Data Integration to Support the Research Cycle

Foundational Resources from Thomson Scientific

ANKOS Meeting
April 24-25, 2008

Thomson Scientific
Director, Customer Education & Sales Support
Jeff.clovis@thomson.com
A history of cooperation with the research community

• Thomson Scientific has a valuable partnership with the Turkish research community ... providing the world’s most used information resources
• Our partnership over the past three years continues to grow
• Over 80 universities and 130 Hospitals access *ISI Web of Knowledge*
The *ISI Web of Knowledge* is anchored by Thomson Scientific premium core content, complemented by carefully selected partner content, and supported by powerful tools.

**Bibliographic Resources:**
- **Journal Literature:**
  - Web of Science (SCI, SSCI, AHCI)
  - Current Contents Connect
  - BIOSIS Previews
  - Biological Abstracts
  - Zoological Record
- **Patents:**
  - Derwent Innovations Index
- **Conferences/Proceedings:**
  - ISI Proceedings

**Bibliographic Tools:**
- EndNote
- Reference Manager
- ProCite
- RefViz

**Selected Partner Content:**
- INSPEC
- CAB Abstracts
- Food Science & Technology Abstracts
- MEDLINE

**Analytic Resources:**
- Journal Citation Reports
- Essential Science Indicators
- Custom Research Services
The Foundation


Quality

Sciences – to 1900, A Century of Science
Social Sciences – to 1956
Arts & Humanities – to 1975

Diversity

Coverage of over 230 disciplines in the Sciences, Social Sciences, and Arts & Humanities
Comprehensive coverage in all disciplines.

Depth

Journal selectivity, Cover-to-Cover Indexing, Diversity, Consistency, Depth.
Author Cited References for over 105 years

Unique Data

Web of Science®

Superior Collection Development
Comprehensive Coverage and Consistent Indexing

• Cover to cover Indexing assures no gaps in the literature
  – All document types applied consistently across all titles to ensure precise searching across disciplines

• Capture all cited references to articles in covered journals and to articles in journals not covered.
  – 35 million per year – consistently indexed - standardization

• Expert use of citation data help ISI identify important, influential, and useful publications.
  Measure use by analyzing citation data.
  In-house database allows us quickly to do this
  Editors are skilled at Cited Reference searching
  Science vs. Social Sciences & Arts & Humanities
Expanded Coverage in all areas of the Sciences, Social Sciences and Arts & Humanities

• Re-evaluation of Regional Literature in Context within the Region

• Selection of the most important regional literature
  – Total of 2,000 titles to be added over the next 3 years (2008-2010)
  – First 680 titles are in process
  – Ongoing review and evaluation – additional editorial staff
  – Consistent editorial standards and comprehensive indexing
Newly Added Turkish Titles

- Anadolu Kardiyoloji Dergisi-Anatolian Journal of Cardiology
- ANKARA UNIVERSITESI VETERINER FAKULTESI
- Diagnostic and Interventional RadiologyDERGISI
- EGITIM ARASTIRMALARI-EURASIAN JOURNAL OF EDUCATIONAL RESEARCH
- Eklemler Hastaliklari ve Cerrahisi-Joint Diseases and Related Surgery
- Experimental and Clinical Transplantation
- Mediterranean Journal of Otology
- METU JOURNAL OF THE FACULTY OF ARCHITECTURE
- MIKROBIYOLOJI BULTENI
- MILLI FOLKLER
- Nobel Medicus
- TEKNIK DERGI
- Tekstil ve Konfeksiyon
- TURKISH JOURNAL OF AGRICULTURE & FORESTRY
- TURKISH JOURNAL OF BIOLOGY
- TURKISH JOURNAL OF GASTROENTEROLOGY
- Turkish Journal of Mathematics
- TURKISH JOURNAL OF MEDICAL SCIENCES
- Turkiye Klinikleri Tip Bilimleri Dergisi
Ongoing Quarterly Upgrades and New Features/Tool

• Visualization Tools
  – Incorporation of New Technologies

• New Creations of Resources
  – BIOSIS Previews and Biological Abstracts
  – Proceedings Citation Index

• *ISI Web of Knowledge* – a new version in late 2008-early 2009
Supporting the Research Cycle

- Acquire Research Funding
- Conduct Research
- Evaluate Outcomes
- Promote Research Accomplishments
- Publish
Patents: Importance as Intellectual Property

In recent years, governments and academic institutions worldwide have strongly encouraged those within academic and “traditional” research environments to look toward potential technology transfer, patenting the results of research.

We know that today, an ever expanding number of researchers within academia are in fact involved in efforts to patent their work.

This group requires access to patent literature for:
- The sheer value of the scientific content it holds
- An absolutely necessary awareness of “prior art”
Patents: Importance as a Scientific Resource

- Patent literature is the largest single body of technical information available anywhere. There are over 30 million existing published patents in the world today, and each year an average of one million new patents are filed.

- A patent gives full disclosure of all details of an invention: descriptions, drawings, diagrams, chemical structures, genetic sequences, etc.

- A patent is often the first place scientific and technical information is reported – key Current Awareness Value

- A great volume of the information reported in patents is unavailable elsewhere.

**Information within the patent literature should not be overlooked in the course of the research process.**
Derwent Innovations Index℠:
The Key – Derwent Value-Added Information.

Patent Family Records – Grouping of related patents into a family record to illustrate the global coverage of the invention.

Patent Assignee Codes – assigned to about 21,000 organizations worldwide, unifying parent companies and subsidiaries.

Key Drawings and Images selected and included

Derwent Classification and Manual Codes – providing uniform, accurate indexing; enabling precise retrieval for those with more expertise in patent literature.

Derwent Value-Added data greatly improves the ability to retrieve and understand relevant patent information.

Derwent full value-added records for all patents from the key major patenting authorities are added to DWPI, the key source of Derwent Innovations Index data, within 30 days of the date the patent is published.

This value-added information is unavailable within free patent resources.
Web of Science results for Light Emitting Organic Thin Films

There are very few corporations publishing the results of their thin films research in journals.
However, there have been many patents published in this area since 2001.
Derwent Innovations Search

Derwent Innovations Index

Search for:

organic and Thin film* in Topic

Example: "sol gel" AND polymer* in Inventor

AND

Example: Von Oepen R or Oopen R V in Patent Number

AND

Example: EP797246 or US5723945-A in Patent Number

Add Another Field >>

Search  Clear
Electroluminescent device - comprises anode, organic hole injecting and transporting zone, luminescent zone contg. fluorescent material, and cathode

Inventor(s): TANG C W, CHEN C H, GOSWAMI R, TANG C
Patent Assignee(s) and Codes(s): EASTMAN KODAK CO (EAST-C)
Derwent Primary Accession Number: 1988-251938 [23]

Abstract: An electroluminescent device comprises, in order, an anode; an organic hole injecting and transporting zone; a luminescent zone; and a cathode, the luminescent zone being formed by a thin film of less than 1 micrometre thickness comprised of an organic host material (I) capable of sustaining both hole and electron injection and a fluorescent material (II) capable of emitting light in response to hole-electron recombination.
### Articles Cited by Examiner

**Title:** Electroluminescent device - comprises anode, organic hole injecting and transporting zone, luminescent zone contg. fluorescent material, and cathode  
**Assignee(s):** EASTMAN KODAK CO  
**Inventor(s):** TANG C W, CHEN C H, GOSWAMI R, et. al

<table>
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<tr>
<th>Citing Patent</th>
<th>Category Codes</th>
<th>Cited Articles</th>
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Proceedings literature is an essential component of international scholarly communication.

New theories, solutions, and indications of emerging and developing concepts are typically presented first within papers delivered at scientific and scholarly meetings and conferences.
ISI Proceedings

- Two editions, both covering 1990 - present
  - **Science & Technology**
  - **Social Sciences & Humanities**
- Weekly updates
- “one-off” proceedings in book or book series form, monographic sources, account for approximately 70% of content.
- Journal sources account for the remaining approximate 30% of content.
  - This material, journal-based proceedings literature, is also indexed in the Web of Science. Full-record to full-record links as well as additional citation navigation links exist for these articles between the two databases.
**ISI Proceedings – the same intuitive search**

**ISI Web of Knowledge**

*Take the next step*

**All Databases** | **Select a Database** | **ISI Proceedings** | **Additional Resources**
---|---|---|---
Search | Advanced Search | Search History | Marked List (0)

**ISI Proceedings**

Search for:

- `global warming`
  
  Example: `oil spill* AND "North Sea"`

- `O'Brian C* OR O'Brian C*`
  
  Example: `Cancer* OR Journal of Cancer Research and Clinical Oncology`

Add Another Field >>

**Search** | **Clear**

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Concise Summary Results

Results: 2,250

Refine Results
Search within results for

Subject Areas
- ENVIRONMENTAL SCIENCES (423)
- METEOROLOGY & ATMOSPHERIC SCIENCES (253)
- GEO SCIENCES, MULTIDISCIPLINARY (225)
- ENGINEERING, ENVIRONMENTAL (187)
- ENERGY & FUELS (168)

Document Types
- ARTICLE (1,677)
- PROCEEDINGS PAPER (545)
- MEETING ABSTRACT (14)
- REVIEW (10)
- EDITORIAL MATERIAL (4)

1. Title: Exergetic optimization of generated electric power split in a heat pump coupled p
   Author(s): Kilikis, BI, Kilikis, S
   Source: PROCEEDINGS OF THE ENERGY SUSTAINABILITY CONFERENCE 2007  Pages: 211

2. Title: Role of coal utilization technologies for sustainable society
   Author(s): Naruse, I
   Conference Information: 6th International Symposium on Coal Combustion, DEC 01-04, 20
   Source: PROCEEDINGS OF THE 6TH INTERNATIONAL SYMPOSIUM ON COAL COMBUSTION

3. Title: The preparation of nano size metal oxide catalysts for direct decomposition of N2
   and anodized aluminium oxide
   Author(s): Park, S, Park, M, Deshwal, BR, et al.
   Conference Information: 6th International Symposium on Coal Combustion, DEC 01-04, 20
   Source: PROCEEDINGS OF THE 6TH INTERNATIONAL SYMPOSIUM ON COAL COMBUSTION

4. Title: Development of optimal supercritical condition in the CO2 aqueous sequestration
   Author(s): Lee, J, Xu, LH, Kim, H
   Conference Information: 6th International Symposium on Coal Combustion, DEC 01-04, 20
Seasonal variation of carbon dioxide and methane fluxes at single cropping paddy fields in central and western Japan

Author(s): Miyata, A; Iwata, T; Nagai, H; Yamada, T; Yoshikoshi, H; Mano, M; Ono, K; Han, GH; Harazono, Y; Ohtaki, E; Baten, MA; Inohara, S; Takimoto, T; Saito, M

Source: PHYTON-ANNALES REI BOTANICAE Volume: 45 Issue: 4 Special Issue: Sp. Iss. SI Pages: 89-97 Published: 2005

Abstract: Based on the results of long-term flux measurement at two paddy flux sites, Mase (MSE) in central Japan and Hachihama (HCH) in western Japan, we present seasonal variation of carbon dioxide (CO2) and methane (CH4) exchanges between single rice cropping paddy fields and the atmosphere in 2003. CO2 flux was measured by the eddy covariance method at the two sites, while CH4 flux was measured at MSE site by the modified aerodynamic method. Net ecosystem CO2 exchange (NEE) in the 2003 growing period showed a distinct seasonal variation with rice growth, and reached the maximum daily CO2 uptake of 9.2-9.5 g C m(-2) d(-1) in the middle growing period. The total NEE in the growing period at HCH site was more negative than that at MSE site by 84 g C m(-2).
Evaluate Outcomes

- Enhance faculty review activities with quality citation, along with citation metrics that provide more sophisticated evaluation
- Notify administrative offices of tools for citation analysis, available in formats designed for analysis
- Use citation data on the institutional, as well as researcher, level to help compare to other institutions
- Enhance this evaluation activity with patent data
- Thomson Scientific data is used for national-level evaluations around the world, including NSF, EU, OECD, etc.
Research Evaluation

• Although the main objective of the *Web of Science* is intended to aid researchers to retrieve information, the data it provides can also be used for research evaluation.
  – Count Papers \(\rightarrow\) measure productivity
  – Count Citations \(\rightarrow\) measure *utility* and *influence*

• Based on the premise that if an article has been cited then it can be said to have influenced the citing work, the higher the citation count the greater the influence.

• This concept can be extended to evaluate individuals, institutions or countries.

• However, systematic analysis is very time consuming and often impractical for large data sets. Furthermore, simple metrics are different to interpret without contextual reference or comparison.
• Thomson Scientific provides many services to help perform accurate and effective research evaluation

• Our customized data sets and software make it possible to do large scale citation analysis, empower the user to put the statistics into context and make comparisons with peers.
Thomson Scientific offers solutions that transform citation data into meaningful evaluation statistics for decision makers.

“My paper has been cited 50 times, how does this compare to other papers published in my field?”
Research Evaluation – Allocate Research Funds Wisely

Identify areas that you are not focusing on, but that have high impact. These could be areas for increased funding, faculty, lab space, etc.

At this university, Microbiology ranks 19th in paper output with 98 papers.

Here is the citation impact of the fields, compared to the worldwide field averages.

Microbiology ranks 4th in this school in terms of the research’s impact in its field.

Source: University Science Indicators, Thomson Scientific, Research Services Group
Research in Turkey
Research in Turkey – Citation Impact

Citation Impact

- 1991-1995
- 1996-1999
- 2000-2004
- 2001-2005
Measure the number of papers per university (top 50)
Also show the number of citations per university
Citation Impact and # of papers compared to the world
Supporting the Research Cycle

1. Acquire Research Funding
2. Conduct Research
3. Promote Research Accomplishments
4. Evaluate Outcomes
5. Publish
Thank you!

Questions?

ANKOS Meeting 2008

Jeff Clovis
Thomson Scientific
jeff.clovis@thomson.com