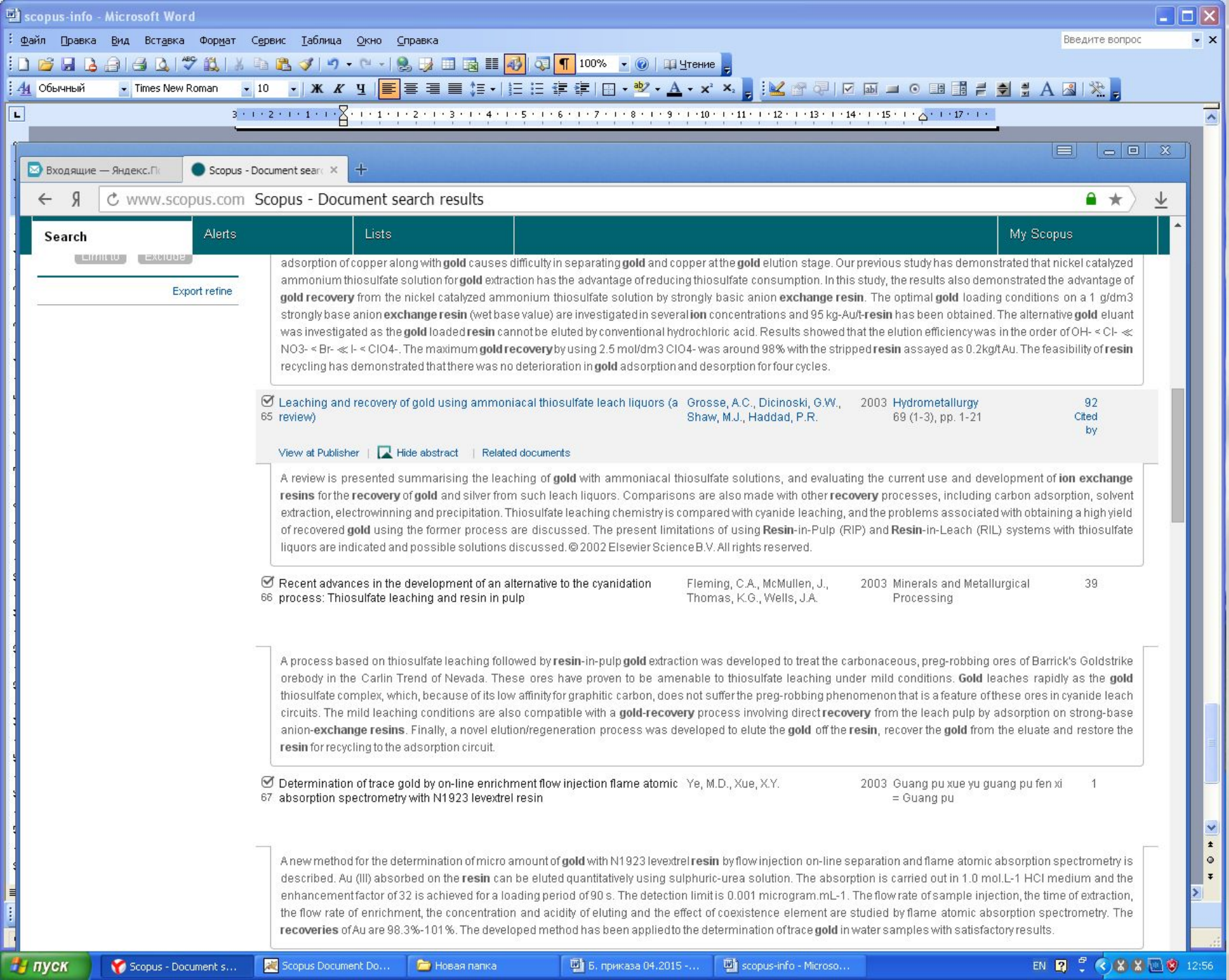
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adsorption of copper along with gold causes difficulty in separating gold and copper at the gold elution stage. Our previous study has demonstrated that nickel catalyzed ammonium thiosulfate solution for gold extraction has the advantage of reducing thiosulfate consumption. In this study, the results also demonstrated the advantage of gold recovery from the nickel catalyzed ammonium thiosulfate solution by strongly basic anion exchange resin. The optimal gold loading conditions on a 1 g/dm3 strongly base anion exchange resin (wet base value) are investigated in several ion concentrations and 95 kg-Au/t-resin has been obtained. The alternative gold eluant was investigated as the gold loaded resin cannot be eluted by conventional hydrochloric acid. Results showed that the elution efficiency was in the order of OH- < Cl- ≪ NO3- < Br- ≪ I- < ClO4-. The maximum gold recovery by using 2.5 mol/dm3 ClO4- was around 98% with the stripped resin assayed as 0.2kg/t Au. The feasibility of resin recycling has demonstrated that there was no deterioration in gold adsorption and desorption for four cycles.
65 Leaching and recovery of gold using ammoniacal thiosulfate leach liquors (a review)
Grosse, A.C., Dicinoski, G.W., Shaw, M.J., Haddad, P.R.
2003 Hydrometallurgy 69 (1-3), pp. 1-21
92 Cited by
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A review is presented summarising the leaching of gold with ammoniacal thiosulfate solutions, and evaluating the current use and development of ion exchange resins for the recovery of gold and silver from such leach liquors. Comparisons are also made with other recovery processes, including carbon adsorption, solvent extraction, electrowinning and precipitation. Thiosulfate leaching chemistry is compared with cyanide leaching, and the problems associated with obtaining a high yield of recovered gold using the former process are discussed. The present limitations of using Resin-in-Pulp (RIP) and Resin-in-Leach (RIL) systems with thiosulfate liquors are indicated and possible solutions discussed. © 2002 Elsevier Science B.V. All rights reserved.
66 Recent advances in the development of an alternative to the cyanidation process: Thiosulfate leaching and resin in pulp
Fleming, C.A., McMullen, J., Thomas, K.G., Wells, J.A.
2003 Minerals and Metallurgical Processing
39
A process based on thiosulfate leaching followed by resin-in-pulp gold extraction was developed to treat the carbonaceous, preg-robbing ores of Barrick's Goldstrike orebody in the Carlin Trend of Nevada. These ores have proven to be amenable to thiosulfate leaching under mild conditions. Gold leaches rapidly as the gold thiosulfate complex, which, because of its low affinity for graphitic carbon, does not suffer the preg-robbing phenomenon that is a feature of these ores in cyanide leach circuits. The mild leaching conditions are also compatible with a gold-recovery process involving direct recovery from the leach pulp by adsorption on strong-base anion-exchange resins. Finally, a novel elution/regeneration process was developed to elute the gold off the resin, recover the gold from the eluate and restore the resin for recycling to the adsorption circuit.
67 Determination of trace gold by on-line enrichment flow injection flame atomic absorption spectrometry with N1923 levextrel resin
Ye, M.D., Xue, X.Y.
2003 Guang pu xue yu guang pu fen xi = Guang pu
1
A new method for the determination of micro amount of gold with N1923 levextrel resin by flow injection on-line separation and flame atomic absorption spectrometry is described. Au (III) absorbed on the resin can be eluted quantitatively using sulphuric-urea solution. The absorption is carried out in 1.0 mol.L-1 HCl medium and the enhancement factor of 32 is achieved for a loading period of 90 s. The detection limit is 0.001 microgram.mL-1. The flow rate of sample injection, the time of extraction, the flow rate of enrichment, the concentration and acidity of eluting and the effect of coexistence element are studied by flame atomic absorption spectrometry. The recoveries of Au are 98.3%-101%. The developed method has been applied to the determination of trace gold in water samples with satisfactory results.
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Mineral Processing and Extractive Metallurgy Review

Volume 37, Issue 2, 3 March 2016, Pages 73-119

# Heap leaching technology - Current State, innovations, and future directions: A review (Article)

Ghorbani, Y.[ab], Franzidis, J.-P.[c], Petersen, J.[c]

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[b] CICITEM, Centro de Investigación Científico Tecnológico para la Minería, Antofagasta, Chile

[c] Minerals to Metals Signature Theme, Department of Chemical Engineering, University of Cape Town, Private Bag X6, Rondebosch, South Africa

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## Abstract

Heap leaching is a well-established extractive metallurgical technology enabling the economical processing of various kinds of low-grade ores, which could not otherwise be exploited. However, despite much progress since it was first applied in recent times, the process remains limited by low recoveries and long extraction times. It is becoming increasingly clear that the choice of heap leaching as a suitable technology to process a particular mineral resource, which is both environmentally sound and economically viable, very much depends on having a comprehensive understanding of the underlying fundamental mechanisms of the processes and how they interact with the particular mineralogy of the ore body under consideration. This paper provides an introduction to the theoretical background of various heap leach processes, offers a scientific and patent literature overview on technology developments in commercial heap leaching operations around the world, identifies factors that drive the selection of heap leaching as a processing technology, describes challenges to exploiting these innovations, and concludes with a discussion on the future of heap leaching. © 2016 Taylor & Francis.

## Author keywords

Agglomeration; copper; gold; heap leaching; hydrometallurgy; mineralogy

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**DOI:** 10.1080/08827508.2015.1115990 **Document Type:** Article

**Publisher:** Taylor and Francis Inc.

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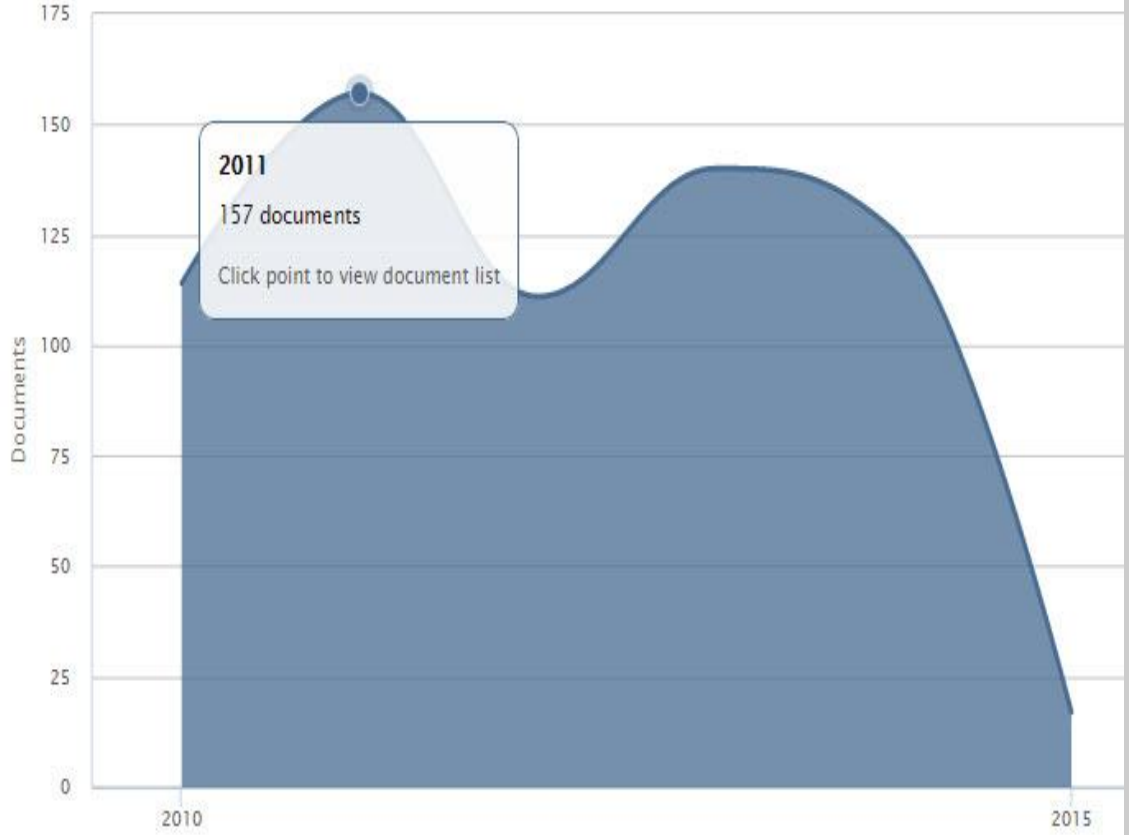

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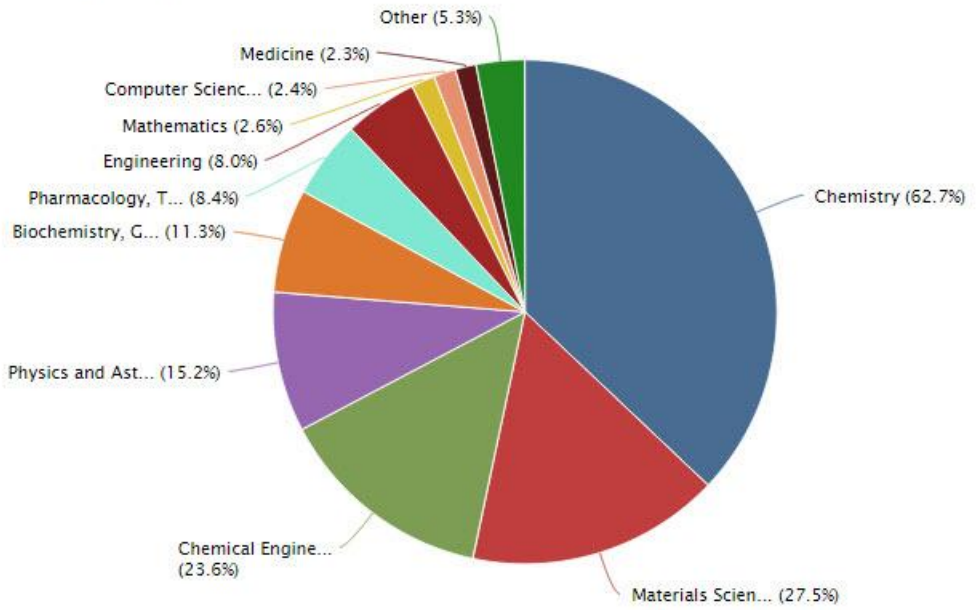

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