# Research Alert – A Case Study

**A Hariharan**

**Mymoon Moghul**

**and**

**Chitra M Hariharan**

Structural Engineering Research Centre Library

CSIR Campus, Taramani, Chennai 600 113

email: *liba@sercm.csir.res.in*

## Abstract

This paper describes the SDI service, Research Alert, developed in-house at the Structural Engineering Research Centre (SERC) Library. The library provides print as well as electronic versions of the service. The alert service is provided to other institutions and companies as well. The database contains about 45,000 articles with abstracts.

## 1      Introduction

The Structural Engineering Research Centre (SERC) is one of the national laboratories under the Council of Scientific & Industrial Research (CSIR).

SERC acts as a clearinghouse for the latest available knowledge in the area of structural engineering and related fields and develops know-how on design and construction of all types of structures. It undertakes application-oriented research in all aspects of structural engineering – both design and construction, including rehabilitation of structures, and provides design consultancy services to organisations in the public and private sectors for developing a variety of structural designs. The Centre also organises specialised courses on structural engineering for the benefit of practicing engineers to familiarize themselves with the latest developments in analysis, design and construction.

The SERC Library has been set up on modern lines to provide library and information services to meet the objectives of the Centre. Library membership is also open to the students, faculty members, public and private sectors, etc.

## 2      Collection

The Library boasts of an excellent collection in the field of structural engineering and related subjects covering large numbers of books, technical reports, conference proceedings, back volumes, standards, microfiche, and CDs.

The library subscribes to more than 75 foreign and 50 Indian periodicals. The annual budget for the Library is over thirty lakhs.

Library functions – house keeping and information storage and retrieval have been automated. The Computer Centre has developed the software in-house, with inputs from the Library.

## 3      Research alert

Since the functioning of the Library in its new premises (1991), Research Alert is being offered as an in-house alert service primarily to cater to the needs of the engineer scientists of the Centre. Core periodicals being received in the library (Appendix I) have been identified for this service. Articles from these periodicals are keyed into the database regularly. These articles are grouped under 21 main areas covering the core R & D areas of the Centre. (Appendix II) and issues were generated.

Each issue has the following sections:
- Contents page
- Main part ( list of articles  from each issues - journal wise)
- Area code index
- Latest additions  (during the period covered)

Initially hard copies of the alert service were distributed every fortnight, one copy to every project. Periodical feedback from the users has lead to improvement in the service.

With the establishment of the LAN in the campus (1996), the electronic version of the Research Alert is made available on the campus network. Scientist engineers of the Centre had access to Research Alert through telnet from their respective desktop computers. (*Fig.1*)

There has been a pressing demand from academic and industrial communities for this service, with a willingness to subscribe to the same. Research Alert is now being offered as a monthly service, on a subscription basis, since 1997.There are about 50 subscribers throughout India. The clientele include colleges, Ph.D. scholars, academicians, government organisations, public sector undertakings, institutions from the industry, private consultants etc. This locally created online database now contains about 45,000 journal articles with abstracts.

## 4      Web OPAC

A web based interface to search the Research Alert database on the campus Intranet , was the next step. The then existing software allowed search through telnet only.

AutoLib - a Windows based commercially available software has been installed in the Library in December 2001. This is a multi-user LAN software on Windows 2000 server with MS-SQL 2000 server as back-end database. The database has been imported into the new system. A WEB OPAC module facilitates search on the intranet/internet environment. Users have seamless access to the Research Alert database from any workstation that is connected to the campus LAN. In house studies has shown that this service is extensively being used.

## 5      Search facilities

The database can be searched using any one or combination of the following fields

- Author
- Title of the article
- Journal
- Volume No
- Issue No
- Month
- Year
- Area code index
- Subject
- Keywords

{Appendix III Simple search module; Appendix IV & IVa Web OPAC (Simple search)}.

An advanced **Query Builder** is also available in the software to search the database. {Appendix V & Va – Query Builder (Advanced search)}. This allows the user to search the database by selecting the :

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- *Desired field(s) from the field list (author, title, journal, keyword, subject, year, etc)*

- *Search criteria (starting, like, word, >, <. between, etc )*

- *Search string*

- *Boolean operator (AND, OR, NOT)*

- *Desired sort order*

The software also allows the user to search the database by selecting the desired author/keyword from a master author/keyword list.

Photocopying services have increased several fold over the years with the introduction of the SDI service.

## 6      Future plans

Due to the growing demand for this specialized database, future plans include making the database available on the Internet, initially for the subscribers only, through the SERC Library web site.

## 7      Hardware and Software Used

**IBM NETFINITY SERVER**

Server                   Intel Pentium III Processor @ 800 MHz, 256KB(L2) Cache
                         memory
                         512 MB 133 MHz ECC RAM
                         4*91 GB Ultra 160 MBPS slim SCSI hard disk
                         1.44 MB FDD/40X CD-ROM/HP DAT drive
                         IBM Netfinity server RAID-4L, Ultra 160
                         1" BM SVGA colour monitor,

|                     | 10/100 MBPS Ethernet adapter          |
| ------------------- | ------------------------------------- |
| OS                  | Windows 2000 server                   |
| RDBMS               | MS-SQL server 2000                    |
| Web Server          | IIS Web server                        |
| Library software:   | AutoLib - Library Automation Software |

## 8      Conclusion

Abstracts created from the local collections help the engineer scientists obtain a wider overview of the scholarship in their fields of interest. The advantages of creating this specialised bibliography is that it has been started from scratch offering a comprehensive subject indexing and the addition of an abstract along with subject coding to suit "local flavour".

The introduction of the SDI service has also helped a thorough usage of locally available information that may have otherwise been missed out. It has created users outside the institution, increased visibility and prestige. Incidentally it is also a source of revenue.

Yet another important reason for online content creation has to do with "professional satisfaction" – driven by the ever guiding laws of library science emphasizing the need to use the library documents to the fullest extent, and in providing the right user with the right information at the right time.

Appendix I

**List of Journals included in the Research Alert**

1. ACI Materials Journal
2. ACI Structural Journal
3. Advanced Engineering Informatics (Artificial Intelligence in Engineering)
4. Advances in Engineering Software
5. Applied Mechanics Review
6. Architectural Science Review
7. Cement & Concrete Research
8. Cement, Concrete and Aggregates
9. Cement, Concrete and Composites
10. Civil Engineering  - ASCE
11. Civil Engineering & Construction Review
12. Communication in Numerical Methods in Engineering
13. Computer Aided Civil and Infrastructure Engineering
14. Computer Methods in Applied Mechanics & Engineering
15. Computers and  Structures
16. Concrete
17. Concrete Construction - ICI
18. Concrete Engineering International
19. Concrete International
20. Concrete Products
21. Construct in Steel
22. Construction Materials Purchase
23. CTI Journal
24. Earthquake Engineering and structural Dynamics
25. Engineering Computations
26. Engineering Failure Analysis
27. Engineering Journal
28. Engineering Structures
29. Engineering with Computers
30. Experimental Mechanics
31. Experimental Techniques
32. Fatigue & Fracture of Engineering Materials  & Structures
33. Finite Elements in Analysis and Design
34. Indian Geotechnical Journal
35. International Journal of Fatigue
36. International Journal of Impact Engineering.
37. International Journal of Numerical Methods in Engineering
38. International Journal of Pressure Vessels and Piping
39. Journal of Sound and Vibration
40. Journal of Bridge Engineering - ASCE
41. Journal of Composites for Construction - ASCE
42. Journal of Computing in Civil Engineering - ASCE
43. Journal of Construction Engineering and Management - ASCE
44. Journal of Constructional Steel Research

45. Journal of Engineering Mechanics - ASCE
46. Journal of Geotechnical and Geoenvironmental Engineering - ASCE
47. Journal of Materials in Civil Engineering - ASCE
48. Journal of Ship Research
49. Journal of Strain Analysis for Engineering Design
50. Journal of Structural Engineering – ASCE
51. Journal of Testing and Evaluation – ASTM
52. Journal of the Institution of Engineers(INDIA): Civil Engineering
53. Journal of Wind Engineering and Industrial Aerodynamics
54. Magazine of Concrete Research
55. Marine Technology
56. Materials and Structures
57. New Building Materials & Construction World
58. Parallel Computing
59. Practice Periodical on Structural Design and Construction - ASCE
60. Probabilistic Engineering Mechanics
61. Proceedings of the Institution of Civil Engineering : Structures and Building(U.K)
62. Proceedings of the Institution of Civil Engineering : Civil Engineering(U.K)
63. Smart Materials and Structures
64. Soil Dynamics and Earthquake Engineering
65. Steel and Composite Structures
66. Steel Construction
67. Structural Concrete - Journal of the FIB
68. Structural Engineering and Mechanics
69. Structural Engineering International
70. Structural Safety
71. The Bridge and Structural Engineer
72. The Indian Concrete Journal
73. The Structural Engineer
74. Transactions of the ASME : Journal of Applied Mechanics
75. Transactions of the ASME : Journal of Offshore Mechanics and Arctic Engineering
76. Transactions of the ASME : Journal of Vibration and Acoustics
77. Transactions of the Royal Institute of Naval Architects (RINA)
78. UNICIV Reports
79. Wind and Structures

Appendix – II

<u>Areas Codes</u>

01     Foundation Engineering & Soil Mechanics
02     Structural Concrete
03     Composites and Concrete Composites
04     Structural Forms
05     Steel Structures
06     Offshore Structures
07     Tall Structures, Cooling Towers
08     Ship Structures
09     Underground Structures
10     Other Structures
11     Wind Engineering
12     Construction Engineering
13     Structural Dynamics
14     Experimental Mechanics
15     Numerical Methods and Software
16     Methods of Analysis
17     Reliability, Stochastic Analysis, Expert Systems
18     Mechanics of Solids & Fluids
19     Corrosion
20     Fatigue, Fracture, Failure
21     Architecture, Town & Country Planning

Appendix IIa

**<u>Sample Research Alert Entry</u>**

2002/320

Kiattikomol, K.  Jaturapitakkul, C. et al.

A study of ground coarse fly ashes with different finenesses from various sources as pozzolanic materials

Cement & Concrete Composites

Vol.23 Nos.4/5, 201,pp335-343      (20)

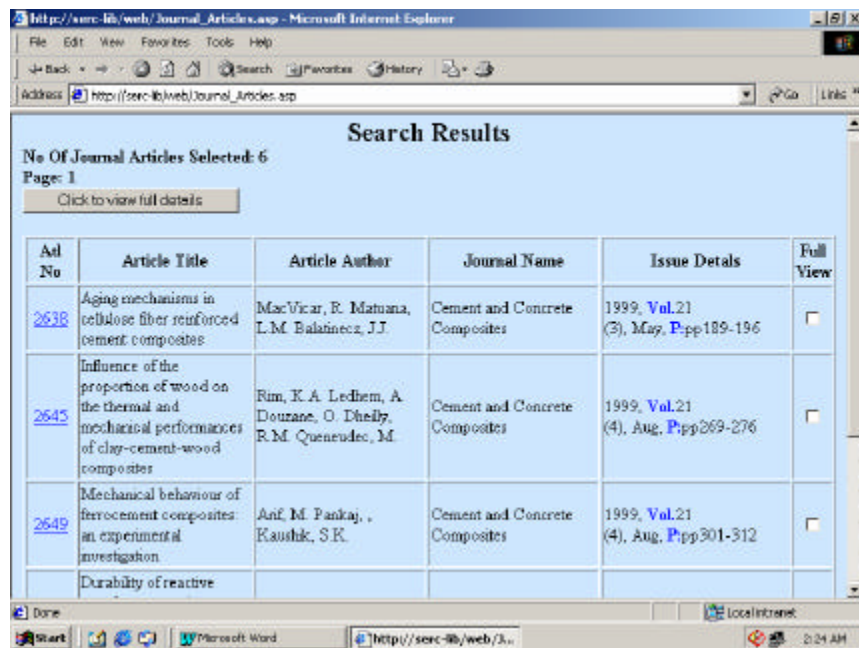Appendix III

**Simple Search Module**
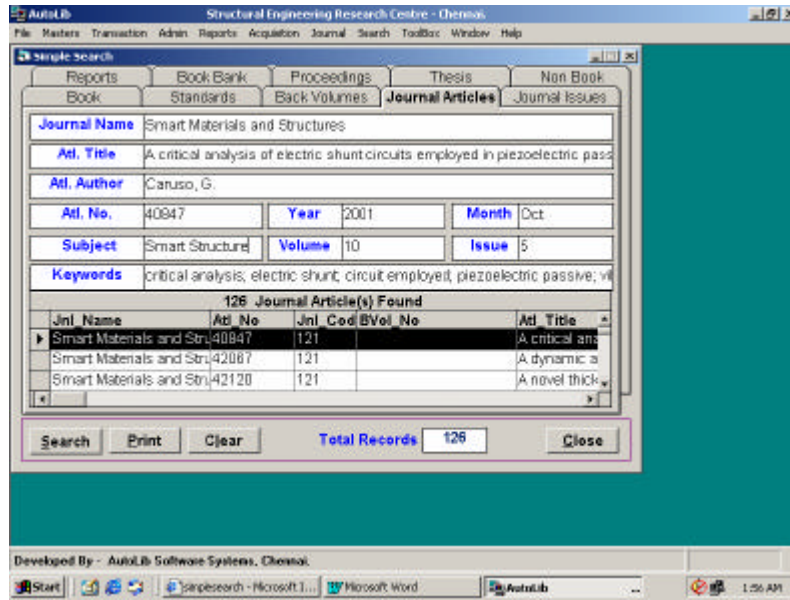


Appendix IV

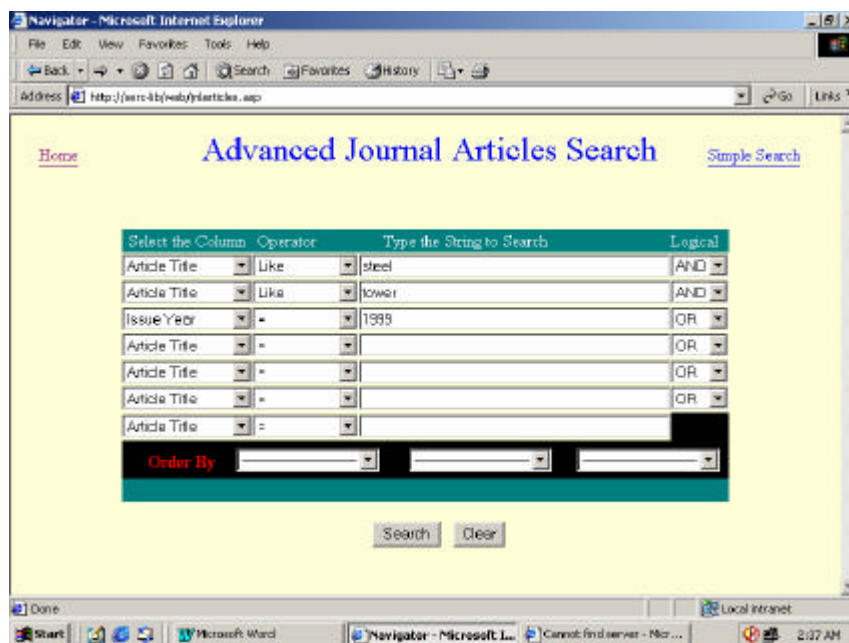**AutoLib  WEB OPAC Interface for simple search**
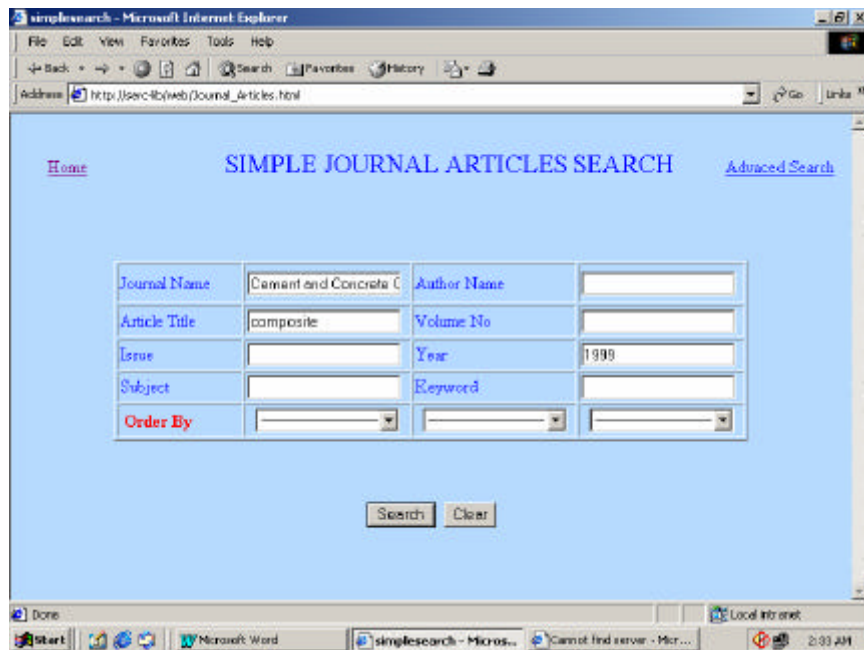


Appendix  IV(a)

**Search result**



Appendix – V

**AutoLib WEB OPAC Query Builder for Advanced Search**



Appendix V(a)

**Search Result**

SERC – Campus LAN

HUB

Counter

Campus LAN/
Intranet

HUB

WEB OPAC

Library LAN

Internet through
VSAT

Database Creation/ Processing Nodes

Library Database Server
Windows NT 2000 Server
IIS WEB Server

AutoLib Library Software

**Fig . 1**