



Current Comments®

EUGENE GARFIELD

INSTITUTE FOR SCIENTIFIC INFORMATION®
3501 MARKET ST., PHILADELPHIA, PA 19104

**New Chemistry Citation Index on
CD-ROM Comes with Abstracts,
Related Records, and KeyWords Plus**

Number 3

January 20, 1992

Two weeks ago, I introduced you to the new Biotechnology and Neuroscience Citation Indexes on CD-ROM.¹ These are two of the fastest growing fields of research worldwide. However, we also launched recently the *Chemistry Citation Index™* (*CCI™*). The *CCI* complements the work that ISI® has been doing for more than 30 years in producing *Index Chemicus*®² and *Current Chemical Reactions*®.³

The rationale for producing the *Chemistry Citation Index* on compact disk is similar to that explained earlier for the *Biotechnology Citation Index™* (*BCI™*) and the *Neuroscience Citation Index™* (*NCI™*). While most universities receive the *Science Citation Index®* (*SCI®*), it is generally not available in chemistry departments in academic, government, and industrial institutions.

Chemistry Citation Index' s Scope

The *CCI* coverage is extensive and includes more than 330 core chemistry journals that are completely covered. In addition, thousands of articles are selectively culled from the 4,000 plus other journals in our database. All areas of chemistry, including organic, inorganic, analytical, and physical chemistry are included. In addition, polymer, computational, organometallic and materials chemistry, and electrochemistry are covered.

The *CCI* also contains selective coverage in the area of biochemistry. For example, articles from biochemistry journals covering structure identification and analysis, physical properties and their measurement, chemical reactivity, reaction rate and mechanism, synthesis, and stereochemistry are included.

Also included are articles in biochemistry journals that describe the use of analytical tools—such as calorimetry, spectroscopy, gas and liquid chromatography, and nuclear magnetic resonance—all of which measure chemical properties. The only area really not covered is chemical engineering, or the large-scale manufacturing of chemical substances. Microbiology, cell processes, and genetic engineering are covered in the *Biotechnology Citation Index*, which is totally compatible with the *CCI*.

Citation Indexing in Chemistry

In the early days of the *SCI*, I often described the advantages of citation indexing in chemistry.⁴⁻⁶ Many of my first search examples were based on my experience as a chemist. But there have been others who have demonstrated the unique powers of citation retrieval in chemistry.^{7,8}

Recently, W. Todd Wipke of the University of California, Santa Cruz, extolled the advantages of citation indexing for information retrieval in chemistry, particularly in connection with searching chemi-

V3.02 ——— Chemistry Citation Index (Jan 91 - Oct 91) ——— D3.5

-Help
-Database
-Search
-RESULTS
-Quit

Set 1: Citation
 PAQUETTE-LA-1983-J-AM-CHEM-SOC-U105-P5446

Records: 1 of 10

Blankespoor-RL DeJong-RL Dykstra-R Hamstra-DA Rozema-DB Unneurs-DP
 Vink-P

Photochemistry of 1-Alkoxy and 1-(Benzyloxy)-9,10-Anthraquinones in
 Methanol - A Delta-Hydrogen Atom Abstraction Process That Exhibits a
 Captodative Effect (English) => Article

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY
 Vol 113 Iss 9 pp 3507-3513 1991 (FJ121)

Related Records: 20 Cited References: 35

<PgDn>

RelatedRecords
citedRefs
abstract/Keywords
Addresses
View
Collect
Print
Save

Figure 1A. Sample cited reference search on 1983 article by L.A. Paquette, "The Total Synthesis of Dodecahedrane." The display shows the first of 10 records citing the article.

Addresses: 1 Press ESC to leave address display.

CALVIN-COLL, DEPT CHEM, GRAND-RAPIDS, MI 49546, USA

Figure 1B. Address record for R.L. Blankespoor et al.

V3.02 ——— Chemistry Citation Index (Jan 91 - Oct 91) ——— D3.5

-Help
-Database
-Search
-RESULTS
-Quit

Set 1: Citation
 PAQUETTE-LA-1983-J-AM-CHEM-SOC-U105-P5446

Records: 3 of 10

Mehta-G Nair-MS Reddy-KR

<PgUp>

Synthesis of Spheroidal C20-Polyquinanes in a Route Towards Dodecahedrane
 (English) => Article

JOURNAL OF THE CHEMICAL SOCIETY-PERKIN TRANSACTIONS I
 Iss 5 pp 1297-1307 1991 (FM107)

Related Records: 20 Cited References: 26

<PgDn>

RelatedRecords
citedRefs
abstract/Keywords
Addresses
View
Collect
Print
Save

Figure 1C. Third of 10 records citing Paquette paper. It makes reference to the Dodecahedrane compound.

U3.02 ——— Chemistry Citation Index (Jan 91 - Oct 91) ——— D3.5

Help
 Database
 Search
 References
 Quit

Set 1: Citation
PAQUETTE-LA-1983-J-AM-CHEM-SOC-U105-P5446
Records: 5 of 10

Marchand-AP <PgUp>

Polycyclic Cage Compounds as Intermediates in Organic-Synthesis
(English) => Article

SYNLETT
Iss 2 pp 73-79 1991 <EX952>

Related Records: 20 Cited References: 68

<PgDn>

RelatedRecords
 citedRefs
 abstract/Keywords
 Addresses
 View
 Collect
 Print
 Save

Figure 1D. Fifth of 10 records citing Paquette. Note link to Polycyclic Cage Compounds.

U3.02 ——— Chemistry Citation Index (Jan 91 - Oct 91) ——— D3.5

Help
 Database
 Search
 References
 Quit

Parent Record: 5 of 10
Marchand-AP Polycyclic Cage Compounds as Intermediates in Organic-Synthesis
Related Records: 1 of 20 (Level 1)

Mehta-G Rao-KS Reddy-MS

Synthetic Approach to Novel Crinipellin Diterpenes - Construction of the
Functionalized C20-Tetraquinane Framework (English) => Article

JOURNAL OF THE CHEMICAL SOCIETY-PERKIN TRANSACTIONS I
Iss 4 pp 693-700 1991 <FG571>

Related Records: 20 Cited References: 24 Shared References: 7

<PgDn>

RelatedRecords
 citedRefs
 sharedRefs
 abstract/Keywords
 Addresses
 View
 Collect
 Print
 Save
 MakeSet

Figure 1E. The first of 20 Related Records for A.P. Marchand (Figure 1D), which might provide additional information on synthetic techniques for polycyclic structures.

cal reactions and their applications and modifications.⁹

Indeed, Todd was commenting on what he and our deceased ISI colleague George Vladutz had reported in 1990 in a paper on

reaction similarity through citation analysis.¹⁰ In the search example from the *CCI* (see Figure 1), it can be seen that title word search would be inadequate in rapidly finding papers associated with a particular

```

Press 4 to search on highlighted reference.
Press ESC to leave shared reference display.
Shared References: 7
-----
GRITESBECK-AG-1990-CHEM-BER-U123-P549
MEHTA-G-1981-J-CHEM-SOC-CHEM-COMM-P756
MEHTA-G-1981-TETRAHEDRON-U37-P4543
MEHTA-G-1982-J-CHEM-SOC-CHEM-COMM-P540
MEHTA-G-1983-J-CHEM-SOC-CHEM-COMM-P824
MEHTA-G-1986-J-AM-CHEM-SOC-U108-P3443
MEHTA-G-1989-TETRAHEDRON-U45-P2743

```

Figure 1F. Display screen showing seven references shared by Marchand (Figure 1E) and G. Mehta.

```

U3.02 ----- Chemistry Citation Index (Jan 91 - Oct 91) ----- D3.5
  [F1]-Help   [F2]-Database   [F3]-Search   [F4]-Results   [F5]-Quit
Parent Record: 5 of 10
Marchand-AP Polycyclic Cage Compounds as Intermediates in Organic-Synthesis
----- Related Records: 2 of 20 ----- (Level 1)
Thummel-RP
The Synthesis and Properties of Organized Polyaza Cavity-Shaped Molecules
(English) => Article
TETRAHEDRON
Vol 47 Iss 34 pp 6851-6886 1991 (GE996)
-----
Related Records: 20   Cited References: 97   Shared References: 6
-----
[RelatedRecords]  [citedRefs]  [sharedRefs]  [abstract/Keywords]  [Addresses]
  View             Collect       Print         Save           MakeSet

```

Figure 1G. Second related record to Marchand identifies a 1991 review article by R.P. Thummel, which describes cavity-shaped molecules with heterocyclic structures containing nitrogen. The original Paquette paper (Figure 1A) described a caged carbocycle.

chemical reaction or, at the least, would involve searching through many unrelated papers.

Searching on the basis of chemical nomenclature has always had inherent problems, but you will be surprised how these difficulties are overcome in *Related Records*TM searching.

We would expect that most chemistry departments would continue to use either *Index Chemicus* and/or *Chemical Abstracts* (CA) to begin a search. Depending upon the topic, each could be used to augment

the other. Having found a starting reference, the *CCI* is the next logical step.

One of the main advantages of the *CCI* is the access it gives the user to the most recent information available. Updated every other month with a year-to-date cum, this service provides data three months sooner than any other source available. Each annual cumulation supersedes the interim indexes.

Of course, our regular features—searchable abstracts, *KeyWords Plus*TM, and *Related Records*—are included. The exclu-

sive ISI *KeyWords Plus* feature, in addition to title and author-supplied words, identifies recurring words or phrases in a paper's list of cited references. I have described this feature in detail in past essays.^{11,12} *Related Records* is a navigational tool that displays articles sharing one or more references in common (see Figure 1). Using these tools, the researcher, for example, can determine how a recent discovery was confirmed, applied, improved on, extended, or corrected.

The *CCI*, presently only available for IBM compatible PCs and NECs, sells for

\$1,950 a year. A free trial is available. Write Institute for Scientific Information, 3501 Market Street, Philadelphia, PA 19104. Or call 1-800-336-4474. In Europe, Africa, and the Middle East call +44-895-270016. Also, Fax (215) 386-6362.

* * * * *

My thanks to Paul R. Ryan and Eric Thurschwell for their help in the preparation of this essay.

©1992 ISI

REFERENCES

1. **Garfield E.** The new biotechnology and neuroscience citation indexes on CD-ROM include abstracts and increased coverage. *Current Contents* (1):3-8, 6 January 1992.
2. ----- Chemical information for the man who has everything. *Current Contents* (16):5-7, 17 April 1978. (Reprinted in: *Essays of an information scientist*. Philadelphia: ISI Press, 1980. Vol. 3. p. 465-7.)
3. ----- Introducing *Current Chemical Reactions*. *Current Contents* (2):5-8, 8 January 1979. (Reprinted in: *Ibid.*, 1981. Vol. 4. p. 12-5.)
4. **Sher I H & Garfield E.** Index searching. *Chem. Eng. News* 42:4, 1964.
5. **Garfield E.** Patent citation indexing and the notions of novelty, similarity, and relevance. *J. Chem. Doc.* 6:63-5, 1966. (Reprinted in: *Essays of an information scientist*. Philadelphia: ISI Press, 1985. Vol. 7. p. 536-42.)
6. ----- The information implosion. *Chemistry* 41:24-31, 1968.
7. **Burger A.** Science Citation Index. *J. Med. Chem.* 7:690, 1964.
8. **Cawell A E.** Citations in chemistry. *Chem. Brit.* 6:414-6, 1970.
9. **Wipke W T.** *The power of selective reaction databases*. Paper presented to the American Chemical Society, 26 August 1991. New York. CINF 0009, Fourth Chemical Congress of North America, New York, NY, August 25-30, 1991.
10. **Wipke W T & Vladutz G.** An alternative view of reaction similarity: citation analysis. *Tetrahedron Comput. Methodol.* 3:83-107, 1990.
11. **Garfield E.** *KeyWords Plus*: ISI's breakthrough retrieval method. Part 1. Expanding your searching power on *Current Contents on Diskette*. *Current Contents* (32):5-9, 6 August 1990.
12. ----- *KeyWords Plus* takes you beyond title words. Part 2. Expanded journal coverage for *Current Contents on Diskette* includes social and behavioral sciences. *Current Contents* (33):5-9, 13 August 1990.