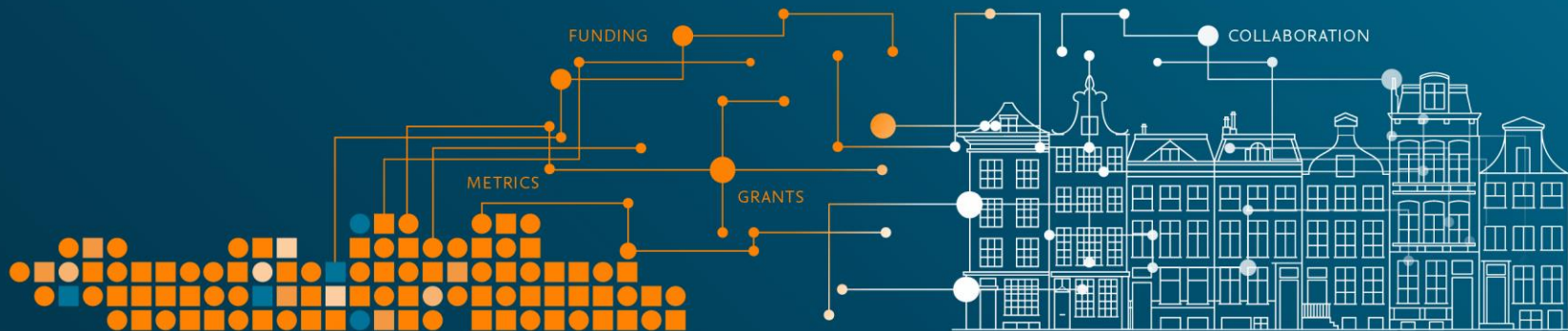


# Demystifying Scopus APIs

Massimiliano Bearzot | Customer Consultant – South Europe

April 17, 2018



## What You Will Learn Today about Scopus APIs

- **Simplistically, how do Scopus APIs work & why do they matter?**
- **What is the procedure to start using Scopus and other Elsevier APIs?**
- **How are Scopus APIs most commonly used by Academic, Government and Corporate customers?**
- **What are some examples of current users of the Scopus APIs?**



# Why are Scopus APIs Important?

- **Scopus captures articles** being published in **virtually all scholarly journals of any significance in the world**; and its **profiling of authors and institutions** makes it easy to find new articles by those authors at those institutions.
- The **Scopus UI (user interface)** offers many features allowing **librarians, researchers, developers and & business intelligence groups** to manually find publications originating from their institution.
- Aside from that user interface, Scopus also **has Application Programming Interfaces (APIs)** that offer the same features, but with results in a **machine-readable format that enables software, rather than humans on the UI (User Interface), to find articles, authors and institutions in Scopus.**
- This allows developers to write programs that **automatically extract data** from Scopus, and add that data to their systems & applications.

## What Elsevier products have APIs?

Scopus

ScienceDirect

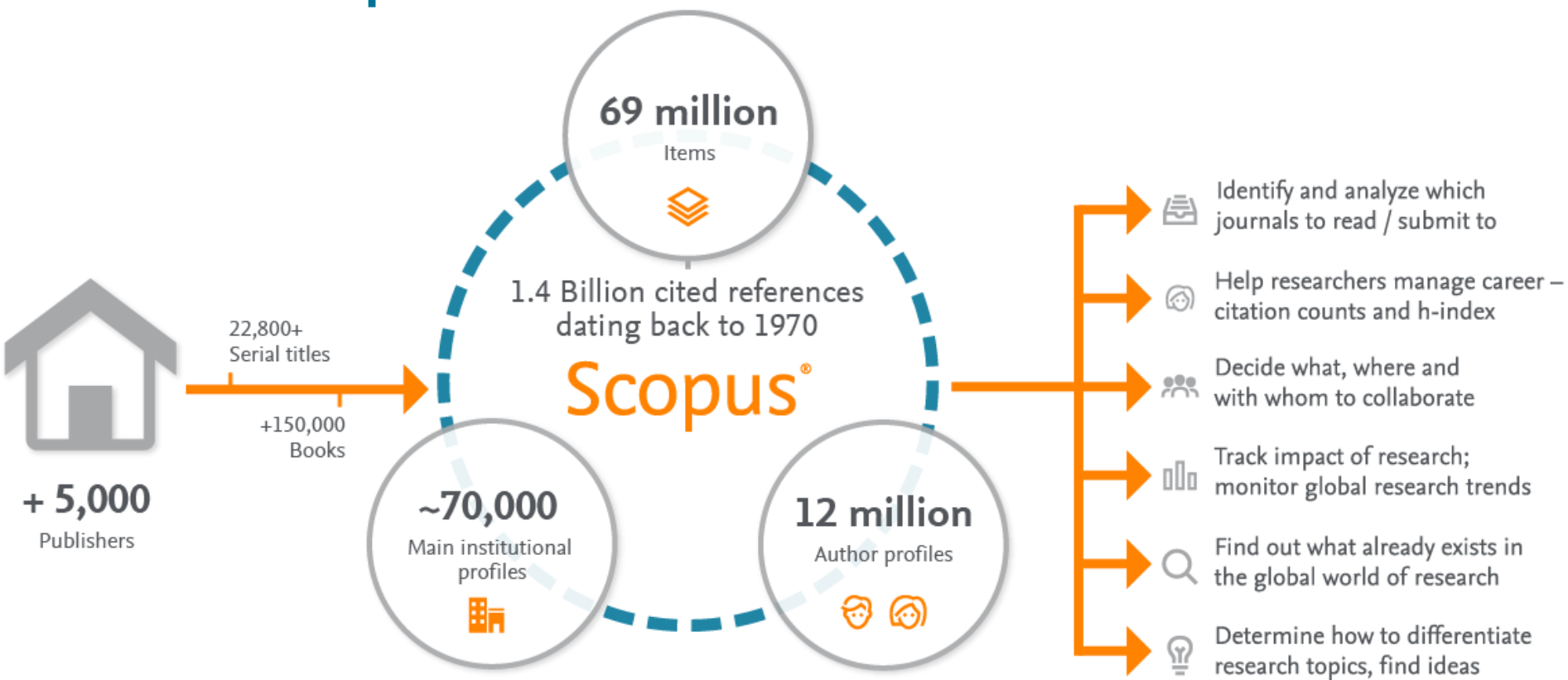
Engineering Village

Embase

SciVal

## Elsevier Developers

# What is Scopus Data?



## “Data Delivery” Methods: How can users get Scopus Data?

### Scopus.com

#### What?

World’s largest abstract and citation database of peer-reviewed literature

#### How?

Users access content from 5000 publishers directly with discovery & analytical tools

#### Why?

No other tool can tell you who is doing science and where better than Scopus

### Scopus & SciVal APIs

#### What?

Way for a client’s system to ask Scopus for data in real-time

#### How?

API is like piping- without it, the customer could not connect to our data reservoir

#### Why?

Customer chooses for integration with programs and applications

### Custom Data

#### What?

Bulk delivery of data in (relatively) static form

#### How?

Customer defines how much data they need and then deliver it on a thumb drive

#### Why?

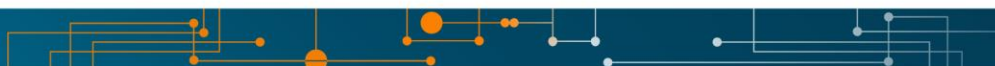
Custom Data is a great fit if the customer has a specific data need and wants control over the way its analyzed

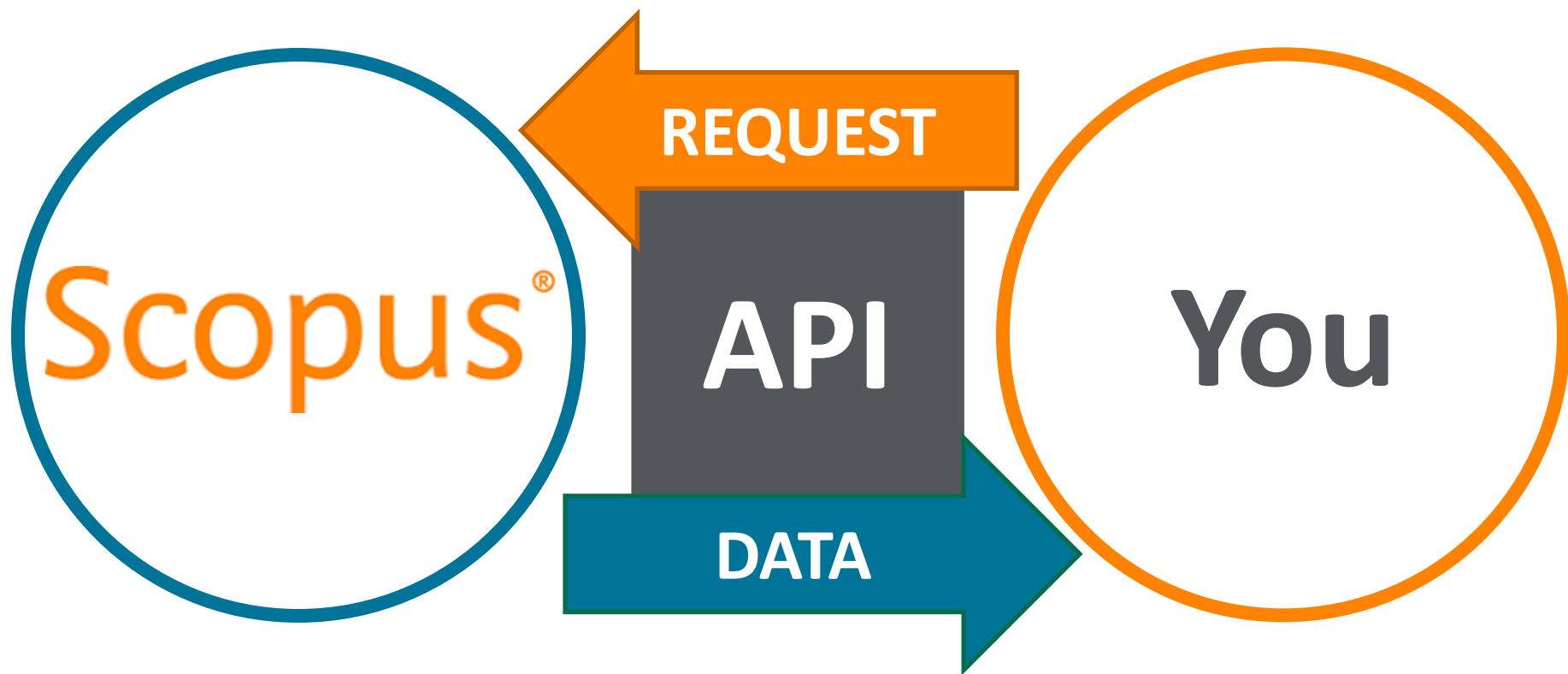
## How do you generate an API call?

- Calling a REST API is just like going to a web address with your browser, except:
  - You don't use a browser to go to the address manually – instead, you write a computer program that goes to the address automatically as part of a script
  - The address usually contains some variables that specify what exactly you want to get
  - What you get from the API is not an HTML document that is shown to a user in a browser, but XML (or another format) that is processed by the computer program
  - APIs usually don't use un/pw for access, but an APIKey and/or access tokens

**So, first: get an API key from <http://dev.elsevier.com>**

- Once you've registered your website or application for access, you will be issued an APIKey that has access rights to a number of Elsevier APIs
- Read the documentation to understand the APIs' capabilities
- Write your application/program to make API requests using the correct parameters and your APIKey, and to parse the response from the APIs into your web site or application

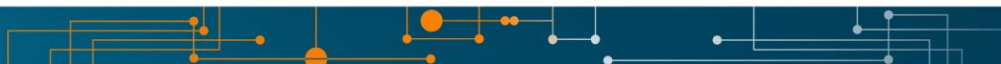




# It's Plural! Scopus has many APIs

Scopus offers multiple APIs, which retrieve different data

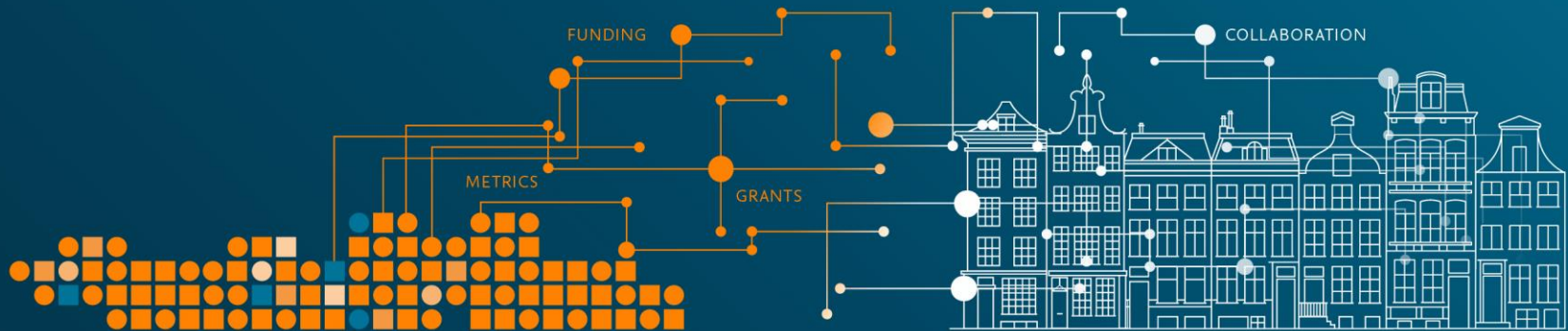
- Scopus Search API
- Abstract Citation Count API
- Citation Overview API
- Abstract Retrieval API
- Affiliation Search API
- Affiliation Retrieval API
- Author Search API
- Author Retrieval API
- Subject Classifications API
- Serial Title API
- Author Feedback API





# Get API Access by using Elsevier Developers site

<http://dev.elsevier.com>



# How do you get access to Scopus APIs?

1. Look at use cases

2. Get API Key

3. Start coding

## Elsevier Developers

Academic Research

Cited by in Scopus

IR/CRIS/VIVO

Journal Metrics

Federated Search

Commercial Use

## Each has a detailed policy

### Academic Research

Elsevier allows access to the Scopus APIs in support of academic research for researchers affiliated with a Scopus subscribing institution.

Detailed policy: [show/hide](#)

Definition: The end product is a scholarly published work that utilizes publications in Scopus for a research effort. The researcher wants to publish a scholarly work regarding Scopus data relationships.

Examples:

- Analysis of abstract cited-by counts across a specific, singular academic discipline.
- Relationship between authors' geographic locations and their academic affiliations.

## What are the most popular use cases?

1. Federated Search
2. Cited By in Scopus
3. IR/CRIS/VIVO

# Register for an API Key

1. Look at use cases

2. Get API Key

3. Start coding

## Tip:

- If you are a registered user of most Elsevier products, like Scopus, ScienceDirect, Engineering Village, Embase or more, use that UN/PW
- Otherwise, register once and use this username

## Elsevier Developers

[My API key](#)

[API Specification](#)

[Interactive APIs](#)

[How to Guides](#)

 [Rebecca Brown](#) [Logout](#)

# Run a test API call using our interactive documentation

1. Look at use cases

2. Get API Key

3. Start coding

1

Elsevier Developers

My API key | API Specification | Interactive APIs | How to Guides

### Interactive APIs

The easiest way to get familiar with our APIs is through the interactive swagger examples. You don't need to obtain your own API key for that, just select the API of interest and hit "Try it out!" button. The interactive API will teach you how to construct a request, and you will see the expected response on the spot.

**Note:** The example API key used in interactive APIs is meant for demonstration purposes only; please obtain and use your own API key with your application. If you'd like to use your own API key with Interactive APIs, you can do so by pasting it into the 'apiKey' field. (In case you wonder: by default, APIkeys issued by us are configured for cross-origin resource sharing from <https://dev.elsevier.com> using W3C CORS.)

By product:

Scopus Interactive APIs >

ScienceDirect Interactive APIs >

Engineering Village Interactive APIs >

2

My API key | API Specification | Interactive APIs | How to Guides

### Elsevier Scopus APIs - interactive documentation

Detailed interface documentation is located [here](#).

<b>Affiliation_Search : Affiliation Search API</b>	Show/Hide	List Operations	Expand Operations
<b>Author_Search : Author Search API</b>	Show/Hide	List Operations	Expand Operations
<b>Scopus_Search : Scopus Search API</b>	Show/Hide	List Operations	Expand Operations
<b>Abstract_Retrieval : Abstract Retrieval API</b>	Show/Hide	List Operations	Expand Operations
<b>Affiliation_Retrieval : Affiliation Retrieval API</b>	Show/Hide	List Operations	Expand Operations
<b>Author_Retrieval : Author Retrieval API</b>	Show/Hide	List Operations	Expand Operations
<b>Abstract_Citation_Count : Abstract Citation count API</b>	Show/Hide	List Operations	Expand Operations
<b>Citations_Overview : Citations Overview API</b>	Show/Hide	List Operations	Expand Operations
<b>Serial_Title : Serial Title API</b>	Show/Hide	List Operations	Expand Operations

3

authlast(Einstein) and authfirst(Albert) and affil(P

Search query string query string

7f59af901d2d86f78af1f690c1bf9426a

Your API key query string

httpaccept

Requested content type, overrides HTTP header value

Try it out! Hide Response

### Curl

```
curl -X GET --header 'Accept: application/json' 'https://api.elsevier.com/content/search/author?'
```

### Request URL

```
https://api.elsevier.com/content/search/author?query=authlast(Einstein)%20and%20authfirst(Albert)
```

### Response Body

```
{
  "search-results": {
    "opensearch:totalResults": "1",
    "opensearch:startIndex": "0",
    "opensearch:itemsPerPage": "1",
    "opensearch:Query": {
      "@role": "request",
      "@searchTerms": "authlast(Einstein) and authfirst(Albert) and affil(Princeton)",
      "@startPage": "0"
    },
    "link": [
      {
        "@_fa": "true",
        "@href": "https://api.elsevier.com/content/search/author?start=0&count=25&query=authlast%20Einstein%29+and+authfirst%20Albert%29+and+affil%20Princeton%29&apiKey=7f59af901d2d86f78af1f690c1bf9426a",
        "@ref": "self",
        "@type": "application/json"
      }
    ]
  }
}
```

<https://dev.elsevier.com/scopus.html>

# What are the most common uses of Scopus APIs?

Scopus Use cases	API	More information
Showing publications from Scopus on your website	Scopus Search API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Showing Scopus cited-by counts on your website	Scopus Search API / Abstract Citation Count API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Federated search	Scopus Search API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Populating IRs with basic document metadata from Scopus	Scopus Search API / Abstract Retrieval API / Citation Count API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Populating current research information systems with basic document metadata and citation overviews from Scopus	Scopus Search API/ Abstract Retrieval API / Citation Count API/ Citation Overview API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Populating publication histories of VIVO profiles	Scopus Search API / Abstract Retrieval API / Citation Count API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Showing SNIP/SJR/IPP on journal homepage	Serial Title API	<a href="#">Detailed policy</a> <a href="#">Implementation guide</a>
Academic Research	Scopus Search API/ Abstract Retrieval API / Citation Count API/ Citation Overview API	<a href="#">Detailed Policy</a>
Limited Use for Commercial Applications	Scopus Search API	Please <a href="#">contact us</a>

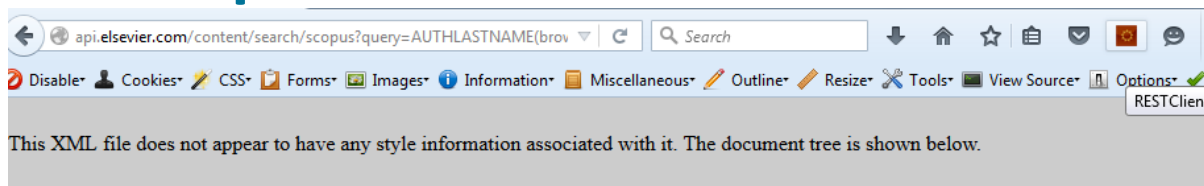
# Overview of (Access) levels

	Non Subscriber	Scopus.com Subscriber	Case by Case Subscriber	
Limits Types	RESTful APIs	Cited-by and Scopus Query API	All APIs	Some text-mining and deeper integration with partner tools
	API Rate Limits	20 records per call	200 records per call	
Use-cases	Display Scopus Citation Counts or Records	Yes, Citation and Query API	Yes, more results returned	
	IR and CRIS Systems	No	Yes, Full integration with IR and CRIS systems	
	Federated Search Integration	No	Yes, Federated Search via Query API and Citation Count	Deeper Integration with preferred Partners
	Data Rights for Research (Text-mining, etc)	No	Access for Academic Research Commercial use on case by case basis	

# Example of an API Request

- I am looking to retrieve records from Scopus authored by anyone with the last name Brown written in Chemistry journals.
- I sign up for my developer key at <http://dev.elsevier.com/myapikey.html>
- I register a new project and read the documentation to learn how to structure the request
- <https://api.elsevier.com/content/search/scopus?query=AUTHLASTNAME%28brown%29%20AND%20SUBJAREA%28CHEM%29&apikey=6ab3c2a01c29f0e36b00c8fa1d013f83>

# What does the output of an API Call look like?



```

- <search-results>
  <opensearch:totalResults>14446</opensearch:totalResults>
  <opensearch:startIndex>0</opensearch:startIndex>
  <opensearch:itemsPerPage>25</opensearch:itemsPerPage>
  <opensearch:Query role="request" searchTerms="AUTHLASTNAME%28brown%29+AND+SUBJAREA%28CHEM%29"
  startPage="0"/>
  <link ref="self" href="http://api.elsevier.com:80/content/search/scopus?start=0&count=25&
  query=AUTHLASTNAME%28brown%29+AND+SUBJAREA%28CHEM%29&apikey=feada8950b5eb3c481f48762bde05c6"
  type="application/xml"/>
  <link ref="first" href="http://api.elsevier.com:80/content/search/scopus?start=0&count=25&
  query=AUTHLASTNAME%28brown%29+AND+SUBJAREA%28CHEM%29&apikey=feada8950b5eb3c481f48762bde05c6"
  type="application/xml"/>
  <link ref="next" href="http://api.elsevier.com:80/content/search/scopus?start=25&count=25&
  query=AUTHLASTNAME%28brown%29+AND+SUBJAREA%28CHEM%29&apikey=feada8950b5eb3c481f48762bde05c6"
  type="application/xml"/>
  <link ref="last" href="http://api.elsevier.com:80/content/search/scopus?start=4975&count=25&
  query=AUTHLASTNAME%28brown%29+AND+SUBJAREA%28CHEM%29&apikey=feada8950b5eb3c481f48762bde05c6"
  type="application/xml"/>
- <entry>
  <link ref="self" href="http://api.elsevier.com/content/abstract/scopus_id/84943279757"/>
  <link ref="author-affiliation" href="http://api.elsevier.com/content/abstract/scopus_id/84943279757?field=author.affiliation"/>
  <link ref="scopus" href="http://www.scopus.com/inward/record.url?partnerID=HzOxMe3b&scp=84943279757&origin=inward"/>
  <link ref="scopus-citedby" href="http://www.scopus.com/inward/citedby.url?partnerID=HzOxMe3b&scp=84943279757&
  origin=inward"/>

```



## Summarize: Scopus APIs power advanced integration & visibility

**Scopus** provides a variety of **APIs** (Application Programming Interfaces) to power integration of Scopus into outside sites. They make excellent tools to help you **showcase your publications**, **build search widgets for library pages**, or **mash up Scopus citation data with data from other APIs**.

- They are free to use for non-commercial purposes, as long as you honor our [policies for content use through our APIs](#).
- You don't need to have a full subscription to Scopus to use our APIs, but if you have one, you'll be able to get more data from the APIs.
- If you work for, or on behalf of, an institution with a Scopus subscription you can request direct access to our APIs. For that, please register API key first and then [contact us](#)

**What are some common uses of Scopus APIs?**

### [Cited-by retrieval](#)

Retrieve the cited-by count for documents to incorporate into your website

### [Federated Search](#)

Integrate search results from Scopus and ScienceDirect into your Federated Search application

### See Examples:

- Scopus Citation Counts: <http://eprints.hud.ac.uk/6352/>
- Federated Search: Company Intranet, Sharepoint, & more.

# A few quick Cited-By API Integration Examples

**1**

The screenshot shows the PLOS ONE article page for "A Gateway MultiSite Recombination Cloning Toolkit" by Lena K. Petersen and R. Steven Stowers. The article has 10,686 views, 13 citations, and 65 saves. A "Cited" sidebar on the right lists integration options: SCOPUS (13), crossref (7), PMC (10), ISI Web of SCIENCE (10), Europe PubMed Central (11), Europe PubMed Central Database Citations (21), and Google Scholar (Search). The article title is highlighted in yellow in the navigation bar.

**2**

The screenshot shows the homepage of The HKU Scholars Hub (香港大學學術庫). The header includes the HKU logo and the text "The University of Hong Kong". The main title is "The HKU Scholars Hub 香港大學學術庫". A navigation bar at the bottom has four tabs: "Home", "Researchers", "Publications", and "Theses".

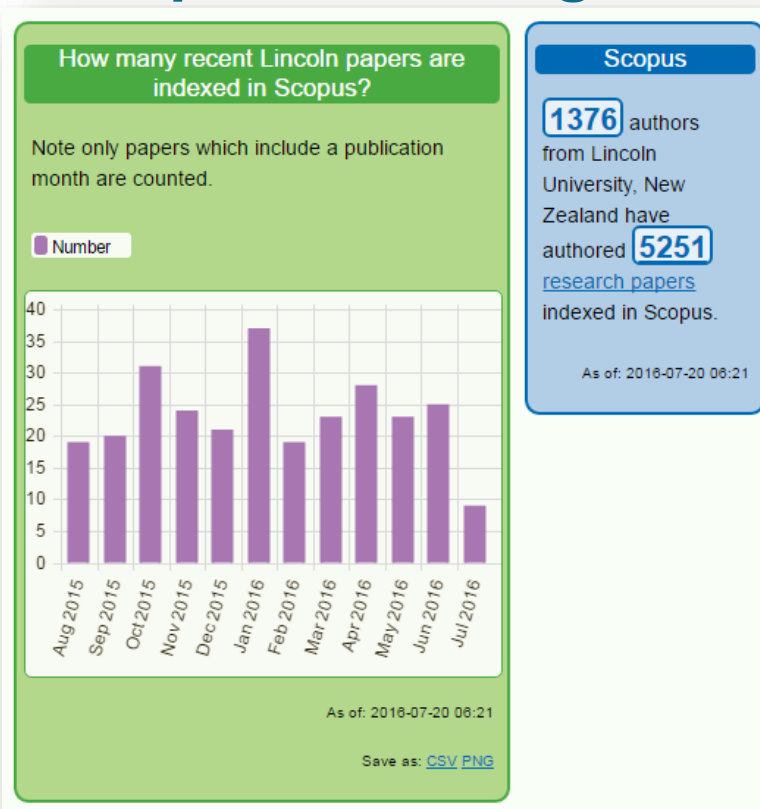
**Supplementary**

- Citations:
  - Scopus: [13](#)
- Item Statistics (The Hub)
- Appears in Collections:
  - Medicine: Journal/Magazine Articles
- Am score 1
- [See more details](#)
- Tweeted by 2
- On 1 Facebook pages
- 18 readers on Mendeley
- 0 readers on CiteULike

## Links

- PLOS One: <http://www.plosone.org/>
- HKU Scholars Portal: <http://hub.hku.hk/>

# Example of the Scopus API being used on a web page



<https://library2.lincoln.ac.nz/dashboard/>

# Example of the Scopus API being used on a web page

The screenshot shows the Nature journal website interface. At the top, there is a search bar with the text 'Search' and a 'Go' button. Below the search bar is a navigation menu with links for 'Home', 'News & Comment', 'Research', 'Careers & Jobs', 'Current Issue', 'Archive', 'Audio & Video', and 'For Authors'. A secondary navigation bar shows 'Archive', 'Volume 518', 'Issue 7539', 'Articles', 'Article', and 'Article metrics'. The main content area displays the article title 'Integrative analysis of 111 reference human epigenomes' and the authors: Roadmap Epigenomics Consortium, Anshul Kundaje, Wouter Meuleman, Jason Ernst, Misha Bilenky, Angela Yen, Alireza Heravi-Moussavi, Pouya Kheradpour, Zhizhuo Zhang, Jianrong Wang, Michael J. Ziller, Viren Amin, John W. Whitaker, Matthew D. Schultz, Lucas D. Ward, Abhishek Sarkar, Gerald Quon, Richard S. Sandstrom, Matthew L. Eaton, Yi-Chieh Wu, Andreas R. Pfenning, Xincheng Wang, Melina Claussnitzer, Yaping Liu, Cristian Coarfa, et al. Below the authors, the journal information is given as 'Nature 518, 317-330 (19 February 2015) | doi:10.1038/nature14248' and the last update time as 'Last updated: 20 July 2016 14:46:13 EDT'. The 'Article metrics for:' section is divided into two parts: 'Total citations' and 'Online attention'. 'Total citations' shows three circular icons: '111' for Web of Science, '309' for CrossRef, and '280' for Scopus. 'Online attention' shows a circular icon with '398' and a legend for 'Altmetric score (what's this?)' with the following breakdown: 'Tweeted by 129', 'On 13 Facebook pages', 'Mentioned in 21 Google+ posts', 'Picked up by 40 news outlets', and '1 Reddit'. A 'View more' link is located below the altmetric score.

Search  Go

► [Advanced search](#)

Home | News & Comment | Research | Careers & Jobs | Current Issue | Archive | Audio & Video | For Authors

Archive > Volume 518 > Issue 7539 > Articles > Article > Article metrics

Article metrics for:

Integrative analysis of 111 reference human epigenomes

Roadmap Epigenomics Consortium, Anshul Kundaje, Wouter Meuleman, Jason Ernst, Misha Bilenky, Angela Yen, Alireza Heravi-Moussavi, Pouya Kheradpour, Zhizhuo Zhang, Jianrong Wang, Michael J. Ziller, Viren Amin, John W. Whitaker, Matthew D. Schultz, Lucas D. Ward, Abhishek Sarkar, Gerald Quon, Richard S. Sandstrom, Matthew L. Eaton, Yi-Chieh Wu, Andreas R. Pfenning, Xincheng Wang, Melina Claussnitzer, Yaping Liu, Cristian Coarfa *et al.*

Nature 518, 317-330 (19 February 2015) | doi:10.1038/nature14248

Last updated: 20 July 2016 14:46:13 EDT

**Total citations**

111 Web of Science

309 CrossRef

280 Scopus

**Online attention**

Altmetric score (what's this?)

398

- Tweeted by 129
- On 13 Facebook pages
- Mentioned in 21 Google+ posts
- Picked up by 40 news outlets
- 1 Reddit

[View more](#)

<http://www.nature.com/nature/journal/v518/n7539/nature14248/metrics>

# Scopus APIs used in an Institutional Repository

authenticus  
publications · authors · institutions

Publications Researchers Institutions

Marked (0) Sign In

All Document Types 1979 - 2016 Year Desc

Confirmed Publications: 189

1 **TITLE:** Highlights of metal ion-based photochemical switches [Full Text](#)  
**AUTHORS:** Antonio Bianchi, Estefania Delgado Pinar, Enrique Garcia Espana, Claudia Giorgi, **Fernando Pina**  
**SOURCE:** COORDINATION CHEMISTRY REVIEWS, VOLUME: 260, ISSUE: 1, PUBLISHED: 2014  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID | ResearcherID

2 **TITLE:** Thermodynamics, Kinetics, and Photochromism of Oaklins: A Recent Family of Deoxyanthocyanidins  
**AUTHORS:** Andre Sousa, Vesselin Petrov, Paula Araujo, Nuno Mateus, **Fernando Pina**, Victor de Freitas  
**SOURCE:** JOURNAL OF PHYSICAL CHEMISTRY B, VOLUME: 117, ISSUE: 6, PUBLISHED: 2013  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID | ResearcherID

3 **TITLE:** A flash photolysis and stopped-flow spectroscopy study of 3',4'-dihydroxy-7-O-beta-D-glucopyranosyloxyflavylium chloride, an anthocyanin analogue exhibiting efficient photochromic properties [Full Text](#)  
**AUTHORS:** Vesselin Petrov, Raquel Gavara, Olivier Dangles, Sheiraz Al Bittar, Nathalie Mora Soumille, **Fernando Pina**  
**SOURCE:** PHOTOCHEMICAL & PHOTOBIOLOGICAL SCIENCES, VOLUME: 12, ISSUE: 3, PUBLISHED: 2013  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID | ResearcherID

4 **TITLE:** Thermodynamics and Kinetics of Cyanidin 3-Glucoside and Caffeine Copigments [Full Text](#)  
**AUTHORS:** Piedad M Limon, Raquel Gavara, **Fernando Pina**  
**SOURCE:** JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, VOLUME: 61, ISSUE: 22, PUBLISHED: 2013  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID | ResearcherID

5 **TITLE:** Impact of Water on the Cis-Trans Photoisomerization of Hydroxychalcones  
**AUTHORS:** Yoann Leydet, Pinar Babat, Gediminas Jonuskauskas, Sergey Denisov, Joao Carlos Lima, Jorge Parola, AJ, Nathan D McClenaghan, **Fernando Pina**  
**SOURCE:** JOURNAL OF PHYSICAL CHEMISTRY A, VOLUME: 117, ISSUE: 20, PUBLISHED: 2013  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID | ResearcherID

6 **TITLE:** Circular dichroism of anthocyanidin 3-glucoside self-aggregates [Full Text](#)  
**AUTHORS:** Raquel Gavara, Vesselin Petrov, Alexandre Quintas, **Fernando Pina**  
**SOURCE:** PHYTOCHEMISTRY, VOLUME: 88, PUBLISHED: 2013  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID

7 **TITLE:** Synthetic analogues of anthocyanins as sensitizers for dye-sensitized solar cells [Full Text](#)  
**AUTHORS:** Giuseppe Calogero, Alessandro Sinopoli, Ilaria Citro, Gaetano Di Marco, Vesselin Petrov, Ana M Diniz, Jorge Parola, AJ, **Fernando Pina**  
**SOURCE:** PHOTOCHEMICAL & PHOTOBIOLOGICAL SCIENCES, VOLUME: 12, ISSUE: 5, PUBLISHED: 2013  
**INDEXED IN:** Scopus WOS **IN MY:** ORCID

8 **TITLE:** Synthesis and characterization of luminescent room temperature ionic liquids based on Ru(tpy)(CN)<sub>4</sub>(2-) [Full Text](#)

1 Users Logged-in  
67 Anonymous Users

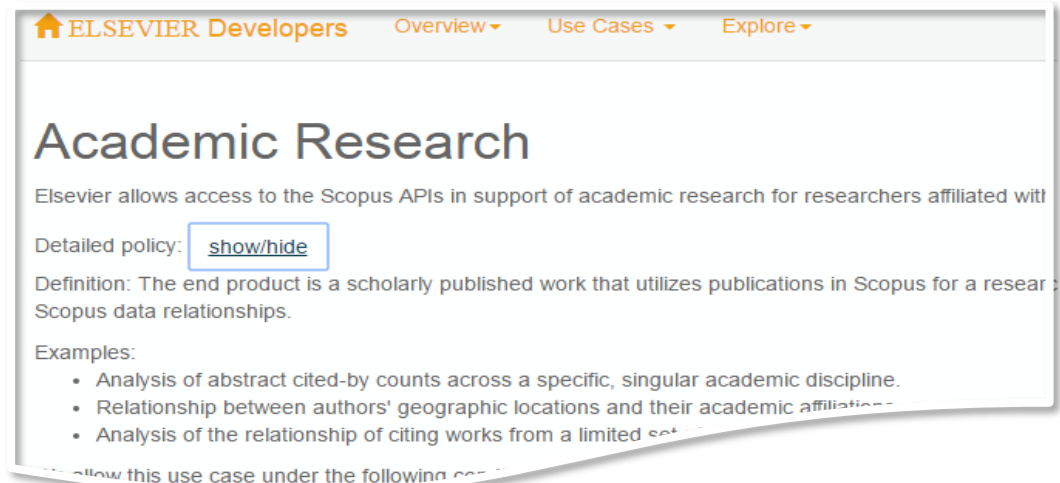
<https://www.authenticus.pt/>

# Scopus API for Academic Research

**Definition:** The end product is a scholarly published work that utilizes publications in Scopus for a research effort.

Examples:

- Analysis of abstract cited-by counts across a specific, singular academic discipline.
- Relationship between authors' geographic locations and their academic affiliations.
- Analysis of the relationship of citing works from a limited set of publications.



The screenshot shows the 'Academic Research' page on the Elsevier Developers portal. The page title is 'Academic Research'. Below the title, it states: 'Elsevier allows access to the Scopus APIs in support of academic research for researchers affiliated with...'. There is a 'Detailed policy:' section with a 'show/hide' button. The 'Definition:' section repeats the text from the slide: 'The end product is a scholarly published work that utilizes publications in Scopus for a research effort. Scopus data relationships.'. The 'Examples:' section lists three bullet points: 'Analysis of abstract cited-by counts across a specific, singular academic discipline.', 'Relationship between authors' geographic locations and their academic affiliations.', and 'Analysis of the relationship of citing works from a limited set of publications.'. The page also has a navigation bar with 'Overview', 'Use Cases', and 'Explore' dropdown menus.

# Scopus API for Academic Research

Full details: [dev.elsevier.com/academic\\_research\\_scopus.html](https://dev.elsevier.com/academic_research_scopus.html)

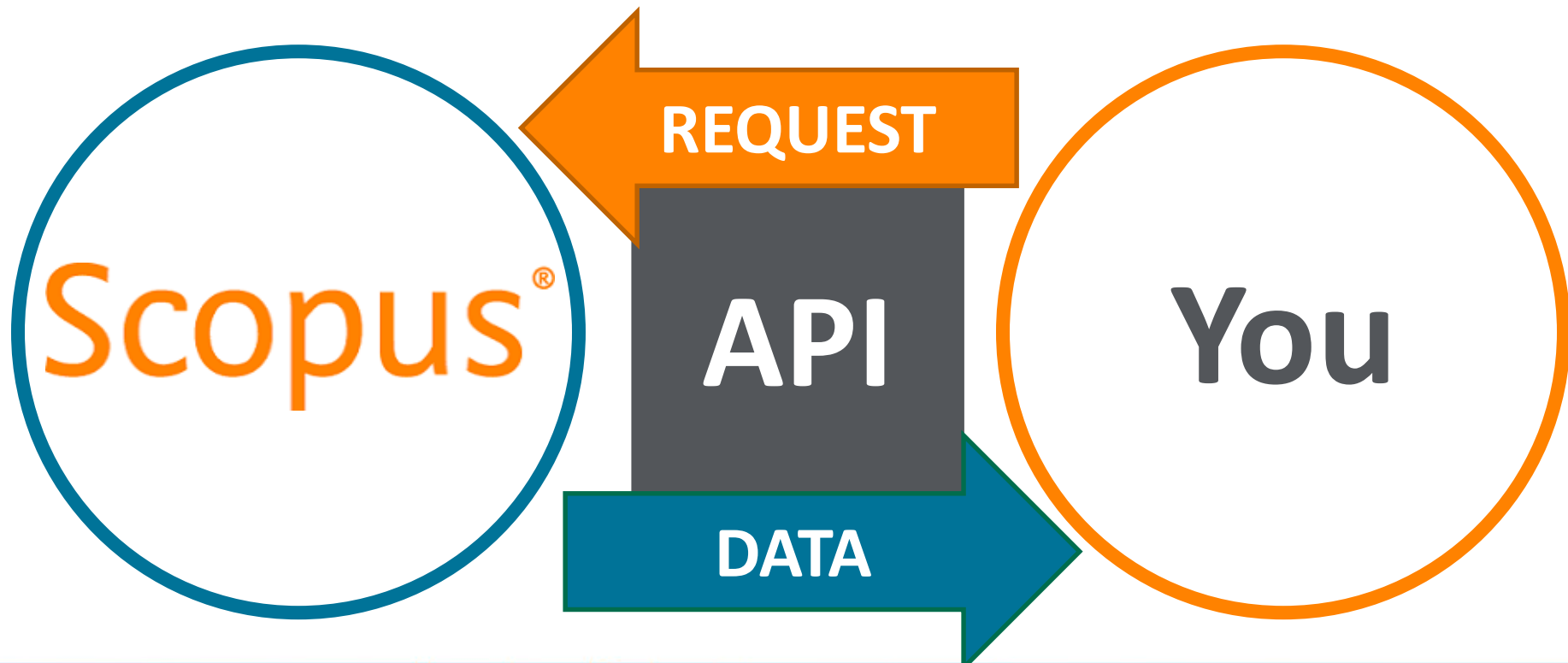
We ask researchers abide by the following conditions:

- Research is for academic purposes only & limited in scope to a specific discipline
- Retention of original research dataset is limited to archival purposes and reproduction of the research results.
- Scopus is identified as the data source.

IF YOU WANT TO USE SCOPUS DATA VIA API FOR ACADEMIC RESEARCH, PLEASE

1. VISIT [DEV.ELSEVIER.COM](https://dev.elsevier.com)
2. REVIEW ACADEMIC USE CASE DOCUMENTATION
3. REGISTER FOR AN API KEY AND
4. CONTACT US WITH ANY ACCESS OR USE QUESTIONS

Don't forget, APIs are just a way for computer applications and programs to talk to each other.





# Thank you!

