



REUTERS/Fayaz Kabli

WEB OF KNOWLEDGE: ВАШ ПУТЕВОДИТЕЛЬ ПО МИРУ ИССЛЕДОВАНИЙ

Малгожата Красовска, Менеджер по развитию бизнеса
Кшиштоф Шимански, Региональный менедже
Киев, Украина, 05/2011



WOK: Преимущества и использование данных

- Содержание ISI Web of Knowledge
- Содержание Индекса Цитирования **Web of Science**: история создания базы данных
- Выбор журналов в **Web of Science**
- Преимущества Web of Science, алгоритмы и усовершенствования поиска
- Как использовать информацию для оценки эффективности и качества научных исследований
- **Journal Citation Reports** and ИМПАКТ ФАКТОР



ISI WEB OF KNOWLEDGE И ISI WEB OF SCIENCE



ISI Web of Knowledge

- 20 миллионов индивидуальных пользователей
- 150,000 пользователей каждый день
- > 3,800 институций
- 23,341 журналов (05.2011)
- > 90 миллионов записей

ISI Web of Knowledge: основная платформа для научных исследований
Платформа включает в себя:

- **Web of Science** (с трудами конференций)
- **Journal Citation Reports**
- а также базы данных: ДИИ, БИОСИС, МЕДЛИАН, Zoological Records и другие

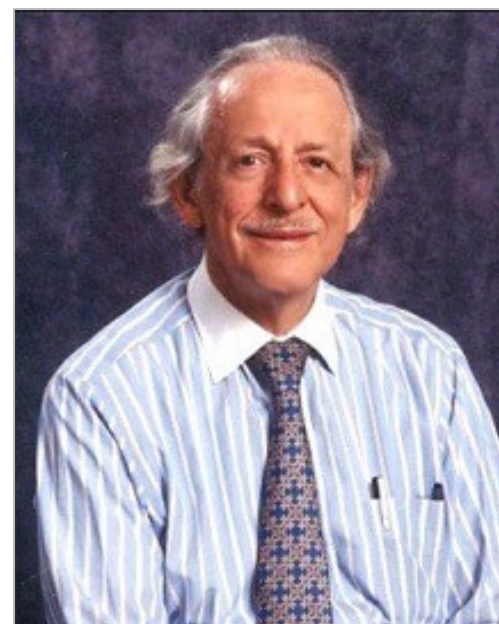
Встроенные ресурсы Web:

- **EndNote Web**
- **ResearcherID**

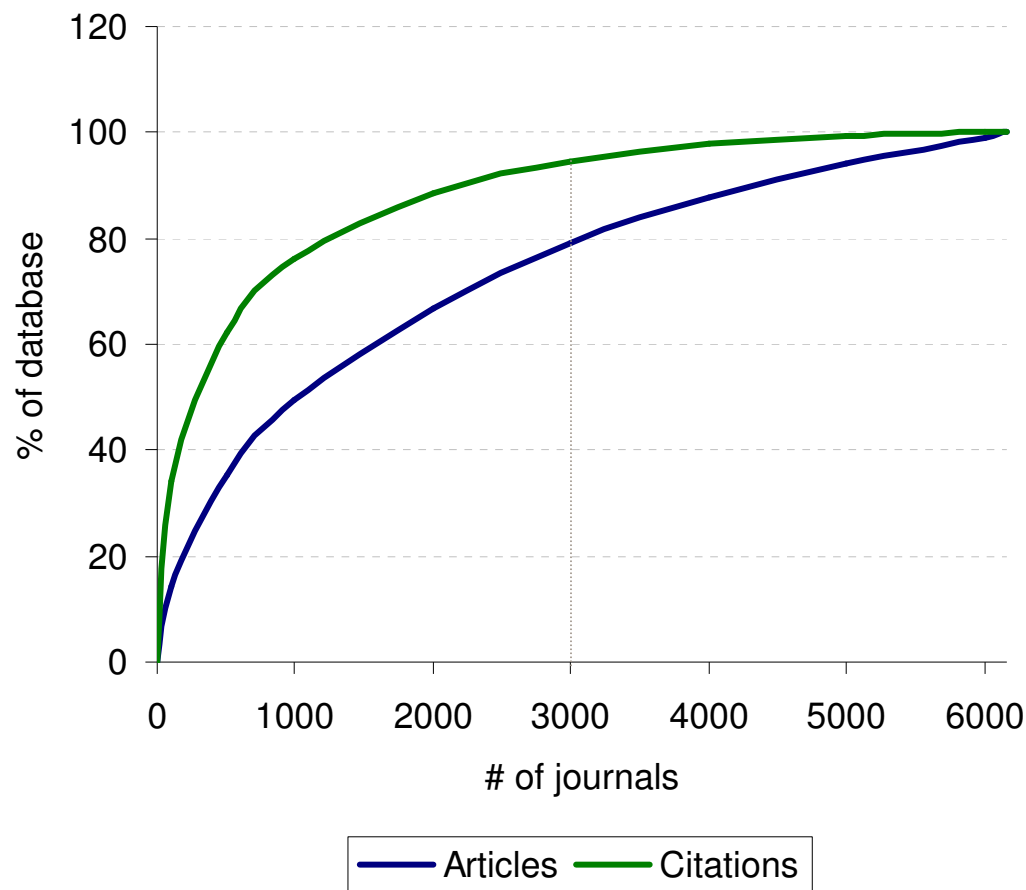


WEB OF SCIENCE: КРАТКАЯ ИСТОРИЯ ИНДЕКСА ЦИТИРОВАНИЯ

- Концепция впервые предложена Ю. Гарфилдом
 - *Science*, 1955
- The *Science Citation Index* (1964)
 - Печатный SCI (1960-е)
 - Поиск в сети - SciSearch в 1970
 - На компакт-дисках 1980х
 - Веб-интерфейс (1997) *Web of Science*
- Расширяющийся контент:
 - Social Sciences Citation Index (SSCI)
 - Arts & Humanities Citation Index (AHCI)
- Индекс цитирования
 - Изначально применялся для получения научной информации
 - В последствии для оценки результатов исследований



Относительно небольшая группа журналов публикует абсолютное большинство значимых научных результатов



Всего 3000 журналов покрывает 80% статей...

...но, что ещё более важно – 92% того, что цитируется

В 7,621 журнале опубликовано 814,967 статей, получивших 20,834,641 ссылок

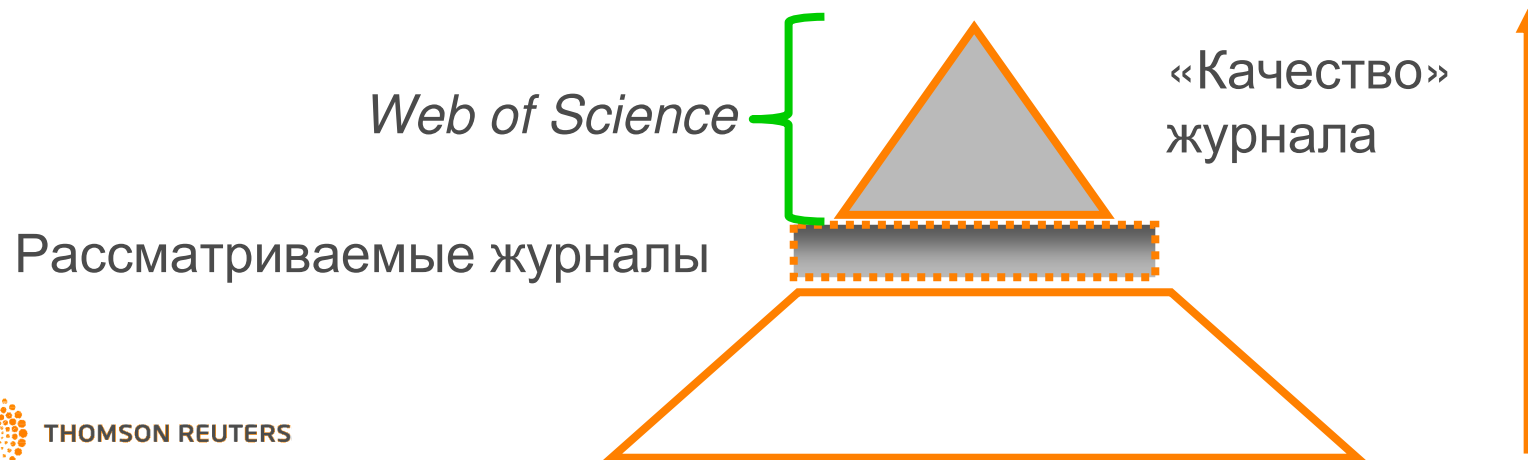
4% журналов (300) публикуют **30% статей** (239,206)

4% журналов (300) получают **51% ссылок** (10,681,596)



ПРОЦЕСС ОТБОРА ЖУРНАЛОВ В *WEB OF SCIENCE*

- Ежегодно рассматривается ~2000 журналов
 - 10-12% включаются в индекс
- Эксперты Thomson Reuters
 - Профессионалы информационных наук
 - Библиотекари
 - Эксперты в конкретной предметной области



Журналы в WEB OF SCIENCE - наиболее влиятельные издания со всего мира

Регион мира	Кол-во журналов из региона в WOS
# Журналов (март '11)	11,955 (SCIE-8275, SSCI-2850, AHCI-1597)
Европа	6388 53% (SCIE-4199, SSCI-1307, AHCI-882)
Северная Америка	4,200+ 35%
Азия-Тихий Океан	940+ 9%
Латинская Америка	272 2%
Ближний Восток/ Африка	200 1%
Языки	Кол-во журналов в Web of Science
Английский	81%
Другие	19%



Для чего нужен Web of Science?

- Тематическое информирование
- Справочно-библиографическое обслуживание
- Поисковый интерфейс для пользователей любого уровня (ученые, аспиранты, студенты)
- Аналитические инструменты - библиометрические исследования
- Times Higher Education Ranking www.timeshighereducation.co.uk
- ARWU ranking www.arwu.org



ISI WEB OF SCIENCE- ГЛОБАЛЬНЫЙ МАСШТАБ СЕГОДНЯ: >4,000 КЛИЕНТОВ В 91 СТРАНЕ

Северная Америка
760 Клиентов

Европа,
Африка и
Средний
Восток
2,647+ Клиентов
в 51 стране

Латинская Америка
244+ Клиентов
в 12 странах

Азия и
Тихоокеанский
регион
353 Клиентов
в 26 странах

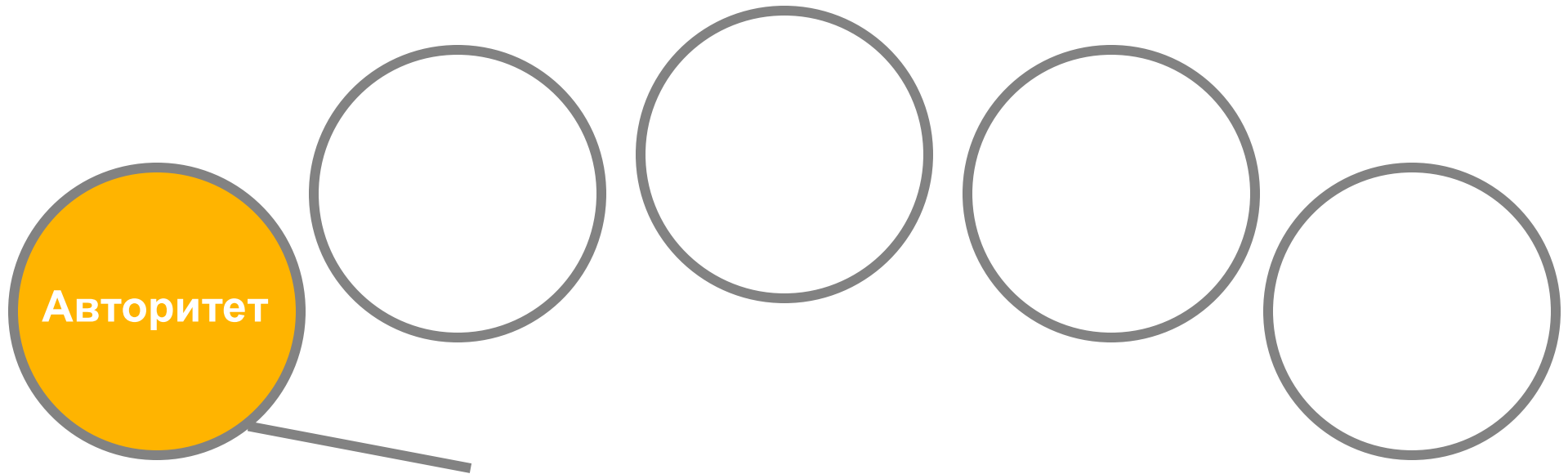
Подробнее о ISI Web of Science:

- 20 миллионов индивидуальных пользователей
-150,000 пользователей ежедневно
- 4000+ институциональных пользователей по всему миру

> 11,900+ журналов > 47+ миллионов записей > 750+ миллионов ссылок



WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА



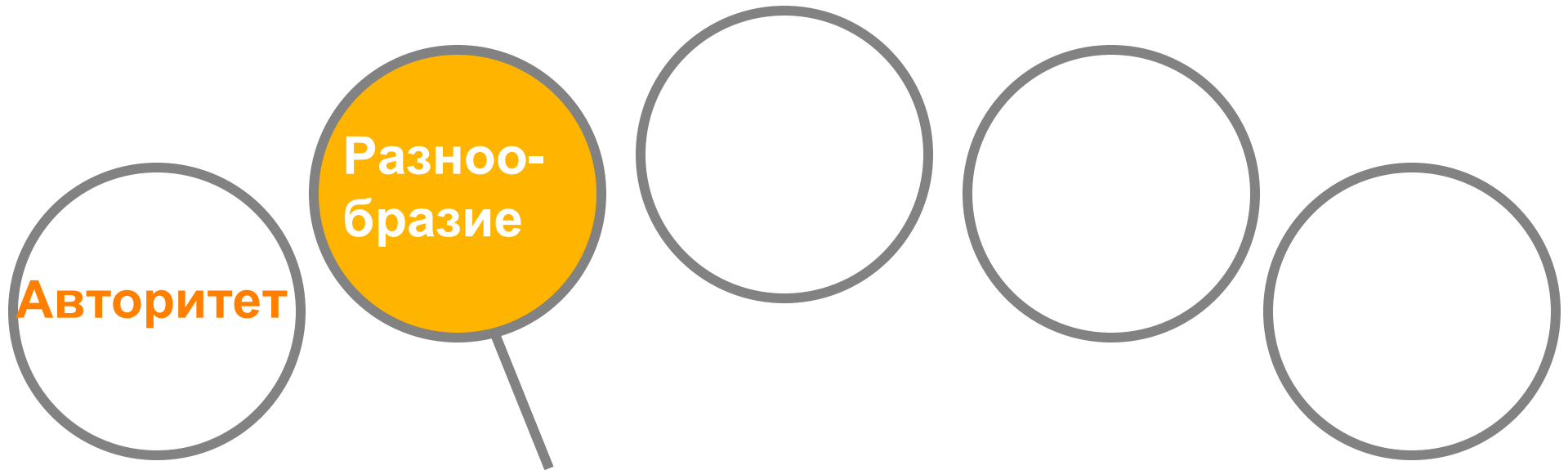
Авторитет

Авторизированный отбор содержания

- специалисты Thomson Reuters оценивают журналы чтобы убедиться, что содержание авторитетно и надежно
- Thomson Reuters проводит независимую оценку журналов всех видов. Оценивание:
 - Журналы коммерческих издательств
 - Журналы академического сообщества
 - Журналы открытого доступа (Open Access)
 - Электронные журналы (е-журналы)



WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА

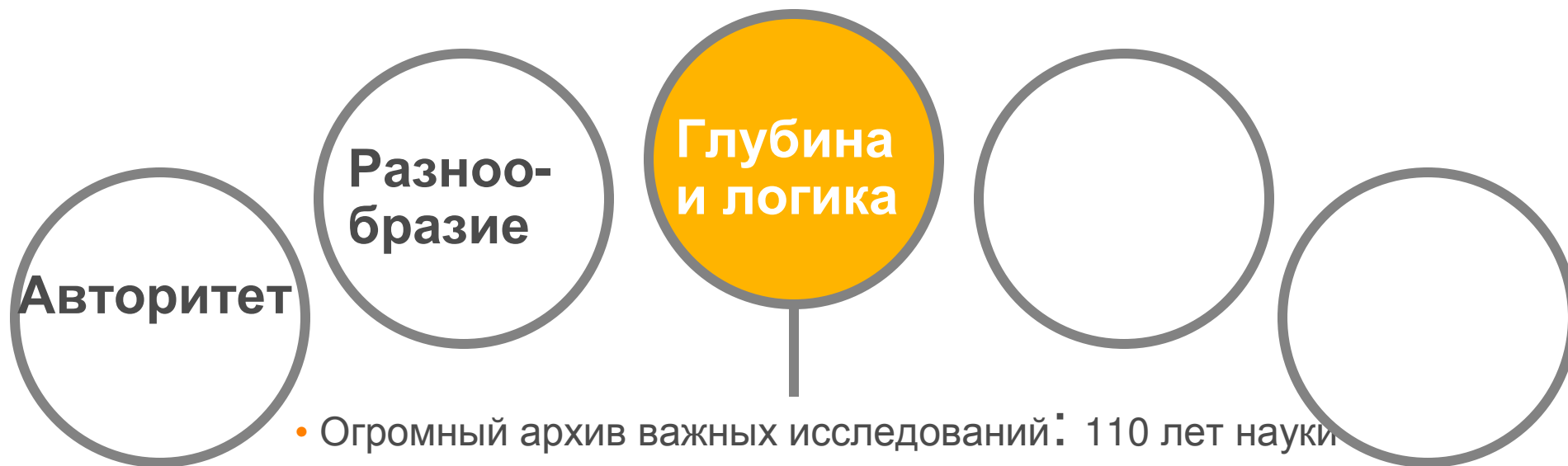


По-настоящему многодисциплинарная база:

- тщательно отобранные журналы по всем научным областям
- **11, 927 журналов в 250** отдельных категориях (04.2011)
- **Более 12 000** конференций ежегодно (120 000 уже в индексе)
- **> 46 миллионов** уникальных записей (самая большая база цитат)

Вы можете получить полное представление о какой-либо конкретной теме исследования

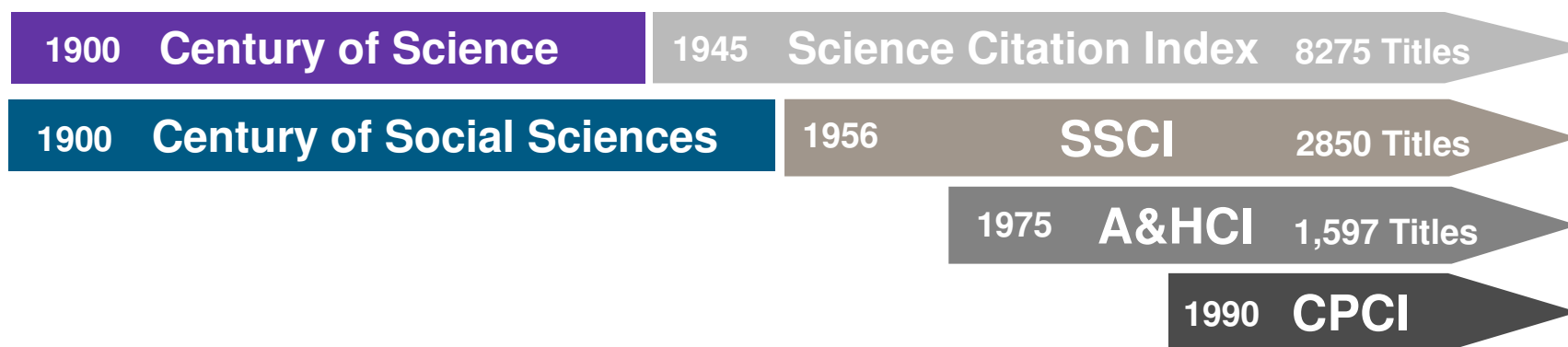
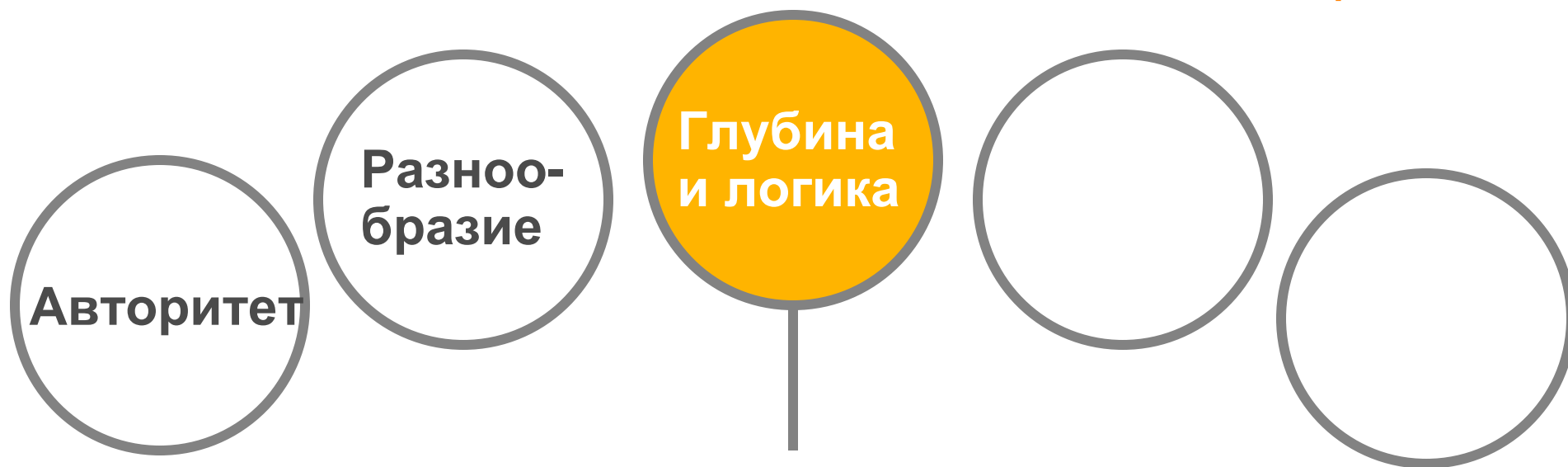
WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА



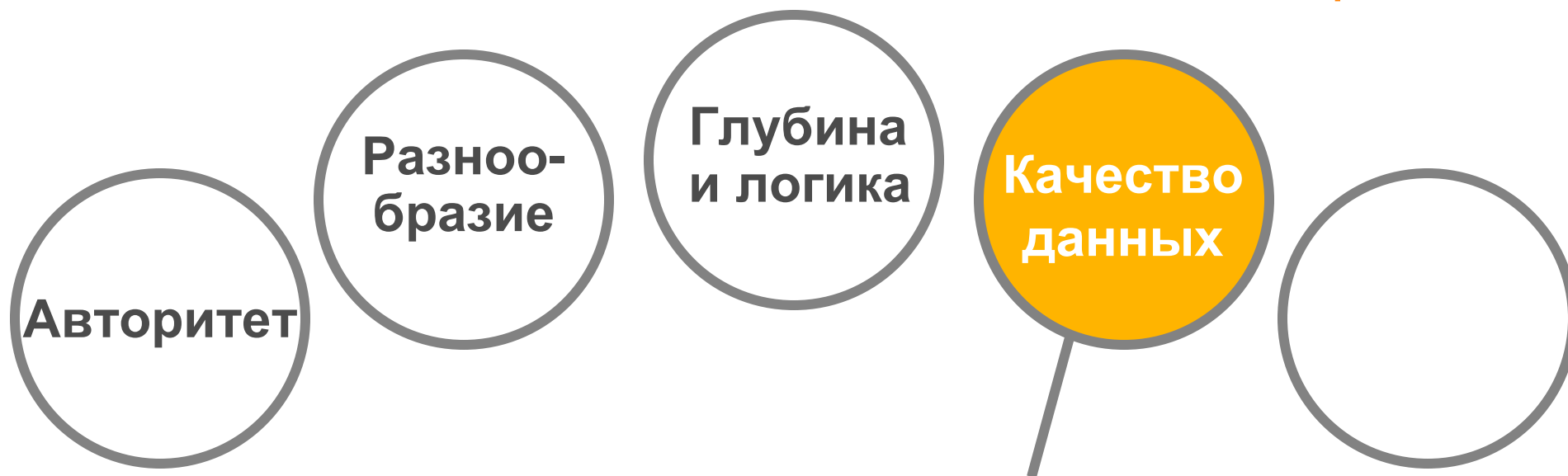
- Огромный архив важных исследований: 110 лет науки
- Все документы были проиндексированы Thomson Reuters
- Данные с высокой точностью и с минимумом недостатков, важные для анализа трендов, точного расчета метрик исследований в оценке данной области
- Все журналы индексированны **от корки до корки**
- Каждый элемент получает уникальную метку (record)
- Поиск доступных материалов



WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА



WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА



- Данные улавливают все официальные ссылки для всех записей
- Все имена авторов, в том числе полное наименование
- Авторы привязаны к адресам (наглядная принадлежность)
- Все адреса охвачены
- Информация о финансировании исследований (Funding Acknowledgements)



WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА

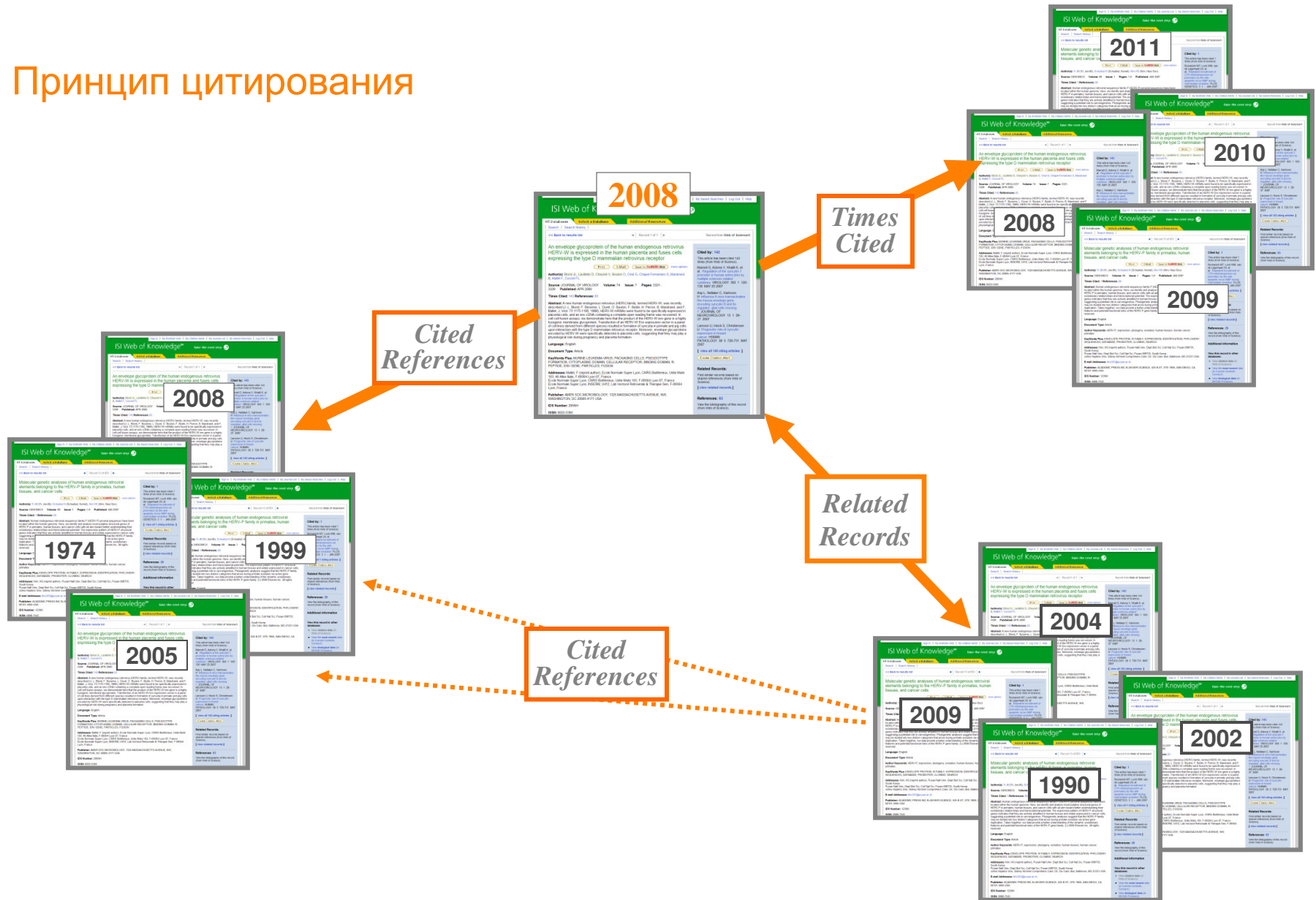


Инструменты удобные в оценке эффективности научных исследований, помогающие при просмотре результатов и создании отчетов

Инструменты [Analyze & Refine tools](#), [Citation Report](#), [Citation Map](#)

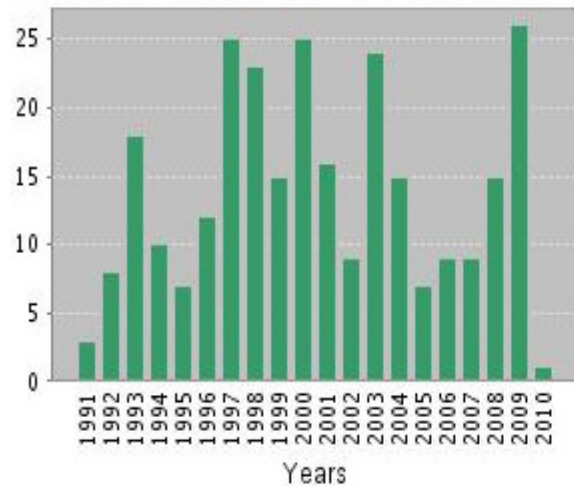
Включенные Ресурсы [EndNote Web](#), [ResearcherID](#)

Принцип цитирования



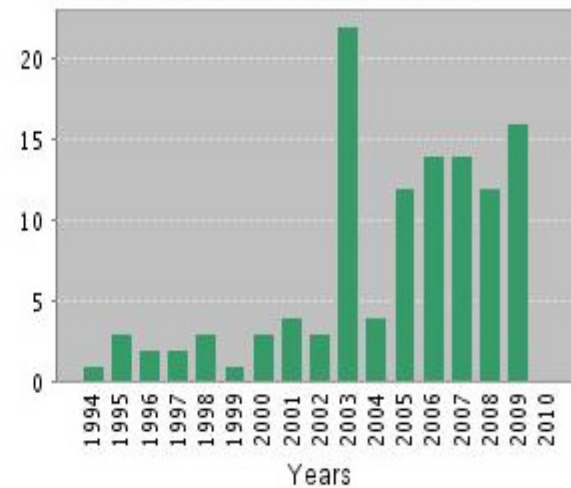
Web of Science – Статистика о цитированиях

Published Items in Each Year



The latest 20 years are displayed.
[View a graph with all years.](#)

Citations in Each Year



Важнейшие показатели:
количество публикаций (290)
объём цитирования (116)
среднее цитирование на статью
(0.4)
индекс Хирша (5)

Results found: 290

Sum of the Times Cited [?]: 116

[View Citing Articles](#)

[View without self-citations](#)

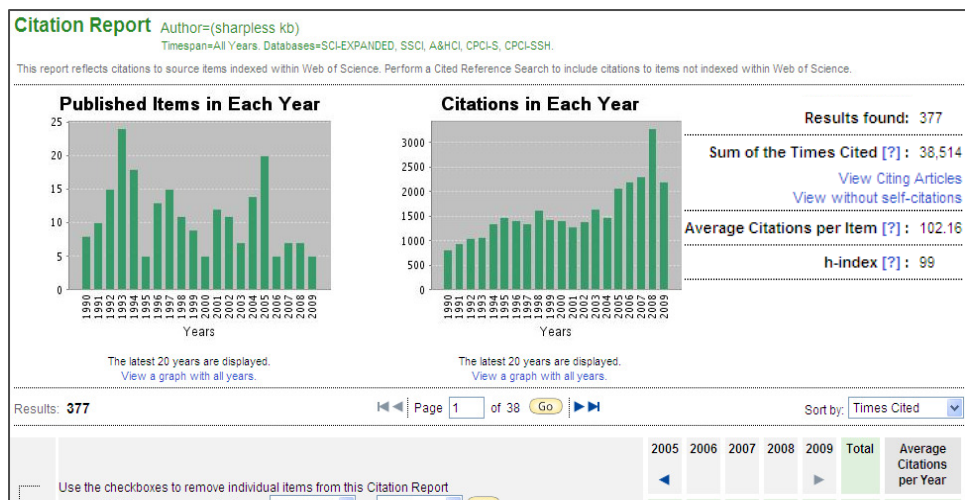
Average Citations per Item [?]: 0.40

h-index [?]: 5



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Web of Science – Инструменты

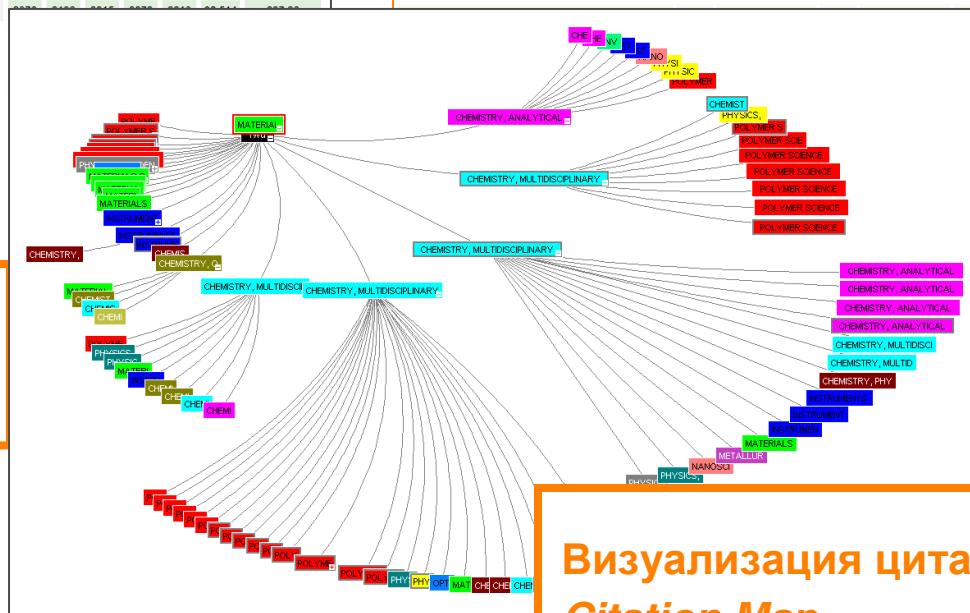


- Use the checkboxes to remove individual items from this Citation Report or restrict to items processed between 1900-1914 and 2009 Go
- Title: CATALYTIC ASYMMETRIC DIHYDROXYLATION
Author(s): KOLB HC, VANNIEUWEIHZE MS, SHARPLESS KB
Source: CHEMICAL REVIEWS Volume: 94 Issue: 8 Pages: 2483-2547 Published: DEC 1994
 - Title: CATALYTIC ASYMMETRIC EPOXIDATION AND KINETIC RESOLUTION - MODIFIED PROCEDURES INCLUDING INSITU DERIVATIZATION
Author(s): GAO Y, HANSON RM, KLUNDER JM, et al
Source: JOURNAL OF THE AMERICAN CHEMICAL SOCIETY Volume: 109 Issue: 19 Pages: 5765-5780 Published: SEP 16 1987
 - Title: THE 1ST PRACTICAL METHOD FOR ASYMMETRIC EPOXIDATION
Author(s): KATSUKI T, SHARPLESS KB
Source: JOURNAL OF THE AMERICAN CHEMICAL SOCIETY Volume: 102 Issue: 18 Pages: 5974-5976 Published: 1980

Citation Reports быстро оценивает исследования и тренды результатов

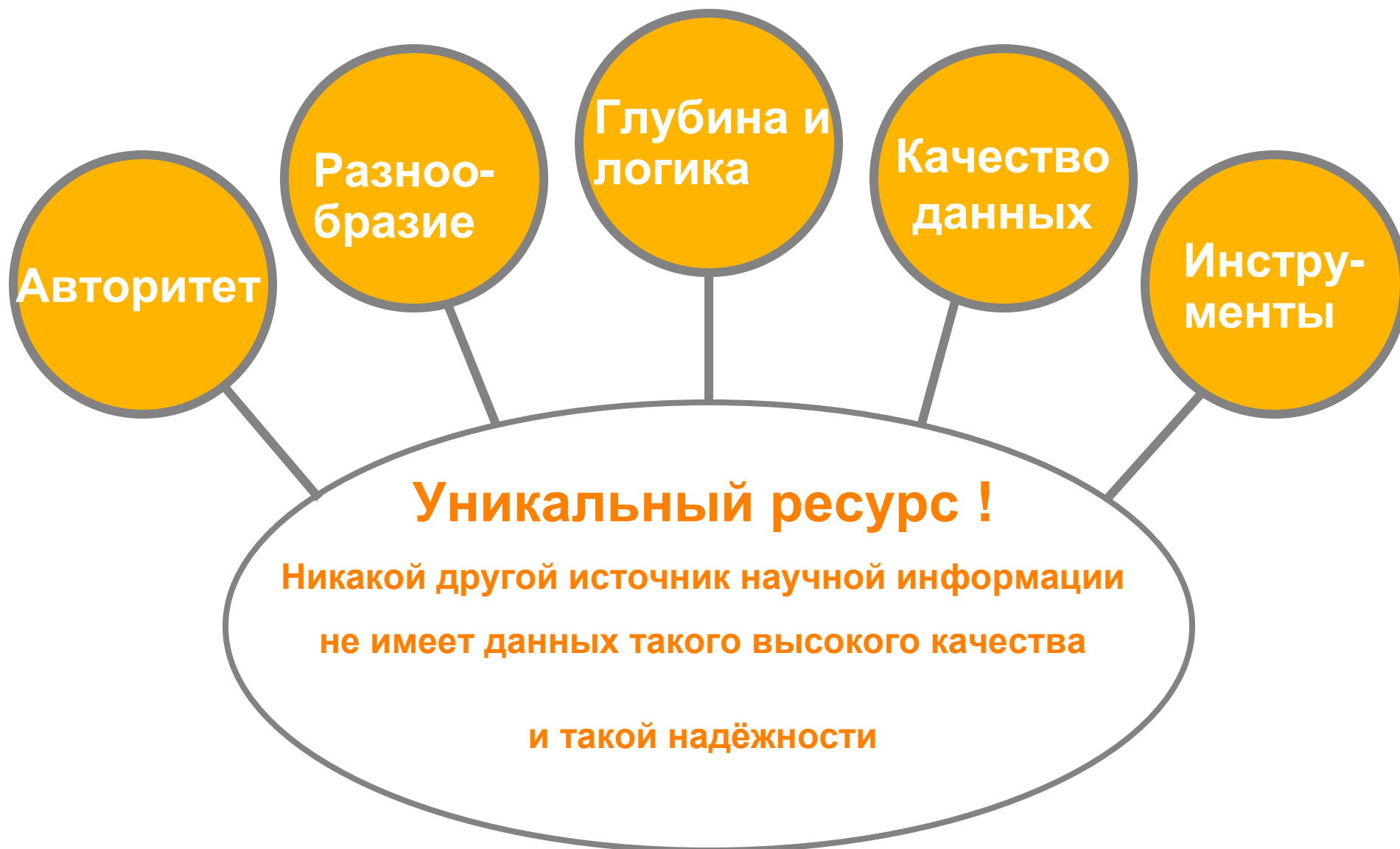
Функцией анализа получаем, напр., организации или сотрудников

Field: Institution			
HARVARD UNIV CALIF SAN FR			
UNIV MICHIGAN	931	2.9419 %	■
UNIV PENN	909	2.8724 %	■
UNIV WASHINGTON	867	2.7397 %	■
UNIV PITTSBURGH	848	2.6796 %	■
UNIV CALIF SAN DIEGO	809	2.5564 %	■
JOHNS HOPKINS UNIV	805	2.5438 %	■
WASHINGTON UNIV	782	2.4711 %	■



Визуализация цитат по Citation Map

WEB OF SCIENCE – ОСНОВНЫЕ ПРЕИМУЩЕСТВА



НЕСКОЛЬКО СЛОВ О ПРЕИМУЩЕСТВАХ:

С WoS вы можете:

- Провести анализ событий
- Определить влиятельные исследования
- Узнать о международном сотрудничестве
- Выявить новых редакторов и авторов
- Расширить ваши исследования

Журналы из нашего региона в *Web of Science* в Апреле 2011 (+ число журналов с Impact Factor)

- Украина 18 (SE: 6)
- Россия 161 (SE:123, SSE: 6)
- Польша 143 (SE:103, SSE: 4)
- Турция 74 (SE:32, SSE: 7)
- Хорватия 60 (SE:24, SSE:12)
- Румыния 58 (SE:33, SSE: 3)
- Чешская Республика 57 (SE:31, SSE:5)
- Венгрия 40 (SE:21, SSE:3)
- Словакия 25 (SE:16, SSE: 3);Словения 25 (SE:7, SSE: 6)
- Сербия 19 (SE:9, SSE: 1)
- Болгария 10 (SE: 8)



Украинские Журналы в *Web of Science* (Апрель 2011)...

- Actual Problems of Economics
- Condensed Matter Physics (*)
- Journal of Mathematical Physics Analysis Geometry
- Journal of Superhard Materials
- Journal of Water Chemistry and Technology
- Kinematics and Physics of Celestial Bodies
- Low temperature physics
- Materials science (*)
- Metallofizika i noveishie tekhnologii (*)
- Neurophysiology

- (*) with Impact Factor



THOMSON REUTERS

Web of Science® – with Conference Proceedings

Украинские Журналы в *Web of Science* (Апрель 2011)

- Nonlinear Oscillations
- Powder metallurgy and metal ceramics (*)
- Problems of atomic science and technology (*)
- Strength of materials
- Symmetry integrability and geometry-methods and applications (*)
- Theoretical and experimental chemistry
- Ukrainian journal of physical optics
- Ukrainian mathematical journal

- (*) with Impact Factor

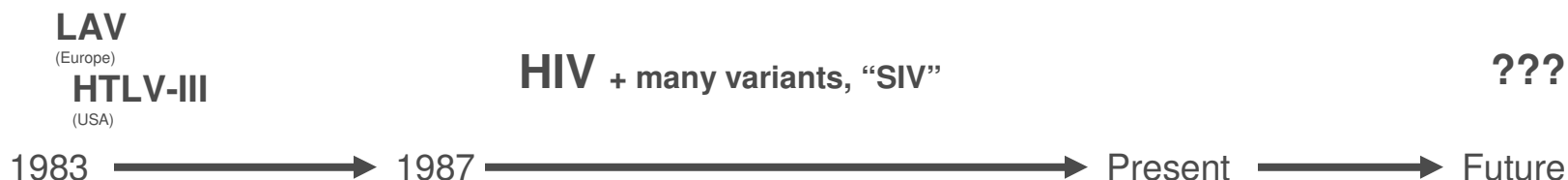


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Citation Index – Добавленная стоимость

- Мир науки постоянно развивается, а вместе с ним меняется терминология понятий
- Поиск по тексту может пропустить важную информацию
- Вы можете не знать терминологию--сеть связей цитат способствует вашему поиску



IMPORTANCE OF THE NEF GENE FOR MAINTENANCE OF HIGH VIRUS LOADS AND FOR DEVELOPMENT OF AIDS

Author(s): KESTLER HW, RINGLER DJ, MORI K, et al.

Source: CELL Volume: 65 Issue: 4 Pages: 651-662 Published: MAY 17 1991

Times Cited: 1,103 (from Web of Science)

Cited References: 49 [Citation Map](#)

Abstract: When rhesus monkeys were infected with a form of cloned SIVmac239 having a premature stop codon at this position quickly and universally came to predominate in the infected monkeys. These revertants are strong selective forces for open functional forms of nef in vivo. Although deletion of nef sequences has no effect on replication in cultured cells, deletion of nef sequences dramatically altered the properties of virus in infected monkeys. These results indicate that nef is required for maintaining high virus loads during the course of persistent infection in vivo. Thus, nef should become a target for antiviral drug development. Furthermore, the properties of virus with a premature stop codon indicate that nef is required for making live-attenuated strains of virus for experimental vaccine testing.

Document Type: Article

Language: English

KeyWords Plus: SIMIAN IMMUNODEFICIENCY VIRUS; OPEN READING FRAME; RHESUS-MONKEYS; PROTEIN; MUTATIONAL ANALYSIS; MACAQUE MONKEYS; HTLV-III; SOR GENE; TYPE-1; PROTEIN

Статья цитируется 1103 раза, но не содержит термина "HIV." Невозможно ее найти путем поиска текста, но ее легко найти с помощью цитат



Web of Science® – now with Conference Proceedings

Search for:

in **Topic**

Example: oil spill* mediterranean

AND in **Author**

Example: O'Brian C* OR OBrian C*

Need help finding papers by an author? Use Author Finder.

AND in **Publication Name**

Example: Cancer* OR Journal of Cancer Research and Clinical Oncology

[Add Another Field >>](#)

Current Limits: [\[Hide Limits and Settings\]](#) (To save these permanently, [sign in](#) or [register](#).)

Timespan:

All Years (updated 2009-10-17)
 From 1900-1914 to 2009 (default is all years)

Citation Databases:

- Science Citation Index Expanded (SCI-EXPANDED)--1900-present
- Social Sciences Citation Index (SSCI)--1898-present
- Arts & Humanities Citation Index (A&HCI)--1975-present
- NEW!** Conference Proceedings Citation Index- Science (CPCI-S)--1990-present
- NEW!** Conference Proceedings Citation Index- Social Science & Humanities (CPCI-SS)--1990-present

Chemical Databases:

- Index Chemicus (IC)--1993-present
- Current Chemical Reactions (CCR-EXPANDED)--1985-present
(includes Institut National de la Propriete Industrielle structure data back to 1840)

- Topic
- Title
- Author
- Group Author
- Editor
- Publication Name**
- Year Published
- Address
- Conference
- Language
- Document Type
- Funding Agency
- Grant Number

Несложное задание поиска

Можно уточнить поиск по дате или периоду

More information for new users

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It is now searchable from within Web of Science as the Conference Proceedings Citation Index. [More information.](#)

Note: Times Cited counts now include proceedings citations. [More information.](#)

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- [What is ResearcherID?](#)
- [Sign In](#) to ISI Web of Knowledge to get your ResearcherID.

Web of Science® – now with Conference Proceedings

Search for:

in **Topic**

Example: oil spill* mediterranean

AND in **Author**

Example: O'Brian C* OR OBrian C*

Need help finding papers by an author? Use Author Finder.

AND in **Publication Name**

Example: Cancer* OR Journal of Cancer Research and Clinical Oncology

[Add Another Field >>](#)

Current Limits: [\[Hide Limits and Settings\]](#) (To save these permanently, [sign in](#) or [register](#).)

Timespan:

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- NEW!** Conference Proceedings Citation Index- Social Science & Humanities (CPCI-SSH)--1990-present

Chemical Databases:

- Index Chemicus (IC)--1993-present
- Current Chemical Reactions (CCR-EXPANDED)--1985-present
(includes Institut National de la Propriete Industrielle structure data back to 1840)

Можно выбрать отдельные источники данных для конкретных целей поиска

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- [Training in multiple languages](#)

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- [What is ResearcherID?](#)
- [Sign In](#) to ISI Web of Knowledge to get your ResearcherID.

Web of Science® – now with Conference Proceedings

Results Topic=(nanoribbon)
Timespan=2008-2009. Databases=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, IC, CCR-EXPANDED.

Scientific WebPlus^{BETA} View Web Results >>

Results: **233** Page 1 of 24 Go

Print | E-mail | Add to Marked List | Save to EndNote Web | Save to EndNote, RefMan, ProCite | more options

- Latest Date
- Latest Date
- Times Cited**
- Relevance
- First author
- Source Title
- Publication Year
- Conference Title

Hide Refine

Refine Results

Search within results for

Search

Subject Areas

- PHYSICS, APPLIED (73)
 - MATERIALS SCIENCE, MULTIDISCIPLINARY (68)
 - NANOSCIENCE & NANOTECHNOLOGY (63)
 - PHYSICS, CONDENSED MATTER (47)
 - CHEMISTRY, MULTIDISCIPLINARY (38)
- more options / values...

Document Types

- ARTICLE (198)
 - PROCEEDINGS PAPER (30)
 - REVIEW (3)
 - CORRECTION (1)
 - NEWS ITEM (1)
- more options / values...

Authors

Source Titles

Publication Years

Conference Titles

Institutions

Languages

Countries/Territories

For advanced refine options, use

Analyze Results

1. Title: [Electrostatic confinement of electrons in graphene nanoribbons](#)
Author(s): Liu XL, Oostinga JB, Morpurgo AF, et al.
Source: [PHYSICAL REVIEW B](#) Volume: 80 Issue: 12 Article Number: 121407 Published: SEP 2009
Times Cited: 0
[→Links](#) [Full Text](#)
2. Title: [Interfaces within graphene nanoribbons](#)
Author(s): Wurm J, Wimmer M, Adagideli I, et al.
Source: [NEW JOURNAL OF PHYSICS](#) Volume: 11 Article Number: 095022 Published: SEP 30 2009
Times Cited: 1
[→Links](#) [Full Text](#)
3. Title: [Battery Drivable Organic Single-Crystalline Transistors Based on Surface Grafting Ultrathin Polymer Dielectric](#)
Author(s): Li LQ, Zhang YJ, Li HX, et al.
Source: [ADVANCED FUNCTIONAL MATERIALS](#) Volume: 19 Issue: 18 Pages: 2987-2991 Published: SEP 23 2009
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4. Title: [Effects of B and N doping on sp² carbon nanoribbons](#)
Author(s): Zheng XH, Dai ZX, Wang XL, et al.
Source: [ACTA PHYSICA SINICA](#) Volume: 30 Issue: 12 Article Number: 220201 Published: SEP 20 2009
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5. Title: [The importance of defects for carbon nanoribbons](#)
Author(s): Botello-Mendez AR, Lopez-Utrilla MO, et al.
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Times Cited: 0
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6. Title: [Spin-Polarized Transport on Zigzag Graphene Nanoribbon with a Single Defect](#)
Author(s): Kumazaki H, Hirashima DS
Source: [JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN](#) Volume: 78 Issue: 9 Article Number: 094701 Published: SEP 2009
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7. Title: [Transforming Carbon Nanotube Devices into Nanoribbon Devices](#)
Author(s): Zhang ZX, Sun ZZ, Yao J, et al.
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Author(s): Li XL, Wang XR, Zhang L, et al.
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Times Cited: 281
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- Title: Room-temperature all-semiconducting sub-10-nm graphene nanoribbon field-effect transistors
Author(s): Wang XR, Ouyang XJ, Li XL, et al.
Source: PHYSICAL REVIEW LETTERS Volume: 100
Times Cited: 93
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- Title: Tailoring the atomic structure of graphene nanoribbons
Author(s): Tapasztó L, Dobrik G, Lambin P, et al.
Source: NATURE NANOTECHNOLOGY Volume: 3 Issue: 5
Times Cited: 35
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- Title: Boundary conditions for Dirac fermions on a topological surface
Author(s): Akhmerov AR, Beenakker CWJ
Source: PHYSICAL REVIEW B Volume: 77 Issue: 8
Times Cited: 31
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- Title: Edge effects in finite elongated graphene nanoribbons
Author(s): Hod O, Peralta JE, Scuseria GE
Source: PHYSICAL REVIEW B Volume: 76 Issue: 23
Times Cited: 23
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- Title: Prediction of very large values of magnetoresistance in graphene nanoribbons
Author(s): Kim WY, Kim KS
Source: NATURE NANOTECHNOLOGY Volume: 3 Issue: 5
Times Cited: 22
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Author(s): Kan E, Jena D
Source: APPLIED PHYSICS LETTERS Volume: 91
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 Author(s): DENKOV ND, VELEV OD, KRALCHEVSKY PA, et al.
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 Source: **LANGMUIR** Volume: 12 Issue: 8 Pages: 2045-2051 Published: APR 17 1996
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4. Title: [EFFECT OF SURFACE MOBILITY ON THE DYNAMIC BEHAVIOR OF THIN LIQUID-FILMS](#)
 Author(s): IVANOV IB
 Source: **PURE AND APPLIED CHEMISTRY** Volume: 52 Issue: 5 Pages: 1241-1262 Published: 1980
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5. Title: [HYDRODYNAMICS OF THIN LIQUID-FILMS - EFFECT OF SURFACE VISCOSITY ON THINNING AND RUPTURE OF FOAM FILMS](#)
 Author(s): IVANOV IB, DIMITROV DS
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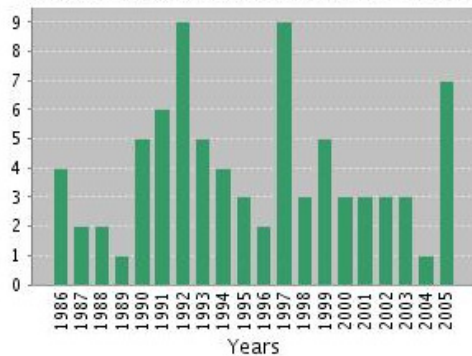
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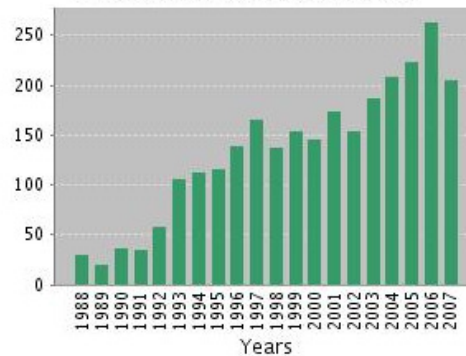
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Abstract: The analytical expressions for both diagonal and off-diagonal ac and dc conductivities of graphene placed in an external magnetic field are derived. These conductivities exhibit rather unusual behavior as functions of frequency, chemical potential, and applied field which is caused by the fact that the quasiparticle excitations in graphene are Dirac-like. One of the most striking effects observed in graphene is the odd integer quantum Hall effect. We argue that it is caused by the anomalous properties of the Dirac quasiparticles from the lowest Landau level. Other quantities such as Hall angle and Nernst signal also exhibit rather unusual behavior, in particular when there is an excitonic gap in the spectrum of the Dirac quasiparticle excitations.

Document Type: Article

Language: English

KeyWords Plus: 2-DIMENSIONAL GRAPHITE SYSTEM; QUANTIZING MAGNETIC-FIELD; FLAVOR SYMMETRY-BREAKING; ELECTRON-GAS; LANDAU-LEVELS; BERRYS PHASE; OSCILLATIONS; COEFFICIENTS; SPECTRUM; STATES

Reprint Address: Gusynin, VP (reprint author), Bogolyubov Inst Theoret Phys, Metrologicheskaya St 14-B, UA-03143 Kiev, Ukraine

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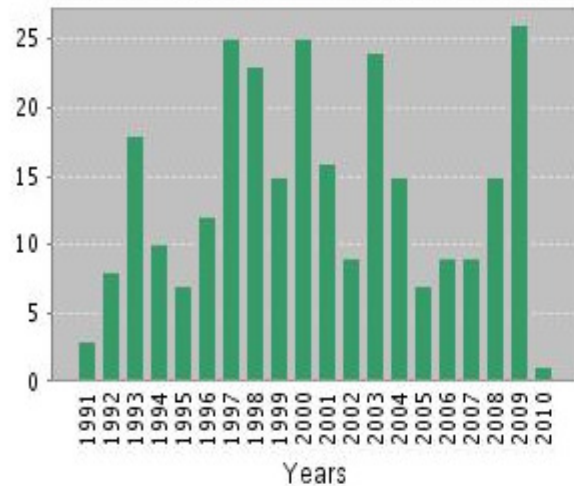


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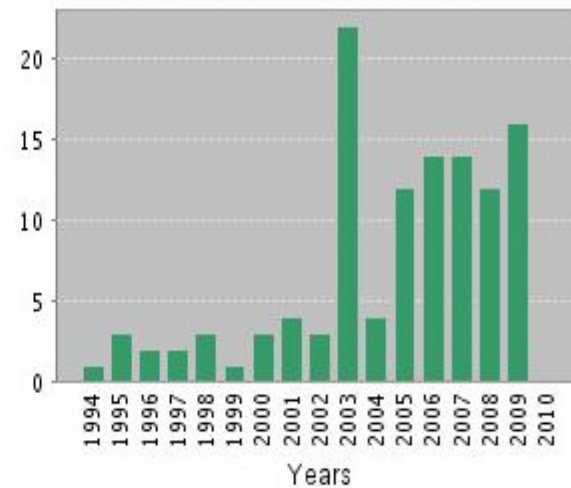
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Author(s): Kosynkin DV (Kosynkin, Dmitry V.)¹, Higginbotham AL (Higginbotham, Amanda L.)¹, Sinitskii A (Sinitskii, Alexander)¹, Lomeda JR (Lomeda, Jay R.)¹, Dimiev A (Dimiev, Ayrat)¹, Price BK (Price, B. Katherine)¹, Tour JM (Tour, James M.)

Source: NATURE Volume: 458 Issue: 7240 Pages: 872-U5 Publ

Times Cited: 19 **References:** 30 [Citation Map](#)

Abstract: Graphene, or single-layered graphite, with its high crystallinity and material showing great promise for the fabrication of nanoscale ribbons, gradually transform from semiconductors to semimetals through lithographic(7,8), chemical(9-11) and synthetic(12) procedure deposition process(13) has successfully produced macroscopic process for producing a nearly 100% yield of nanoribbon structures. Although oxidative shortening of MWCNTs has previously been obtained. Subsequent chemical reduction of the nanoribbons could eventually lead to applications in fields of electronics and



has emerged as an exciting two-dimensional material with straight edges, termed graphene nanoribbons, and one chemical vapour phase growth process to describe a simple and carbon nanotube ribbon structures. The solubility of nanoribbons is enhanced by oxidative shortening(15-17).

Document Type: Article

Language: English

KeyWords Plus: EXFOLIATED GRAPHITE OXIDE; AQUEOUS DISPERSIONS; CARBON NANOTUBES; PERMANGANATE; NANOSHEETS; OXIDATION; PHASE TRANSITION

Reprint Address: Tour, JM (reprint author), Rice Univ, Dept Chem, MS 222,6106 Houston, TX 77005 USA

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Funding Acknowledgement:

Funding Agency	Grant Number
US Defense Advanced Research Projects Agency	
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The authors thank P. M. Ajayan, W. Guo, J. Duque, Z. Sun, and Z. Jin for technical assistance and discussions. Mitsui & Co. generously donated the MWCNTs. The work was funded by the US Defense Advanced Research Projects Agency, the US Federal Aviation Administration, Department of Energy (DE-FC-36-05GO15073) and Wright Patterson Air Force Laboratory through the US Air Force Office of Scientific Research.

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3.	<p>Title: Unzipping Carbon Nanotubes: A Peeling Method for the Formation of Graphene Nanoribbons Author(s): Hirsch A Source: ANGEWANDTE CHEMIE-INTERNATIONAL EDITION Volume: 48 Issue: 36 Pages: 6594-6596 Published: 2009 Times Cited: 0</p> <p>→Links Full Text</p>	17	11
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Source: NATURE Volume: 458 Issue: 7240 Pages: 872-U5 Published: APR 16 2009

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Abstract: Graphene, or single-layered graphite, with its high crystallinity and interesting semimetal electronic properties, has emerged as an exciting two-dimensional material showing great promise for the fabrication of nanoscale devices(1-3). Thin, elongated strips of graphene that possess straight edges, termed graphene ribbons, gradually transform from semiconductors to semimetals as their width increases(4-7), and represent a particularly versatile variety of graphene. Several lithographic(7,8), chemical(9-11) and synthetic(12) procedures are known to produce microscopic samples of graphene nanoribbons, and one chemical vapour deposition process(13) has successfully produced macroscopic quantities of nanoribbons at 950 degrees C. Here we describe a simple solution-based oxidative process for producing a nearly 100% yield of nanoribbon structures by lengthwise cutting and unravelling of multiwalled carbon nanotube (MWCNT) side walls. Although oxidative shortening of MWCNTs has previously been achieved(14), lengthwise cutting is hitherto unreported. Ribbon structures with high water solubility are obtained. Subsequent chemical reduction of the nanoribbons from MWCNTs results in restoration of electrical conductivity. These early results affording nanoribbons could eventually lead to applications in fields of electronics and composite materials where bulk quantities of nanoribbons are required(15-17).

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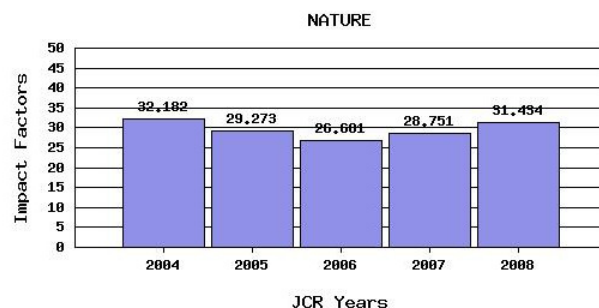
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Abstract: In an environment with support for mobile computing, we may have a collection of autonomous, distributed, heterogeneous and mobile databases, denoted Mobile Database Community (MDBC), in which each database user can access databases in the community through a wireless communication infrastructure. In such an environment, new participants may join to an MDBC as they move within communication range of one or more hosts which are members of the MDBC. Furthermore, MDBC participants may transiently disconnect from the network due to communication disruptions or to save power. Therefore, an MDBC can be characterized as a dynamically configurable environment. This paper describes an agent-based architecture, denoted AMDB (Accessing Mobile Databases), which enables such communities to be formed opportunistically over mobile database hosts in ad hoc configurable environments. The AMDB architecture is fully distributed and has the capability of exploiting mobile database hosts for queries and their results across mobile hosts.

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2. CN101741107-A
Title: Charging system for charging e.g. hand-held computer, has battery that is charged continuous rechargeable lithium battery until voltage of lithium battery is increased to specific value
Assignee: CELXPRT ENERGY CORP
Inventor(s): TADASHI O
Citing Patents: 0
3. CN2859828-Y
Title: Lithium battery core, has tab placed on pole plate, outer pole plate endowed to pocket-fold inner pole plate, and cover with non-polarity coating placed on outer pole plate, where outer pole plate is provided with two layers
Assignee: HUIZHOU TCL JINNENG BATTERY CO LTD
Inventor(s): GUO C, WANG H, WAN Y, et. al
Citing Patents: 0
4. KR2010065929-A
Title: Non-aqueous electrolyte for battery, includes organic solvent and lithium salt, where amount of addition of phenyl sulfone in electrolyte exceeds specific weight percentage
Assignee: SEULKI K
Inventor(s): SEULKI K
Citing Patents: 0
5. CN201475855-U
Title: Intelligent wind-light complementing street lamp system, has wind-driven generator and battery pack that are connected with battery by controller that is connected with illumination device and radio frequency identification card reader
Assignee: SHANGHAI TAI AI CONSTR ENG CO LTD

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Полная запись 1

Electrolyte for rechargeable electrochemical battery cell comprises bifluoride anion

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Patent Number(s): WO2010081170-A1

Inventor(s): AMATUCCI G

Patent Assignee(s) and Codes(s): UNIV RUTGERS STATE NEW JERSEY(RUTF-C)

Derwent Primary Accession Number: 2010-J17579 [49]

Abstract: NOVELTY - An electrolyte comprises bifluoride anion(s).

USE - Electrolyte for rechargeable electrochemical battery cell.

ADVANTAGE - The electrolyte has low molecular weight, high ionic conductivity, low modulus (to conform to electrode interfaces), and high intrinsic (or via passivation) anodic and cathodic stability at the negative and positive electrodes, respectively.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) a fluoride anion conducting material comprising a positive electrode; a negative electrode; and an electrolyte comprising a fluoride anion of formula $(HF)_nF^-$, where the material conducts F-anions; and

(2) a rechargeable electrochemical battery cell comprising a negative electrode comprising a metal fluoride, an electrolyte, an optional additional electrolyte, and a positive electrode comprising a compound of a low oxidation state, where a predominant diffusing species is a fluoride ion.

Technology Focus/Extension Abstract: TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Structure: The bifluoride anion is of formula $(F(HF)_n)^-$, $n = \text{greater than } 0 \text{ but less than or equal to } 10$, preferably 3. Preferred Component: The electrolyte comprises bifluoride anions. It is a catholyte. The positive electrode comprises metal(s) or carbon(s) which is in an electrochemically reduced state; and the negative electrode comprises metal fluoride(s). The positive electrode comprises carbon(s) from graphite, single walled carbon nanotube, or multiwalled carbon nanotube. It also comprises metal(s) from bismuth, copper, molybdenum, iron, silver, gold, palladium, nickel, cobalt, manganese or vanadium. The negative electrode comprises alkali fluoride and alkaline earth fluoride. It may also comprise zinc, aluminum, silicon or germanium. The positive electrode comprises metal fluoride(s) or carbon fluoride(s), where the metal fluoride or carbon fluoride is in an electrochemically oxidized state; and the negative electrode comprises metal(s). The positive electrode comprises a graphite fluoride. It also comprises bismuth fluoride, silver fluoride, nickel fluoride, copper fluoride, lead fluoride, cobalt fluoride, molybdenum fluoride or iron fluoride. The positive electrode further comprises electronically conductive material(s). The positive electrode is an electrode where a predominant diffusing species is a fluoride ion. It comprises a nanostructure carbon from nanographite, carbon nanotube, buckyball, mesoporous carbon, or microporous carbon. The negative electrode accepts a fluoride ion. It comprises lanthanum, lithium, sodium, calcium, strontium, barium, rubidium, or potassium. The electrolyte comprises bifluoride anion(s). It is free of hydrogen fluoride. It is a solid state fluoride conductor.

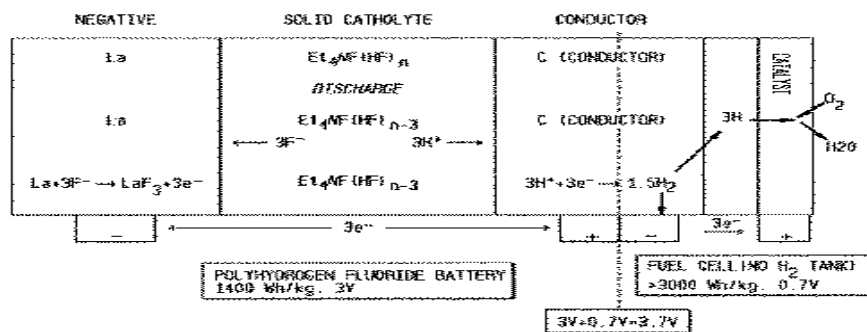
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Component: The electrolyte comprises cation(s) comprising organic group(s). The cation comprising organic



Полная запись 2

Drawing:

FIG. 2



International Patent Classification: H01M-004/00

Derwent Class Code(s): L03 (Electro-(in)organic, chemical features of electrical devices); X16 (Electrochemical Storage)

Derwent Manual Code(s): L03-E01B8; L03-E01C; L03-E08B; L03-E09; X16-B01; X16-E; X16-J

Patent Details:

Patent Number	Publ. Date	Main IPC	Week	Page Count	Language
WO2010081170-A1	15 Jul 2010	H01M-004/00	201049	Pages: 88	English

Application Details:

WO2010081170-A1	WOUS020814	12 Jan 2010
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Priority Application Information and Date:

US144062P	12 Jan 2009
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Designated States:

WO2010081170-A1:

(National): AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CL; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PE; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; ST; SV; SY; TH; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; ZA; ZM; ZW

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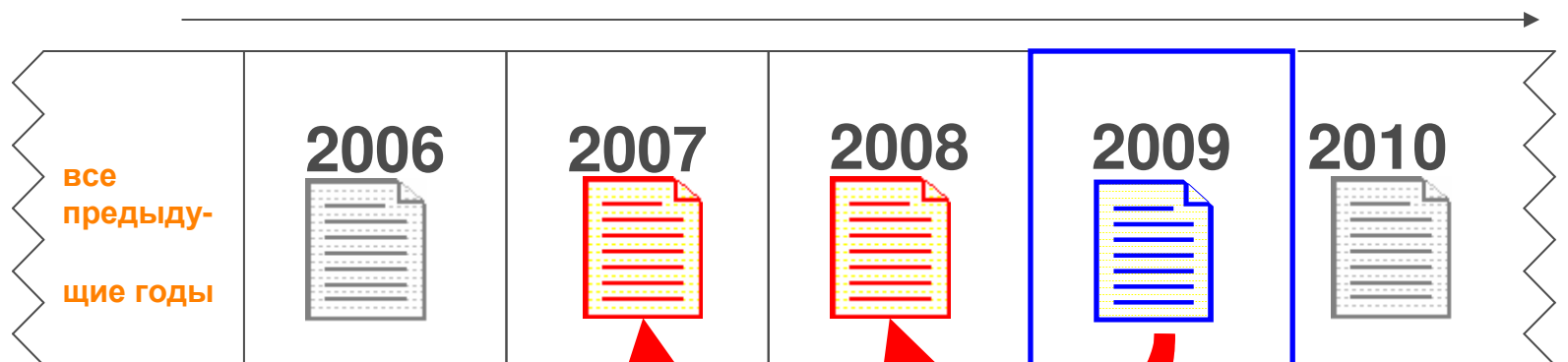


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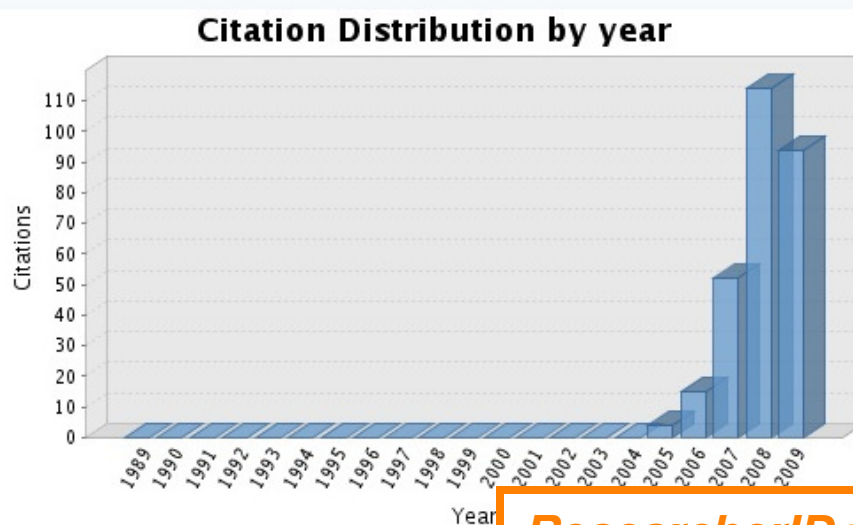
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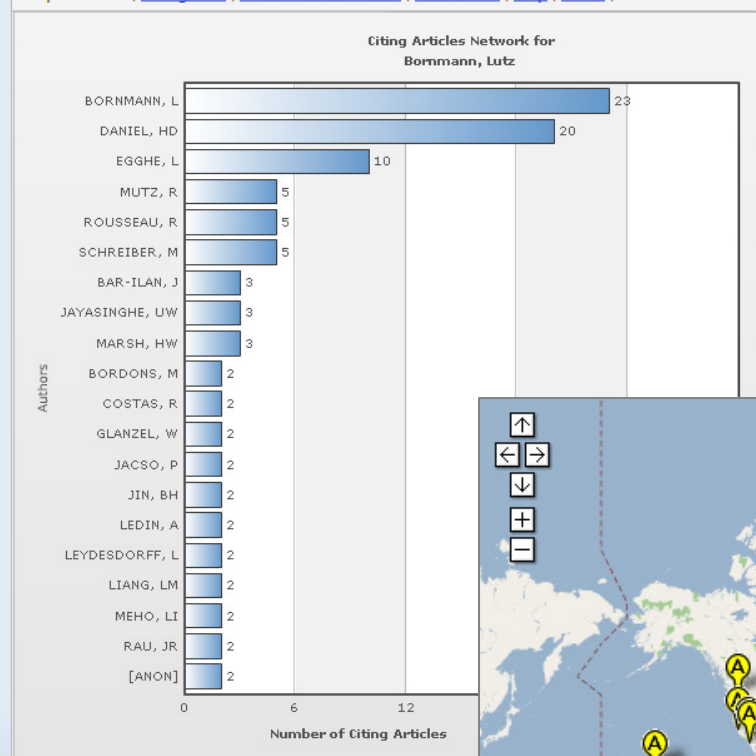
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