

**SOUVENIR**



**SIS Annual Convention and Seminar  
on  
Information Science and  
Communication:  
Opportunities, expectations and  
strategies**

**14-15 October 2022**

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India International Centre  
Max Muller Marg  
New Delhi-110 003

# President's Message



The Society for Information Science (SIS) is the professional body of scientists and technologists engaged in research, development and academics of information science, data science, informatics, and knowledge systems and alike, came into being in 1976. Creation, transmission, flow and retrieval of scientific information is paramount for scientific and academic pursuits hence acquire more value and significance especially when it comes to creation and propagation of new knowledge for the larger public good.

I am happy that the SIS will be holding its Annual Convention 2022 and organizing a Seminar on "Information Science and Communication: Opportunities, Expectations and Strategies" during 14-15 October 2022 in New Delhi. It will provide a platform for esteemed members of the Society as well as for researchers and scholars to meet likeminded people and present their research findings for broader peer discussion and acceptance.

Information science and technology have passed through a sea change over the decades since the inception of SIS and it has continuously upgraded and advanced itself with new areas and themes emerging out of constant innovations and advancements in the field globally. The Annual Convention and Seminar is a hallmark event of SIS and an opportunity to move ahead with a renewed vision and mission to cater to the information science fraternity. The seminar theme has been worked out on the basis of sweeping changes in the scientific information and communication domains in the recent past.

The COVID19 pandemic saw the massive generation of data and information, new modes of communication, and miscommunication of information. These have led to new challenges and possibilities for both information science and communication professionals especially emerging in the modern digital age. Big data processing and open science have been evolved in a big way. Likewise, the rise of social media communication has led to effective communication as well as dissemination of false information and data.

It is a matter of great pleasure and satisfaction that we have received an overwhelming response from researchers and scholars and have received a variety of research findings. The 2 days' programme will have 5 scientific sessions, where we shall be deliberating on various aspects of information science and communication to be presented by information science and communication professionals, scientists and researchers. The seminar also aims at evolving strategies and roadmap in the light of new information and communication landscape.

On behalf of SIS and on my own behalf I am pleased to welcome all esteemed members, awardees and delegates to the much awaited Seminar and Convention. I am sure that you will have enjoyable stay, enriching exchanges and enlightening deliberations.

I also wish to thank and congratulate the Organizing Team for putting together the SIS Convention, Seminar and Souvenir meticulously and timely manner. I also express our gratitude for generous support and cooperation from different institutions.

I wish the programme a grand success.



Dr Manoj Kumar Patariya  
President  
Society for Information Science (SIS)

14 October 2022

# Society for Information Science

The Society for Information Science (SIS) was formed during 1976 with the following aims;

- i) To promote interchange of information in the discipline of information science and its subdivision amongst the specialists and between specialists and the public.
- ii) To encourage and assist the professionals to maintain the integrity and competence of the profession.
- iii) To foster a sense of partnership amongst the professionals engaged in these fields.

The Society is of the firm opinion that there should be systematic approach in adapting new information technology with cost-benefit analysis. There should also be a plan to strengthen infrastructure viz., to create manpower and maintenance support to the new technology. The Society is firmly committed to provide a congenial environment for interaction among information innovation, industry, technology management and services which are socially relevant in the interest of the Nation. The SIS functions through an Executive Committee consisting of experts from different institutions and assisted by various sub-committees for carrying out its programme.

## Membership

Society for Information Science (SIS) is an all India professional body devoted to encouraging interaction among information professionals, scientists, managers and users. The Society is truly professional in nature. It enrolls only the qualified persons as members after the applications have been screened and approved by the Membership Screening Committee which is duly nominated by the Executive Committee.

The Society organises annual Conferences on different themes and short-term courses on various topics every year. The SIS awards Fellowships to members in recognition of their outstanding contributions to information Science and to Society. The Young Information Scientist Award has been instituted in 1989 in the memory of Late Shri A.S. Raizada, Founder Secretary of SIS. The publications of SIS include SISCO and SISTRANS. Membership is open to all information professionals. Membership fee for life members is Rs.2500/-. Institutional membership is open to institutions interested and involved in information management. The institutional membership subscription is Rs.10000/- per year.

# SIS Annual Convention 2022 and Seminar

## Information Science and Communication: Opportunities, Expectations and Strategies

### About the Seminar

The Society for Information Science (SIS) was formed in 1976 to promote interchange of information in the discipline of information science and its subdivision amongst the specialists and between specialists and the public. The Society aims to foster a sense of partnership amongst the professionals engaged in these fields. The Society is firmly committed to provide a congenial environment for interaction among information innovation, industry, technology management and services which are socially relevant in the interest of the Nation. The SIS functions through an Executive Committee consisting of experts from different institutions and assisted by various sub-committees for carrying out its programmes.

The SIS Annual Convention is a hallmark event of the Society. The Society is organizing this year's Annual Convention as the **Seminar on 'Information Science and Communication: Opportunities, Expectations and Strategies'**.

The COVID-19 pandemic has brought to the forefront the importance of information science and science communication. The Seminar will focus on the new opportunities, expectation, and challenges in the field of information science and communication.

Original contributions under the main theme and the following subthemes will be discussed during the Seminar.

- Emerging global and Indian landscapes of information science
- Software and databases in knowledge creation and management
- Communication, collaboration, and computation during COVID-19
- Open science, open data, and open information resources
- Multidisciplinary interrelations and information society

The seminar is being held at India International Centre, a non-government institution widely regarded as a place where statesmen, diplomats, policymakers, intellectuals, scientists, jurists, writers, artists, and members of civil society meet to initiate the exchange of new ideas and knowledge in the spirit of international cooperation.

# **SIS Convention and Seminar 2022**

## **Organizing Committee**

Dr Manoj Kumar Patairiya

Dr R K Sinha

Shri N K Wadhwa

Dr V K Varun

Shri Tariq Badar

Dr G Mahesh

## **Advisory Committee**

Dr Naresh Kumar

Dr R R Hirwani

Shri N V Sathyanarayana

Dr Divya Srivastava

Dr Sujit Bhattacharya

Dr Suman Malik

## Remembering Dr B C Sharma



(1944-2021)

It was almost an year ago, on August 29, 2021, the Society for Information Science lost one of its founding fathers, a pillar of its intellectual strength and a source of inspiration, Dr Budhi Chander(B.C.) Sharma.

Dr Sharma, a founder member of SIS, was an elected Fellow of SIS, a member as well as a Vice President of SIS Executive Committee over several terms. For a number of years, he was not only the Editor of SISCOP, the newsletter published by SIS but also used to contribute regularly to its Editorial columns. His reflections and insights on global technological developments in the domain of science communication were keenly read. He was a regular participant to SIS Conventions and Annual Conferences and was invited to deliver the first Nagarajan Memorial Oration of SIS.

Dr Sharma, born in Rawalpindi, in undivided India on June 20, 1944, lost his father at a tender age of 2. His family moved to India after partition where he had his initial schooling at Gurukul Kangri, Haridwar. He had to go through a lot of challenges at a very young age, but it was his grit and determination that he overcame all those challenges and continued with his studies. Later he moved to Hansraj College, Delhi for his graduation in science and to Hindu College, Delhi for his post-graduation in science under Delhi University. For his Ph.D. in inorganic chemistry he moved to Indian Institute of Science, Bangalore where he proved his deep understanding of the subject matter and was awarded the prestigious J C Ghosh Award of IISc for the Best thesis.

Starting his career in science editing from the then Publications and Information Directorate of Council of Scientific and Industrial Research, Dr Sharma published scores of research, technical and popular science papers/articles in national and international journals. Out of five books published by him two are on scholarly communication, the last one "Scientific and Technical Reports: How to Write and Illustrate" was published in 2014. Dr Sharma was not only a soft spoken and a down to earth scientist, but also a scholar of Vedas and Puranas, a fact not known to many.

With over 40 years of experience as science editor, Dr Sharma served as the Editor of the *Indian Journal of Chemistry and Science Reporter*. After his superannuation as Chief

Scientist from National Institute of Science Communication and Information Resources, a unit of CSIR, New Delhi he worked as a Consulting Editor for BI Publications, New Delhi bringing out many reference and text books in medical sciences.

It was his scholarly disposition and a full grasp over his chosen subject area of science communication and science editing that he was a much sought after speaker in training programmes/Workshops nationally.

His passing away has been a loss not only to his family but also to the SIS fraternity. SIS will always remember and cherish his services, scholarly contributions and amiable demeanour.

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## Society for Information Science (SIS)

Seminar on  
*Information science and communication:  
Opportunities, expectations and strategies*

On the occasion of  
**SIS Annual Convention 2022**  
at  
Seminar Room 2&3, Kamladevi Complex  
**India International Centre**  
Lodi Gardens, Max Mueller Marg, New Delhi-110003

14-15 October 2022

### Programme

Day 1: Friday 14 October 2022	
09:00 AM	<b>Arrival of Delegates/ Registration/ Interaction</b>
09:00 AM	<b>Tea/ Coffee</b>
10:00 AM	<b>Inaugural Session</b>  10:00 AM <b>Invocation &amp; Lighting of Lamp</b> 10:05 AM <b>Presentation of Flowers</b> 10:10 AM <b>Keynote Address:</b> Dr. Manoj Kumar Patariya, President, Society for Information Science, New Delhi 10:20 AM <b>Release of SIS Souvenir</b> 10:25 AM <b>Address by the Guest of Honour:</b> Prof. R.K. Sinha, Vice Chancellor, Gautam Buddha University, Greater Noida 10:40 AM <b>Presentation of SIS Honorary Fellowship Awards</b> 10:45 AM <b>Inaugural Address by the Chief Guest: Prof. Sachchidanand Joshi,</b> Chairman, National Monuments Authority, Ministry of Culture, Govt. of India & Member Secretary, Indira Gandhi National Centre for Arts & Culture 11:00 AM <b>Felicitations</b> 11:05 AM <b>Presidential Address:</b> Prof. Krishan Lal, Co-Chair (Science), Inter-Academy Partnership (IAP), Formerly President, Indian National Science Academy, New Delhi 11:20 AM <b>Vote of Thanks:</b> Dr. G. Mahesh, Secretary, Organizing Committee, SIS Convention & Seminar 11:25 AM <b>National Anthem</b>
11:30 AM	<b>Tea/Coffee</b>
12:00 Noon	<b>Scientific Session I: Emerging global and Indian landscapes of information science</b>  <b>Chair:</b> Dr. Naresh Kumar, Formerly President, SIS, Chandigarh

	<p><b>Co-Chair:</b> Dr. V.K. Varun, Director, DSIR, New Delhi</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. Dr. S K Senapati, Principal Technical Officer, CSIR-CBRI—<i>One Nation, One Subscription-Conception to Execution</i></li> <li>2. Dr Rajani Meshram, Savitribai Phule Pune University— <i>Melvil Dewey and His scheme of Classification</i></li> <li>3. Ms. Saloni Chaudhary, Department of Library and Information Science, Banaras Hindu University— NEP 2020: Fostering new forms of learning through Open Distance Learning and Open Educational Resources in the Indian education system</li> <li>4. Dr Anshu Arora, Associate Professor, Amity University—<i>Online Healthcare: Good or Bad</i></li> </ol>
01:00 PM	<b>Lunch</b>
02:00 PM	<p><b>Scientific Session II: Software and databases in knowledge creation and management</b></p> <p><b>Chair:</b> Dr. Namita Gupta, Adviser &amp; Head, INSPIRE, DST, New Delhi</p> <p><b>Co-Chair:</b> Dr. Suman Malik, Formerly Scientist, CSIR</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. Mr Puttaraj A Choukimath, Tata Institute of Social Sciences—<i>Intelligent libraries: an exploratory study of artificial intelligence systems for the academic and research libraries</i></li> <li>2. Ms Anita Sharma, Mahatma Gandhi Central University, Bihar—<i>An analysis of the Visibility of the Indian Central University Library Websites in Google Index: A Study</i></li> <li>3. Mr Mohit Garg, Indian Institute of Technology, New Delhi—<i>R: A One Stop Open Source Environment for analysis of Open Data</i></li> <li>4. Ms Priya, Central University of Himachal Pradesh (CUHP)—<i>Perceptions of Open Research Tools among Research Scholars of Central University of Himachal Pradesh</i></li> </ol>
03:00 PM	<p><b>Scientific Session III: Communication, collaboration and computation during COVID-19</b></p> <p><b>Chair:</b> Dr. R.K. Sinha, Head, CSIR-Human Resource Development Centre, Ghaziabad</p> <p><b>Co-Chair:</b> Prof Anil Saumitra, Indian Institute of Mass Communication, Jammu Centre</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. Mr. Murtala Ismail Adakawa, ICCR Research Student, University of Mysore—<i>Scholarly communication practice and research collaboration pattern of scholars during COVID-19 pandemic: triple helix theory perspective</i></li> <li>2. Dr. Chhavi Jain, Manav Rachna International School, Gurugram—<i>Communication, collaboration, and computation during COVID-19: A Case Study of Manav Rachna International School</i></li> <li>3. Dr. Manika Lamba, ICCSR Doctoral Fellow, University of Delhi—<i>Visualizing the Pace of COVID-19 Research: An Experimental Study of All India Institute of Medical Sciences (AIIMS), New Delhi</i></li> <li>4. Dr Pramukha S. P, ICMR-Vector Control Research Centre, Puducherry—<i>The Role of Information Specialist in Research Libraries during Health Crisis Period: A Case Study of ICMR- Vector Control Research Centre, Puducherry</i></li> </ol>
04:00 PM	<b>Tea/ Coffee</b>
04:30 PM	<p><b>Scientific Session IV: Open science, open data and open information resources</b></p> <p><b>Chair:</b> Shri N.V. Sathyanarayana, Bangalore</p>

	<p><b>Co-Chair:</b> Dr. V.P. Singh, Secretary, Indian Science Communication Society, Lucknow</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. Dr Manorama Tripathi, University Librarian, JNU, New Delhi— <i>Comparison of Open Science Portals: A case of India</i></li> <li>2. Mrs Hamsa Kalyani, National Institute of Advanced Studies, Bangalore—<i>The NIAS Repository: A Link from the Past to the Future</i></li> <li>3. Ms Khushboo Thakur, Indian Institute of Human Settlements, New Delhi—<i>Towards Building Open Access Policies in Asia: Challenges and Prospects</i></li> <li>4. Ms Alapana Saha, Research Scholar, AcSIR, CSIR-NIScPR—<i>Open Science and its role in Science Education</i></li> </ol>
05:30 PM	<b>AGM-SIS (Members Only)</b>
	<b>High Tea/ Coffee</b>
<b>Day 2: Saturday 15 October 2022</b>	
09:00 AM	<b>Arrival of Delegates/ Registration/ Interaction</b>
09:00 AM	<b>Tea/ Coffee</b>
10:00 AM	<p><b>Scientific Session V: Multidisciplinary interrelations and information society</b></p> <p><b>Chair:</b> Dr. Swadesh Singh, Secretary General, Academics4Nation, Delhi University</p> <p><b>Co-Chair:</b> Dr. Divya Srivastava, Formerly Scientist, ICMR, New Delhi</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. Dr Nabi Hasan, Indian Institute of Technology Delhi—<i>Digital Information Services: An experience with IIT Delhi</i></li> <li>2. Dr Diwakar Kumar, Centre for Studies in Science, Technology, and Innovation Policy, Central University of Gujarat —<i>A Soil Health Reforms: Problems &amp; Prospects of Public Engagement of Science</i></li> <li>3. Mr. Manohar Pathak, Directorate of Education, GNCT Delhi—<i>Publication and Collaboration pattern of Indian Library and Information science researchers</i></li> <li>4. Dr Ranju Sharma, CSIR-NIScPR—<i>Mapping Heavy Metal Pollution in River System: A Scientometric Analysis</i></li> <li>5. Ms Lata Kumari, CSIR-NIScPR—<i>Study the International Trends of Rice Research: A Scientometric Analysis</i></li> </ol>
11:00 AM	<b>Tea/ Coffee</b>
11:30 AM	<p><b>Valedictory Session</b></p> <p>11:30 AM <b>Presentation of Flowers</b></p> <p>11:35 AM <b>Welcome Address:</b> Dr. Manoj Kumar Patairiya</p> <p>11:40 AM <b>Seminar Report:</b> Dr. G. Mahesh</p> <p>11:45AM <b>Dr. Nagarajan Memorial Lecture:</b> Dr. Sujit Bhattacharya, Chief Scientist, National Institute of Science Communication &amp; Policy Research, New Delhi</p> <p>12:00 PM <b>Address by the Guest of Honour:</b> Prof. R.S. Sangwan, Formerly Director, Academy of Scientific &amp; Innovative Research (AcSIR), Ghaziabad</p> <p>12:15 PM <b>Felicitations</b></p> <p>12:20 PM <b>Valedictory Address by the Chief Guest:</b> Dr. Sanjeev Kumar Varshney, Adviser &amp; Head, International Cooperation, Department of Science &amp; Technology, Govt. of India, New Delhi</p> <p>12:35 PM <b>Presidential Address:</b> Dr. R.K. Bhandari, Formerly Chair, Disaster Management, Indian National Academy of Engineering, New Delhi</p> <p>12:50 PM <b>Vote of Thanks:</b> Shri Tariq Badar, Member, Organizing Committee</p> <p>12:55 PM <b>National Anthem</b></p>
01:00 PM	<b>Lunch</b>

# Abstracts

**Session I:**  
**Emerging global and Indian landscapes of  
information science**

## **‘One Nation – One subscription’ Conception to execution**

Susanta Kumar Senapati

*Principal Technical Officer, CSIR-Central Building Research Institute, Roorkee*

‘The benefits of the e-journals consortium are well known and indeed few e-resource consortiums are running very well with a green flagship like e-shodhSindhu (INFLIBNET) and NKRC (CSIR-DST) e-resources consortium. Crores of rupees has been spent every year for the subscription of foreign journals and e databases. A very substantial amount have been drained out to the foreign countries in respect of dollars/Euros and pounds along with adding Article Processing Charges (APC). The concept of ONOS has been derived from the latest ‘Science, Technology and Innovation Policy, 2020’. An official Memorandum (OM) has been issued from the Office of the Principal Scientific Advisor, Government of India on 3<sup>rd</sup> August 2023. A Planning and Execution Committee (PEC) has been formed for the planning and Execution of ONOS and the Director, INFLIBNET is the Chairperson of the Committee. This OM has been stated clear cut Terms of references of PEC and also added an annexure for the guiding principles of ONOS. The objectives of the paper are to discuss guiding Principles for execution of ONOS as stated Annex-1 of OM, discuss the problems and find out solutions and give suggestions towards the implementation of ONOS.

## **Digital Information Services: An experience with IIT Delhi**

Nabi Hasan

*Head Librarian, Indian Institute of Technology Delhi, hasan@library.iitd.ac.in*

Digital information services help make content accessible in machine-readable form as per the users' convenience. The main focus is to get the right information at the right time to the right users in the right format at the right place.

These services may include but are not limited to: WebOPAC, IR, e-resources, software, eNewsclips, Digital Uploads, Library website, Library Apps, Library Bulletins, Remote Access based services, Digital Reference Service, Virtual Library Tours, Web-based User Education, FAQs, Library Calendar, Web Forms, Bulletin Boards, Discussion Forum and Listservs, QR Code based Services, Internet library, or a digital collection with an online database of digital objects, etc.

The IIT Delhi Library System is one of the early adapters of innovative technologies in India for different digital information services. The paper/presentation, therefore, focusses on digital information services provided by the Central Library of IIT Delhi to its clientele. Apart from this, we support the institute to improve visibility, public perception and ranking and help the institute through faculty profiling and mapping systems for academic and research impact analyses, other ICT-based services, including state-of-the-

art user support services, cloud computing, RFID Technology, Library App, Research Support Services and Outreach Programs, etc.

As per New Education Policy, the library plans to collaborate with stakeholders towards easy access to information, affordability, equity, quality, and responsibilities which are the founding pillars of NEP 2020. "For IITD to remain at the forefront of the new research opportunities, the library plays an essential part. Not only by heeding the warnings of our academic research but also by providing and facilitating the tools, we need to conduct that research through customized information resources, services and products".

It would be an interesting study to explore and could initiate a useful discussion.

## **Melvil Dewey and His scheme of Classification**

Rajani Meshram

*Assistant Librarian, Jayakar Knowledge Resource Center, Savitribai Phule Pune University,  
rajani@unipune.ac.in*

The year 1876 is of great significance in the Librarianship in general and American Librarianship. Classification schemes are tools that allow us to allocate a class mark – an artificial notation comprising alphanumeric characters and punctuation marks to every item based on its subject content so that the library staff can preserve all the related items together on the library's shelves. Among modern library classification schemes, the Dewey Decimal Classification (DDC) is both the oldest and the most widely used in the United States. Such widespread use is a tribute to Melvil[le Louis Kossuth] Dewey, whose original plan was adaptable enough to incorporate new subjects as they emerged and flexible enough to withstand the changes imposed by the passage of time.

The Decimal Classification was first published by Melvil Dewey anonymously in 1876 as a classification and subject index, for cataloguing and arranging the books and pamphlets of a library. This was originally devised for the use of Amherst College Library where Dewey was then a student. It also discusses the features and information about the different editions of Dewey Decimal Classification.

New editions of DDC have been published every few years. New editions of DDC have been published every few years. Between editions, updating is accomplished via publication of new and changed entries on the Dewey Web site at the first of each month. Twenty four updates were necessary as a result of the enormous advancements in knowledge throughout time in all sectors. The revisions are achieved, where possible, by extensions to existing numbers. It also discusses the editorial policy and the different editors of all the editions of DDC. A policy for "continuous revision" has been adopted by OCLC, which means that revisions are released between editions, and new editions appear as accumulations.

# **Record and Archive keeping Practices in India: An evaluative study**

Abdul Moid and M. Masoom Raza

*Research Scholar, Department of Library and Information Science, Aligarh Muslim University, Aligarh*

Archives are permanent documents that are often not current but are stored and maintained for long periods of time owing to their value. Archiving is an ageing process that is carried out in a variety of ways. Archival documents are evidence-based memories of an organisation, country, institution, or individual's actions. The production of the record gives rise to various categories of archival institutions. Documents stored in archives are often considered the most reliable information source. As a result, academics, particularly those studying history, rely primarily on the archives. Access to archive documents has recently altered significantly, as they were previously exclusively available in physical form.

Archives and records are kept at the national and state levels in India, just like in other nations. We also see a change from physical to digital access to records available at the relevant agencies. Every state and UT have its full-fledged Archive, where records related to that state are kept and made available to users.

The study is more qualitative. Hence, the present will be carried out through primary and secondary sources such as relevant literature, reports, dedicated websites, and portals of national and state archives in India.

## **User's Perception towards Reference Management Software Mendeley and Zotero: A study of LIS students and Research Scholars of University of Delhi**

Nidhi

*Department of Library and Information Science, University of Delhi*

The shift of information sources to the internet has made maintenance of references an endless, exhausting bromidic, and tedious task as well. The use of reference management software has also increased simultaneously for proper management of references. The paper explores the perception of the user of open-source reference management software. The study was conducted in hybrid mode upon 160 students of the Department of Library and Information Science, University of Delhi. Among 160 responses 146 responses were analyzed evoking a percentage of 91.25. The findings of the study reveal that Mendeley is the most used reference management software by the respondents. The findings also demonstrate that 'creation of personal virtual library' was the best feature

identified by the students whereas 'problems associated with plug-ins' are recognized as the most disliked feature of Mendeley. The study demonstrates that the number of responses was in favor of Zotero as students find it tedious to use. The study is one of its kind as it presents a comparative notion of the user's perspective of reference management software and helps researchers to choose wisely between the software and maintain the integrity of the research.

libraries, especially in the academic sector. This paper will help understand the implementation of intelligent agents and the impact of AI on libraries. It could be a future course of action. With new technology, the libraries should take a chance and improve the quality of knowledge representation. AI is one step further from redefining information organization and reforming library services. The research paper covers the aspects of AI which can be used in academic and research libraries and gives new insight to intelligent agents.

## **Education and Training Needs in the Changing Information Landscape**

Jaideep Sharma

*IGNOU, New Delhi*

Information generation, organisation and transmission is undergoing paradigmatic changes. Information is a key to survival and growth in all areas of life. It has caught the attention of one and all. People from different disciplines have shown interest and contributed in different aspects of the information cycle. Information Science, an interdisciplinary area of study has been the domain of LIS professionals. In recent times, they have taken a back seat in the developments of the discipline. There is a need to relook into the education and training needs of the professionals to prepare them to contribute to the profession and be in the forefront. The paper would present a broad structure as a blue print to help revive the competencies of LIS professionals in the field in the changed scenario.

## **Session II: Software and databases in knowledge creation and management**

# **Intelligent libraries: an exploratory study of artificial intelligence systems for the academic and research libraries**

Priyamvada Singh\* and Puttaraj A Choukimath\*\*

*\*Content Editor*

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This paper aims to outline the possible application of intelligent agent technology in academic and research libraries. It comprises of different technologies and perspectives of researchers from around the world. This paper covers the definitions given by various authors and attributes and growing application in other fields. This study also proves how technology is constantly generating new and fascinating ways to transform our lives. From how people were doubtful of computers when they first came but slowly accepting them into their lives to making machines who think and act like humans, our generation has come a long way. People are ready to be dependent on devices ultimately, which has its pros and cons. But if we talk about libraries specifically, intelligent agents acting like humans and interpreting our commands can prove to be a boon in information management. The motive of intelligent agent technology in libraries is brought forth from many different perspectives like knowledge representation, management, sharing, collection development, and the like. This paper focuses on bringing out the various possibilities of artificial intelligence in.

## **An analysis of the Visibility of the Indian Central University Library Websites in Google Index: A Study**

Anita Sharma & Ranjeet Kumar Choudhary

*Department of Library & Information Science, Mahatma Gandhi Central University, Bihar-845401, India*

An academic institution's website serves as one of the most valuable tools to show the visibility of its output to learners. It's crucial to know whether academic library websites are visible in popular search engines. In this study, the Google index of the central university library website in relation to the Alexa rank of the site is analyzed through SEOQuake chrome extension.

An automated SEOQuake extension for Google Chrome was used to find the Google Index and Alexa Rank for 38 central library websites. After obtaining Google Index and Alexa Rank grades were assigned for both. Analyzing the data was done using an Excel spreadsheet.

Nalanda University library website was ranked first in the Google index while Indira Gandhi National Open University library website was ranked first in the Alexa ranking.

The Google index grade of 22 (57%) central university library websites is higher than that of Alexa rank. In the top 5 central university libraries, three universities - Indira Gandhi National Open University, New Delhi, Jamia Millia Islamia, Jamia Nagar, New Delhi, and Aligarh Muslim University, Uttar Pradesh was found, indicating Search Engine Optimization is good on these university library websites, proving they are good at SEO.

The study only examined 38 of the 54 central library websites since the rest do not have their library websites. The study presented in the results only considers Google index and Alexa rank from SEOquake.

Especially for library websites that receive lower grades, the results are crucial for webmasters or library professionals to take steps to increase Search Engine Optimization techniques.

The study is unique in that it is the first to look specifically at Google indexing for central university library websites.

## **R: A One Stop Open Source Environment for analysis of Open Data**

Mohit Garg

*Assistant Librarian, Central Library, IIT Delhi Hauz Khas, New Delhi – 110016,  
gargmohit@library.iitd.ac.in*

The researchers have to spend a lot of time and money collecting the different types of data for their research. But recently, this has been reduced by the availability of open data at a single click. Open data is defined as data available for free for reusing and redistribution. Governments of different nations are providing the free accessibility of data to attain transparency, research collaboration, innovation, engagement of citizens, etc. A few open data portals are data.gov, data.gov.in, africaopendata.org, data.gov.sg, data.gov.au, etc. The open data portal of India is <https://data.gov.in/>, which also links the data portals of 18 states of India. The portal provides access to data of different domains like Health and Family Welfare, Agriculture, Education, Transport, Finance, Economy, etc. The data can be downloaded in formats like XML, JSON, Xls, and ods. Apart from these, it has the beautiful feature of accessing data through APIs(Application Programming Interfaces). With the help of these APIs, a separate system can be developed that establishes the connection between the systems and the data portal. This necessitates the need for an environment that can be used for the analysis of data as well as for building the system based on APIs. R is a popular open source and free environment for statistical analysis, interactive visualization, and designing dashboards. The present paper discusses R and Rstudio followed by necessary packages mainly in the context of Open Data, like datagovindia for wrapping the data from the portal data.gov.in; rvest, httr, jsonlite for harvesting and parsing the data from web; ggplot for the analysis and visualization and shiny for building the interactive web-based dashboard. A pilot interface based on the API of data. gov.in is also developed.

# **The NIAS Repository: A Link from the Past to the Future**

Hamsa Kalyani

*Library and Information Officer, National Institute of Advanced Studies, IISc Campus,  
Bengaluru*

One of major roles of institutional repositories in the last two decades has been to archive and enhance visibility of digital assets of an Institution. These assets may vary in type and format. The NIAS repository was set up in 2006 using Eprints software. In this paper, an attempt is made to demonstrate the possible ways of showcasing the digital assets with value additions made to the repository by capturing both formal and informal content types.

## **IR@IIMC: a step by step approach to establishing Institutional Repository using DSpace at IIM Calcutta**

Narayan Chandra Ghosh and Jhantu Mazumder

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This paper deals with the practical experiences of establishing IIM Calcutta Institutional Repository using an open source software DSpace. It will act as a user manual for professionals who want to develop their repository. From beginning to end, the whole process & steps have been divided into three core units. **1)** The 1st unit explains the requirement of hardware & software with their compatible versions & step-by-step commands for installing DSpace. The unit also shows the workflow of user interface customizations with their suitable script both in JSPUI & XMLUI mode. This unit has revealed the script for the complete outgoing email server configuration. **2)** In the 2nd unit, the steps of creating & designing the communities, sub-communities, collections & metadata entry with full text comes. The unit also includes the steps of bulk data import & export from the admin site. The configuration of global IP mapping and SSL integration with the Tomcat server has also been shown, and the repository is now globally accessible with a secure connection. The access control policy and specific right to any collection have been discussed in this unit. **3)** The 3rd unit mainly focuses on each problem or error practically faced during the development stage & the suitable solutions, which will make the professionals more aware from the beginning so that they will not panic or ignore the errors. This unit also discusses the necessary steps for backup and restoration. However, this paper is a comprehensive guide for all the users who want to develop their repository using DSpace.

## **PRAKAS an Automated System to Capture Technical Literature at CSIR-NAL**

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Abstract: The research institutes worldwide with a mandate to carry out full-fledged research activities generate enormous data; part of it often transforms into scholarly literature and is published in regular channels. A large part of the research data fails to enter into a formal publishing framework, remains unnoticed in the form of grey literature, and diminishes with creators once they leave the institute. The unpublished technical literature serves as a supplementary source by providing access to the raw ideas of previous researchers. The research establishments, mainly research and development institutes, generate a considerable amount of technical grey literature in the form of reports, technical and laboratory notes, memorandums, special publications, technical briefs, etc. These publications tend to disappear due to the lack of documentation procedures for grey literature by parent institutes or their libraries. The libraries are witnessing tremendous technological interventions in all their spheres, enabling them to be more efficient. Much literature is born in digital format in the current ICT environment, and libraries must be equipped to capture them at the source to enrich the knowledge base. The robust digital capturing and archiving platform will enhance the capabilities of libraries to archive all kinds of technical grey literature produced in institutes more effectively and efficiently. The paper will discuss the unique system design and development of PRAKAS at CSIR-NAL to capture born digital technical documents for long-term access and preservation.

## **Open-Source Software for Teaching, Learning and Research : A Study of Open Broadcaster Software**

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There are a number of open-source software on the web which are being maintained by the individual users and the organizations who support them voluntarily. Open Broadcaster Software (OBS) is one of the open-source software that is being used

extensible by the Higher Educational Institutions (HEIs) worldwide to overcome the restrictions of proprietary software, time limit to create video and several other financial and technical constraints.

National Institute of Educational Planning and Administration (Deemed to be University), established by the Ministry of Education, Government of India dealing with the capacity building and research in planning and management of education, not only in India but also in South Asia [<http://www.niepa.ac.in/>] is aware of the provisions and usage of open-source software in the academic ecosystem. NIEPA conducts Faculty Development Programmes (FDP) on education and allied areas in both blended and online mode. It conducts a FDP on Applications of ICT in Academic and Research Libraries every year since 2018 where a variety of open-source applications or tools are being used to develop online courses on MOODLE Learning Management System (LMS).

The paper discusses the Open Broadcaster Software (OBS) used by the HEIs worldwide to overcome the financial and technical constraints of proprietary software.

**Session III: Communication, collaboration and  
computation during COVID-19**

# **Scholarly communication practice and research collaboration pattern of scholars during covid-19 pandemic: triple helix theory perspective**

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The purpose of this study is to review scholarly communication practice and research collaboration pattern of scholars during COVID-19 pandemic. The study used systematic review to consult literature extensively. This is to ensure creating a firm foundation for addressing emerging epidemics or pandemics and to provide an enabling ground for theory development for understanding the pattern of progression and transmission of infectious diseases. In addition, the study used Triple Helix theory as a lens to guide the review. This is because, there exists disconnect between scholarly community and research institutes, government, and industry. The review attempted to anneal the flaring gap existing between triads of knowledge creation and advancement of technology, innovation, and creativity i.e. government-university-industry. This is with a view to highlighting the government as the sole decision-maker and the other two as the agents of change, growth, and development of society. The review tried to link the spread of misinformation, conspiracy theories, false infodemic, etc. with the porosity existing between the triad of development in a society. Firstly, it started by reviewing available literature about scholarly communication and research collaboration during the pandemic, scholarly communication and open access, scholarly communication attitudes and behaviors of scholars, and conspiracy theories and misinformation well spread across the society. Many gaps were identified that differentiated the current study from the previous ones and attempted to contribute to the body of knowledge.

## **Communication, collaboration, and computation during COVID-19:A Case Study of Manav Rachna International School**

Chhavi Jain

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A school library is practically a learning resource centre for users with a trained staff who act as specialists and containing several information sources.

Information and communication development opportunities at school level and information flow are the big challenges to be faced by librarian and even management. The use of information technology increased extensively in classrooms and in resource centers. Online teaching and learning and connect students with books or let's say reading, was a big challenge. It becomes necessary for librarians to stay connected with young users and guide them about the authentic websites, information and literacy skills.

At that time Manav Rachna International School Library started MRIS Library Blog to connect students, educators and parents.

Through this paper presentation, I would like share the experience of teaching and learning during pandemic time and the role of school librarian to run a library without walls. The paper is about the need to adopt new technology to convert non-readers to readers. It was the challenge to maintain the visibility in educational institutions and in society as an Instructional Partner, Leader, Teacher, Specialist and Program Administrator under this critical situation in the world.

## **Visualizing the Pace of COVID-19 Research: An Experimental Study of All India Institute of Medical Sciences (AIIMS), New Delhi**

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**Abstract:** With the emergence of a new variant of coronavirus in 2019, it became important to devote a significant amount of time to reading and identifying relevant studies to better understand COVID-19. It is urgent to sort out important, effective, and meaningful information from large databases to guide scientific research and promote the proper control, prevention, diagnosis, and treatment of COVID-19. Thus, this paper will present an experimental study that will show the application of topic modeling, and data visualization for COVID-19 research from 2010 to 2021 for the All India Institute of Medical Sciences (AIIMS), New Delhi, India retrieved from three databases (Web of Science, PubMed, Scopus) using R programming language. The results will unveil the focus of scientific research, thereby giving deep insights into how the Indian medical society contributes to combating the COVID-19 pandemic.

## **The Role of Information Specialist in Research Libraries during Health Crisis Period: A Case Study of ICMR- Vector Control Research Centre, Puducherry**

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During a health emergency, the government and its medical systems, including the health-related research institutes and labs, have a huge role in analyzing the gravity of any disease and introducing measures to control the disease. The flow of information to

accelerate the research to develop a new vaccine is warranted. ICMR- Vector Control Research Centre (VCRC), situated in Puducherry, is one of the permanent and premier Institute of the Indian Council of Medical Research (ICMR), focusing the research on the control of vector-borne diseases. The VCRC Library and Information Centre had to help scientists get the required information during the COVID-19 pandemic. The Library started providing the resources extending remote login facilities to the scientists and researchers. A mechanism to inform the day-to-day updates about vector-borne diseases as an email alert has been created so that the scientist will be updated daily on the pandemic situation. The Library also sends the COVID-related open access resources to the researchers as many commercial publishers started providing free access to such content. The Library has also shared resources with other libraries and received much content from fellow librarians from other institutes. One of the strategies that the Library adopted was to subscribe to more online content over print resources. When many research libraries struggled to keep the usage of resources high as before, usage of library resources in ICMR-VCRC was higher than in previous years.

## **Informal Communication and Knowledge Sharing on Social Media: A Gender-Wise Analysis**

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According to Scimago Journal & Country Rank, India is in seventh place in research publications. India's educational policies aim to transform an agrarian society into an information or knowledge society. Social media helps to share knowledge with less hassle and waste time and effort. Gender-wise analysis of the use of social media shows that most females use social networking sites for academic and educational purposes. However, there are many barriers to females accessing social media like lack of awareness, privacy, etc. Male respondents felt that confidentiality is one of the significant barriers to using social networking sites. The study found that both general and academic-oriented social networking sites are extensively used for informal communications and academic knowledge exchange. However, there are many concerns like security issues, privacy, psychological and behavioral changes, etc., in using social media.

# **Covid-19 and Infertility: A Scientometric Assessment of Global Publications**

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A scientometric analysis of the publications data for the study was sourced from the Scopus database covering the COVID-19 and infertility research publications during 2019 and 2021 with 10700 research publications and 210744 citations. Maximum growth of 9168(85.68%) research publications are contributed in the year 2021, followed by 1530(14.30%) publications in the year 2020, and 2(0.02) publications in the year 2019. Country a maximum of 3367(38.45%) contributions are from the United States, the citations are 106966(43.73%), CPP is 31.77, H- index is 145 and RCI is 1.14. The study subjects a maximum of 1605(63.06%) contributions are Biochemistry, Genetics, and Molecular Biology. The author's maximum of 70(17.41%) contributions are Baden, L.R., and the United States. In the document type, a maximum of 5971(55.80%) research publications are contributed by articles. A maximum keyword, Human is with 9230(14.91%) research publications. The study Institution with a maximum of 221(15.04%) contributions is the Harvard Medical School. The keyword, the maximum of 348(17.92%) contributions is Vaccines. The maximum funding agency is the National Institutes of Health with 672(26.37%) research publications. The highly cited paper has the highest citations 4582, and document type of articles, Polack, F.P., et al (2020) Safety and efficacy of the BNT162b2 mRNA Covid-19 vaccine, New England Journal of Medicine, 383(27): 2603-2615.

## **Animated Sciencetons: An Innovative way for Science Communication**

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Science communicators have always faced a challenging time making their subject matter understandable and engaging. Making the presentation of scientific information is challenging in person and so in virtual worlds too. In the era of information science, digitalization is helping science communicators in various ways. If cartoon characters are coming to science communicator, shake hands with them and say, "Don't worry, we will help you out in making science interesting with funny facts, laughing language, cute cartoons, and good-looking graphics without losing the depth of science or scientific information." Scienceton is such a blending of scientific fact and humour. Sciencetons are cartoons with scientific information about new research, facts and figures, the history of science, and the lives of scientists.

By elevating scientoons and making them animated, one can bring greater attention to science communication in the digital age where media presentation is extending beyond still images and simple drawings to animation films with sound and music.

Imagine a dancing DNA or orbiting electron with a talking proton and the waving hand of a glucose molecule in animation. Walking and talking sodium and chlorine elements are ordered by the chef to react and make food tasty in the animated form. The paper and presentation will cover a wide range of animated scientoon, such as animals talking about habitat conservation, plants talking about their role in the ecosystem, and Newton and Einstein having a virtual debate with Mendeleev about coronium and newtonium.

## **Changes in journal preference, authorship pattern, and research output of Indian medical academics after COVID-19**

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The effects of Covid 19 have been felt in every sphere of human existence, from the health industry to the workings of the economy. The onset of the pandemic had a substantial effect on the medical community, as doctors and nurses were the first responders to the outbreak. This increased patient demand in hospitals and academic medical centres necessitated a shift from research to life-saving. Due to lockdowns and a shift in priorities, education and research activities were suspended, resulting in a decline in research productivity. The purpose of this study is to investigate the shifting patterns of publication practises among medical academics in India. Collecting publication data for four years (2018-2021) from the Scopus database for the top twelve medical academic institutions in India based on the National Institutional Ranking Framework, this study seeks to comprehend the shift in the types of publication venues chosen, the total number of research publications, and the authorship patterns of those publications. The findings of the study will help policymakers in the field of medical research to make decisions that are well informed and to institute significant reforms.

## **Session IV: Open science, open data and open information resources**

## **Comparison of Open Science Portals: A case of India**

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Open Science facilitates unhindered access to research data and findings to one and all globally. The Information and Communication Technologies – web portals, in particular, are great enablers in cultivating and fostering open science. The present study compares the three open science portals of Indian Science, Technology, Engineering facilities Map <https://www.istem.gov.in/> (I-STEM), India Science and Technology Portal <https://www.indiascienceandtechnology.gov.in/> (ISTI) and India Science TV <https://www.indiascience.in/>, over-the-top (OTT) TV channel. The comparison will be done by using the five main parameters of navigation, design, accessibility, interaction and content. A questionnaire will be administered to find out the users' satisfaction with these open science portals. The study will highlight the strong characteristic features and downsides, where improvement may be required, of the portals. The study will also highlight how these portals help in promoting citizen science and public understanding of science across the country.

## **Open Science and its role in Science Education**

Alpana M Saha

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Open science is nothing but the effort to make scientific research open to the public and dissemination of the same to the masses. Open science has revolutionized all the aspect of science in present world like science education, research and innovation. Particularly effect of open science on science education is going to be very impactful.

We can further add that open science movement is the continuation of open access movement, which surfaced two decades ago. This paper will discuss in details about all the pillars of open science like citizen science, open data, open repositories of science, research integrity and open educational skills. We find that open science as a phenomenon has come up to provide tools, platforms and services to the researchers and scientists worldwide to do effective work in science. The impact of open science on the public and professionals will also be analysed.

At the end the roadmap for advancement of science in educational institution under the umbrella of open science will also be chalked out. Changes in journal preference, authorship pattern, and research output of Indian medical academics after COVID-19

## **Towards Building Open Access Policies in Asia: Challenges and Prospects**

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Open access (OA) movements globally provided opportunities for scholarly communication, increasing research impact, advanced metrics and electronic publishing avenues for reaching a wider audience. In the process, it opened up opportunities for funders, libraries and publishers to create open infrastructures - critical to support open knowledge systems by embracing FAIR principles, open data and standards to facilitate unrestricted access to public funded research for the public. Open access publishing increased the awareness in accessing open knowledge systems in science, data and resources – beyond academia and libraries. This article aims to understand the growth of open access policies in Asia with regards to government policy, national mandates and other policy instruments. In doing so, it unpacks how the Asian countries embraced the open access frameworks to promote research, innovation and education, specifically at the national level, institutional policies and public access policies. We attempt to use open bibliographic databases for data collection and analysis, supported by literature review to show the growth of OA in federal policies, institutional and data repositories, open scholarly publishing and open educational resources. Further, our analyses will help to understand the OA landscape in terms of OA contents, formats, publishers and the growth of OA in Asian countries as a whole. Examining this will throw light on how the Asian countries understand the benefits of OA and where they stand in the global order, even as the benefits of OA reach far and wide, who will bear the cost of publishing largely remains unanswered with the stakeholders – funders, publishers and libraries – and how the Asian countries and regional cooperatives respond to this will be investigated. Further, open opportunities and challenges are discussed.

## **Perceptions of Open Research Tools among Research Scholars of Central University of Himachal Pradesh**

Priya & Shivarama Rao

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The researchers make a considerable effort and invest time in their laboratory to produce new knowledge. The whole research cycle of knowledge creation includes identification of the problem, data collection, analysis and publishing. Scholars use multiple tools to complete this process. These platforms are available on two primary models, i.e., Open Access or Closed Access (through a subscription). The researchers have free and full access of the source if it's under the open access model. In closed access the scholars or their respective institutions have to pay huge amount of money to get the access of the particular tool.

With the rise of the open access movement, the researchers are actively using open source platforms like Linux, Ubuntu, DOAJ, Sherpa/Romeo, R, Creative Commons, LibreOffice, etc. The international bodies have also supported open source and open access publishing. In its 41st session in November 2019, UNESCO recommended and

mandated to develop an environment for disseminating scientific knowledge to all citizens.

Therefore, we conducted this study to present the outline of perceptions and awareness of Research Scholars of the Central University of Himachal Pradesh(CUHP) on Open Research Tools. An electronic survey was developed in Google form. The questionnaire consists of questions on themes like reading and publishing of open access research, sharing research on social media platforms, and the use of cloud and open source software. The online link of the Google forms was circulated among research scholars of CUHP. The analysis found that the preference of scholars for searching the information was found to be Google followed by YouTube and Wikipedia. The results observed that scholars prefer reading and publishing in open access journals. Mendeley was found to be most popular for referencing the work. The study found the need of awareness among research scholars on open source tools, Academic Identity like Scopus, ORCID, etc.

## **NEP 2020: Fostering new forms of learning through Open Distance Learning and Open Educational Resources in the Indian education system**

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The Government's and other educational institutions' reluctance to adapt to the digital world led to the creation of Open Education Resources. Many students, teachers, and other stakeholders of the education system have appreciated the benefits of Open Education. Most of the Open Education resources are available for free, which makes it easier for students from low-income families to get the best education. Open education will help countries with fewer resources to build their curriculum with the help of open-source books, videos, and other resources. Recently, many govts have also started making their education policies Open. India recently opened its education policy to public comments. Countries like Estonia have already made their education policies open. Open education resources are free for everyone to access. It doesn't limit itself to a particular group of people, it is open to everyone. It doesn't have any licence restrictions, you can use it any way you want, in any country, any language.

Through this paper, we will try to elaborate on the concept of open distance learning/ education in the Indian context and how it acts as a catalyst for the education system in modern times. Further, we will discuss recommendations made in NEP 2020 regarding ODL/ODE comprehensively. Thorough research on the secondary data will be done to enlist the ongoing initiatives regarding open education. Further, how the integration of Open educational resources with EduTech companies can enhance the experience of the students in the education system will be discussed. As the existing Infrastructure for digital education lacks consumer acquisition tactics, the collaboration with these

industries will be beneficial for both the stakeholders- as govt will be able to provide interactive content, whereas companies will get funding for the same. The need for Open Education came to light more than ever since the pandemic hit the globe.

## **Open Citation Index: A new Way of Measuring the Retrieval of Information**

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The concept of citation indexing was envisioned by Eugene Garfield that has been widely applied in the field of information retrieval. Traditional Citation index has been used to detect patterns of scientific collaboration, map the landscapes of scholarly disciplines, assess the impact of research outputs, and observe knowledge transfer across domains. It only helps to measure the interconnections between scientific papers but fail to communicate contextual information about a citation. The use of citations in research evaluation without consideration of context become problematic because a citation that presents contrasting evidence to a paper is treated the same as a citation that presents supporting evidence. Again, With the rapid advancement of internet technologies new means of sharing scholarly communication have emerged that includes pre-print, post-print servers, unpublished papers or technical reports via the Internet and open access e-journals. However, although access to these is free, all have license restrictions on users' ability to reuse and republish the citation data they provide, which limits the full description and reproducibility of research studies using these data. In this context, this paper is an attempt to provide an over view of the emerging concept of open citation index. In the open citation index, index counts are based exclusively on open access publications. In this index bibliographic metadata and the information describing the scholarly publication are the key components. It helps in cross-disciplinary search capabilities and enable new possibilities for data discovery and synthesis. In addition to this this paper aims to discuss different open discovery citation indexes like Scilit, Scite, IFinder, Science Open, Lens.org, Scinapse etc. This article also analysing the features of different open citation indexes.

## **Open Science Movement in India**

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Open science can play an important role in boosting science and innovation in any country. It enables the optimal use of scarce resources by enhancing collaboration and transparency, alongside bolstering the reliability and replicability of scientific inquiries. Open, vibrant and transparent practice of knowledge production would also promote rapid diffusion of knowledge and citizen science. The open science movement has been gaining momentum at the present age. The movement aims to make scientific research, including resources and their dissemination and to provide access to all sections of society. The movement intends to build a more inclusive, transparent, collaborative scientific ecosystem where the free flow of publications, data, and code can accelerate innovation and aid in achieving UN Sustainable Development Goals targets. Its practices include open research publication, open access, open-notebook practices that make scientific knowledge communication easier.

Many countries have adopted or are on the road to adopting an open science framework. Unfortunately, India's record in the arena of open science remains poor in spite of its undeniable benefits. Though it is increasingly becoming a global practice in the sphere of science and innovation, due recognition elided in India. The new Science, Technology and Innovation STI policy also recommends an open science ecosystem in the country. It explicitly indicates that science can no longer be practised in laboratory silos and that the entire society must be part of the developmental process. There is also a need for Indian researchers and academicians to transcend geographic boundaries and engage more openly with countries looking beyond the usual collaborators from the Western countries.

## **Open science research practices: Investigating transparency and reproducibility-related practices in Library & Information Science research**

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Open science is the practice of removing barriers to sharing any form of output, resources, methods, or tools at any stage of the research process to enable the reuse, redistribution, and replication of the research and its underlying data and research procedures (Open Science Training Handbook, 2018). The pursuit of transparency and reproducibility, which are fundamental scientific concepts, can be crucial for improving productivity, facilitating self-correction, and boosting the credibility of the published literature (Wallach et al., 2018). Serious concerns about the quality of research have sparked a number of measures intended to encourage transparency and reproducibility and, as a result, facilitate the process of self-correction, improve productivity, and enhance research credibility. This study aims to investigate the adoption of transparency

and reproducibility-related research practices in Library & Information Science (LIS) research published between 2017 and 2020.

The study will be based on an observational approach with a cross-sectional design. The following variables will be measured: (i) sample articles' characteristics, (ii) Article accessibility and retrieval method, (iii) Materials and protocol availability, (iv) Data availability, (v) analysis script availability, (vi) pre-registration (vii) conflicts of interest and funding statements (viii) replication and evidence synthesis. (ix) open access.

Based on the methodology of previous similar studies in the Biomedical and Social Sciences domain (Hardwicke et al., 2020; Iqbal et al., 2016; Wallach et al., 2018), a random sample of 200 articles published in the Library & Information Science subject between January 2017 and December 2020 will be identified from the Scopus database and will be manually examined. A structured form based on previous biomedical and social science investigations (Hardwicke et al., 2020; Iqbal et al., 2016; Wallach et al., 2018) will be created and used to guide data extraction and coding for the above-stated indicators related to transparency and reproducibility. The investigators will manually perform the data extraction procedures.

The results will show how much transparency and reproducibility-related research practices are adopted in LIS research. The study's findings will establish a baseline estimate of the prevalence of indicators linked to transparency and reproducibility in the LIS field, which can be reexamined later to assess the progress.

**Session V: Multidisciplinary interrelations and  
information society & Summing UP**

# **A Soil Health Reforms: Problems & Prospects of Public Engagement of Science**

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When science controversies arise, scientists blame the public for not understanding science. New projects are made to educate the society in the expectation that if scientific know how is properly conveyed the society will see "problems" as professionals do. This method fails to realize that the public's decision-making on contentious subjects is frequently influenced more by ideology, social identity, and trust than by scientific facts. The community may make decisions on science and technology based on morals and emotions if they lack knowledge about soil sciences. Sometimes people choose news sources that confirm their opinions. Non-scientist opinion leaders have proven successful in communicating science to the public, yet their ideas may refute scientific specialists. Traditional communications in large corporations maintain consistent messaging internally and externally. To fulfil their duty to the public, science-based agricultural universities must do more than proclaim their perspective. In addition to outlining overall policy objectives, they must also provide raw data, cutting-edge scientific findings, interpretations that may be understood by informed laypeople in general, as well as suggestions for taking action and altering behavior.

This necessitates paying closer attention to how information is utilized and received in changing contexts, as well as the processes and connections necessary to generate and disseminate scientific knowledge. Particularly for policy audiences, the applicability of the research to contemporary concerns and the critical necessity of timeliness highlights the requirement for engaging information brokering systems that can give synergistic mixtures of "science push" and "policy pull." Given the role of research in recognizing fertilizer overuse and generating solutions, farmers are a crucial target for soil health reforms. Science has a restricted worldview, whereas policy must observe it through diverse lenses. When determining the best course of action for the future, policymakers must consider a variety of facts, including science. There's a lot written on farmers' adoption behavior in agricultural extension in addition innovation dispersion is also well-documented.

Developing a knowledge base on how micronutrient concentrations interact with the food production capacity is strictly necessary in present times. The 'demand' side of the science-policy interface, therefore, needs to ensure policy is based on the best available knowledge for the Soil Health Card Program implemented in India and its neighboring nations in particular, strong, interactive, continuing ties between science and policy, supported by good knowledge management systems, are required.

# **Publication and Collaboration pattern of Indian Library and Information science researchers**

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We attempt to identify the scholarly publications in Library and information science category indexed in Web of Science Core collection (Excluding ESCI). There are 2629 publications contributed by Indian scholars in Library and information science category fetching 28824 citations, with average citation 10.96 per item and h-index 67. 598 (22.74%) of total publications from India are in International collaboration. USA (212), United Kingdom (76), People's republic of China (55) & France (42) are the most preferred countries for collaboration. Swansea University, United Kingdom (28) & University of Texas (16) are the top foreign collaborating organizations. 145 (24.24%) of 598 publications in international collaboration appeared in the year 2021. Gangan Prathap (41) from Abdul Kalam Technological University, Trivandrum, Kerala, B M Gupta (37) & K C Garg (33) from CSIR- NISTADS (now NIScPR), New Delhi are the most prolific scholars on the basis of Publications in Library and information science research in India. Council of Scientific and Industrial research (324), IITs (292) & IIMs are the most contributing (221) are highly productive organization from India. IIMs are the leading organization in international collaboration from Indian in LIS research. 38 of 2629 publications have received more than 100 citations. Journal Scientometrics (301), Electronic Library (112) and International journal of information management (100) are the most preferred journal of publication among Indian LIS researchers.

## **Mapping Heavy Metal Pollution in River System: A Scientometric Analysis**

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Bioaccumulation and biotransformation of heavy metals cause serious pollution in aquatic ecosystems. This has attracted widespread attention toward its negative effect on ecological and human health. In recent years, a number of studies have been done in this area. Among all the heavy metals, Cadmium (Cd) and lead (Pb) have been widely reported for their toxic effect. Detailed research activity on these two pollutants in aquatic ecosystems has not been mapped. It is important to know the key topics and domains in which research is happening. The study has undertaken a scientometric analysis of research in this area. The study identified 33,414 original publications obtained from

topic search covering the period 2010 to 2021 from 'web-of-science' database. CiteSpace and VOSviewer were used to analyze and visualize the identified research profile. The study shows research hotspot keywords are heavy metal, Cd, Pb, PCA, bioremediation, carbon nanotube and sequential extraction. This is based on their centrality in the whole network. Keyword analysis showed that these publications were divided into 12 closely interrelated clusters. Cluster analysis of keyword identify domains of research i.e., taihu lake, ecological risk, adsorption, atmospheric deposition, and potential ecological risk. The study has implications for research assessment and alerting the community to the concerns of the adverse effect of these metals for aquatic ecosystems.

## **Online Healthcare: Good or Bad**

Anshu Arora

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The fast paced development in information and communication technologies (ICT) have resulted in the pervasive consumption of Internet as an significant medium for all recreational, personal, professional and commercial activities. Such activities come under the domain of e-commerce have aided new business models to develop in many diverse commercial endeavours comprising of health and pharmacy and range of medical practices.

This paper investigates the increasing consumption pattern and rise in 'lifestyle-oriented' diseases that pose a major threat to our development. With a rapidly increasing population base where more than half of our population is below 25 years, and an ever-increasing widening gap in service delivery, the healthcare landscape is on the horizon with challenges that will seriously affect the country's capacity to consume its demographic share effectively. Gazing at a desolate future such as this makes it overbearing for all stakeholders to address the grey clouds encircling the healthcare sector and tackle these challenges.

Although Internet Pharmacies have ensued many benefits to the masses, there are very serious health and safety concerns about various aspects of this e commerce activity, especially when legalities, guidelines and strict regulations are not followed. Such concerns raise significant issues regarding social accountability when using ICT. The present research paper looks at the benefits and problems associated with Internet pharmacies with a view to discussing some of the challenges. It argues that many of these challenges are existing because of the nature of the Internet itself. Along with it, there are the social and economic realities, diverse national regulatory structures and the toil of enforcing national laws outside of legal jurisdictions. The paper discusses how some of the existing challenges may be resolved.

**Keywords:** Healthcare, E-commerce, ICT, Online, Challenges in healthcare

## **Implications of Research Collaboration, Multidisciplinary Character and Citations in Information Science**

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The present study envisages that the author collaboration impacts citations and hence the multidisciplinary character can be identified and in order to validate the premise, the present study was undertaken in the field of Information science. This study encompasses the collaboration effect and the reasons of getting a greater number of citations. Furthermore, it also studied the multidisciplinary character of the field by identifying the collaboration of articles with other subject areas of research. The study used web of science database in which three indexes SCIE, SSCI and A&HCI have been used for collecting the data using the WoS subject categories as search option. A total of 322,317 publication have been index by SCI-E, SSCI and A&H CI of Web of science.

In terms of multidisciplinary character, the maximum collaboration was with the subject computer science (Information Systems and Interdisciplinary Applications) (18.965%), followed by Management (3.796%), Communication (2.509%), Health Care Sciences Services (1.985%), Medical Informatics (1.985%), Social Sciences Interdisciplinary (1.919%) and other allied areas. After analysing the 10 core Information Science Journals with top 50 highly cited articles, it was found that the author collaboration has not any huge impact on the number of citations, it is perhaps the journal which makes an impact about the citations in the field. The top cited publications were occupied by both single and multiple authors. In terms of the contributions in the field, the 'library journal' has published the highest number of documents (152,076), followed by 'scientist' with 14,325, Scientometrics with 6581, journal of American medical Informatics Association with 6397 and Wilson library bulletin with 4273 documents in the field.

## **Study the International Trends of Rice Research: A Scientometric Analysis**

Lata Kumari and Suvita Rana

*CSIR-National Institute of Science Communication and Policy Research, Dr KS Krishnan Marg, Pusa, New Delhi, Delhi 110012*

Rice has a high domestic consumption, which contributes 23% of the calories consumed by the worldwide human population and it is also an export commodity. The Study highlights the importance of Social Network Analysis (SNA) for Scientometrics research.

It looks at the various tools and techniques that help to draw new insights from the Scientometrics data. The paper introduces some of the important concepts of SNA such as the different types of Centrality, Weak ties, Ego Network, Structural holes etc. The importance of these concepts are demonstrated by a case study of rice research based on research papers.

Public funded institutions are dominating the whole research with universities and research institutions playing a key role. The lack of connectivity with private entities is weak. This is unsurprising as overall research by private entities is not much. The study shows that some authors/institutions play a central role with a high degree of centrality index. They are also the most dominant in terms of outputs. However, some authors/institutions play a key role in connecting different groups demonstrating high betweenness centrality. The rice research has groups which are well connected but overall the network is sparse. This implies the need for more connectivity among authors/institutions to strengthen the overall research in the country.

## **Core journal analysis and subject-wise coverage of the literature on pediatric gastroenterology**

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*Regional Medical  
Library, The Tamil Nadu  
Dr. M.G.R. Medical*

*University, Guindy, Chennai – 600 032*

This paper presents a core journals analysis and subject-wise coverage of records in the field of Pediatric Gastroenterology for the duration 2011 to 2020 in the MEDLINE data which are covered in the PubMed. The aim of this study is to categorize the core journals and its subject-wise coverage of records in the discipline of Pediatric Gastroenterology. A total of 18033 records have been found in the field of Pediatric Gastroenterology. It has been found that the maximum number of records (3291) was published during the year 2020, followed by 2873 in the year 2018 and 2593 in the year 2019. It has been found that a total of 43.06% of cited records were “journal articles”. In zone-1 & 2 combined; It has been observed that 56 frequently cited journals were Gastroenterology subject journals out of 217 journals covered; followed by 46 frequently mentioned journals in Pediatrics, 35 frequently mentioned journals in General Medicine, 17 frequently mentioned journals in Surgery, 16 frequently mentioned journals in Hepatology, 11 frequently mentioned journals in Nutrition, 4 each frequently mentioned journals in Genetics, Immunology, Oncology, Pathology and Radiology, 3 frequently mentioned journals in Microbiology, 2 each frequently mentioned journals in Nursing and Pharmacology and 1 each frequently mentioned journal in Allergy, Biochemistry, Dermatology, Epidemiology, Infectious Disease, Nephrology, Neurology, Otorhinolaryngology and Physiology. It has been observed that a total of 217 journals have been categorized as core journals in the field of Pediatric Gastroenterology.

# **SIS Fellowships 2022**



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*From the core of scientific research and education, and having pursued his interest in the interdisciplinary area of science, communication and information dissemination for public good that has been credited as well accomplished contribution being a distinguished information scientist; the Society for Information Science, in recognition of his outstanding and sustained contribution in the field of Information Science and Communication, takes pride in conferring its Award of Fellowship on:*

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Head, MERITE-TSG  
Ministry of Education, Govt. of India

**Presented on 14 October 2022 at SIS Annual Convention 2022  
India International Centre, New Delhi**

**Dr. Manoj Kumar Patariya**  
President



**Society for Information Science**  
New Delhi

**Award of Fellowship**



**Citation**

*With a fine blend of science and mass communication and having pursued her interest in the interdisciplinary area of science, communication and information dissemination among masses, that has led to significant contribution being a distinguished information scientist; the Society for Information Science, in recognition of her outstanding and sustained contribution in the field of Information Science and Communication, takes pride in conferring its Award of Fellowship on:*

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Editor  
*Invention Intelligence and Awishkar*  
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Council of Scientific and Industrial Research  
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- Extraction of metals from ores, sludge and scraps
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- Nanomaterials, bio materials and energy materials
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- Environmental impact assessment
- CFD/DEM modelling and simulation



Constructed wetland for waste water treatment



XPS



Particle Size Analyzer



High Concentration Slurry Transportation



CNC Turning & Milling Machines

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- Technology development for mineral, material, metallurgical and chemical industries
- Contract research and consultancy for process optimization
- TEFR and Basic engineering packages in core area
- Testing of water quality and components in ores, rocks, soils, slags, and processed products
- Skill development

## FACILITIES

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- Coal characterization
- Processing of natural gemstones for value addition
- State-of-the art analytical equipments for characterization of ores, minerals & materials
- Commercial scale production facility for fly ash and red mud building materials
- Mechanical workshop for design and fabrication
- Biomass operated cook stoves and testing lab
- Technology validation



Fly Ash & Red Mud Bricks



EPMA



XRD



Plasma Spray Coating



Column Flotation Unit



Hydrogen Plasma Reactor



TEM



X-ray Micro CT



Microwave Plasma Reactor



Scanning Electron Microscope



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- High-Power Microwave Systems Group
- High-Frequency Devices and Systems Group

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- 140 W Ku-band Space TWT, 2.6 MW Magnetron for LINAC, Mercury-free VUV/UV Plasma Source, Pseudospark Switches, Cathode System (MTRDC), Software Packages, Related Infrastructure & Technologies, High-power Microwave Window Technology, Long-life Dispenser Cathodes, 40 kV 3 kA Thyatron, 25 kV 1 kA Thyatron, Design and Technology Development for Gyrotron Devices, 6 MW Pulse 24 kW Average Power S-Band Klystron, 5 MW Pulsed S-band Klystron, 6 Ghz 20 W Helix TWT, 60 W Space TWT, S-band 30 W Helix TWT, Broadband 40 W Mini Helix TWT, C-band 75 kW CC-TWT, 3 MW Pulsed S-Band Magnetron, 2 MW S-band Tunable Pulsed Magnetron, S-band 1 MW Magnetron, S-band 500 kW Magnetron, S-band 400 W Carcinotron
- Ksheer Tester, Ksheer Scanner, Grid-compatible Inverters, 5 kW Solar-power Drive for Pumps, RO Water Plant Automation, Specialised Power Supplies and Pulse Power Systems for High Power Microwave Tubes, Sensor Networks, Wired and Wireless Communication Network for Underground Mines, Electronic Tongue, Electronic Nose, NIR-based Instrumentation for Chemometrics, Electronic Instrumentation for Fresh Water Aqua-culture and RO Systems, Machine Vision Systems for Bakeries and Steel Mills, Machine Vision Systems for On-line Sorting and Grading of Fruit, Monitoring and Control System for Paper and Pulp Industry, Process Control Instrumentation for Sugar Industry, Withering Controls for Tea Processing, Converters/PWM Actuators, High-power ac and dc Drives

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सीएसआईआर-हिमालय जैवसंपदा प्रौद्योगिकी संस्थान  
CSIR - Institute of Himalayan Bioresource Technology

सीएसआईआर की एक संघटक प्रयोगशाला/A Constituent Lab of CSIR  
पालमपुर (हि.प्र.) भारत/ Palampur-176061 (H.P.) INDIA



परिकल्पना: जैवआर्थिकी के उन्नयन हेतु प्रौद्योगिकीय उद्भवता एवं विकास में हिमालयी जैवसंपदा के संपोषणीय उपयोग द्वारा विश्व स्तर पर अग्रणी होना  
उद्देश्य: सामाजिक, औद्योगिक, पर्यावरणीय और अकादमिक हित हेतु हिमालयी जैवसंपदा से प्रक्रमों, उत्पादों और प्रौद्योगिकियों की खोज, नवोन्मेष, विकास एवं प्रसार।



संस्थान की निम्नलिखित व्यवसायिक उत्पादन के लिए प्रौद्योगिकीयाँ

- रेडी टू ईट क्रिस्पी फ्रूट एवं परम्परागत व्यंजन
- मूल्यवर्धित बक़्कवीट
- बहु-अन्नीय (मल्टीग्रेन) उच्च प्रोटीन पेय एवं तत्काल (इन्स्टैंट) सूप
- स्पिरूलीना आधारित एनर्जी बार
- पादप वृद्धि हेतु राइजोबेक्टीरिया
- हींग
- केसर
- कैला लिली, जरबेरा, गुलदाउदी की उन्नत किस्में
- टी-वाइन
- रेडी टू सर्व चाय निर्माण
- हर्बल चाय
- मिनी डिस्टिलेशन यूनिट (हर्बोस्टिल ट्रेडमार्क)
- कम्पोस्ट बूस्टर
- आयरन युक्त फ्रूट बार और केन्डी
- टी विनेगर
- चाय कैटेकिन,
- हर्बल सोप
- हर्बल इन्सेन्स कोन
- हेंड सैनिटाइजर
- गुणवत्तायुक्त और स्वच्छ शहद हेतु उन्नत बी हाइव
- स्टीविया पाउडर और स्टीविया तरल द्रव्य (कम कैलोरीयुक्त स्वीटनर)
- अर्नेबिया यूक्रोमा से नेफथोकीन (लाल रंग) के लिए इन विट्रो उत्पादन प्रणाली
- खाद्य प्राकृतिक रंग, हर्बल लिपस्टिक
- हाइड्रोपोनिक खेती की तकनीक से लिलियम और टयूलिप के पुष्पण काल में कमी
- वेलेरियाना जटामांसी अपस्थानिक जड़ संवर्धन प्रौद्योगिकी
- विटमिन डी<sub>2</sub> युक्त शिटाके मशरूम
- एल-एस्परजिनेस
- हाइड्रॉक्सीमिथाइलफ्यूरल (5-एचएमएफ)
- सेल्यूलोसिक बायोमास से टेक्सटाइल फाइबर में परिवर्तित करने की पर्यावरण अनुकूलन प्रक्रिया

संपर्क करें:

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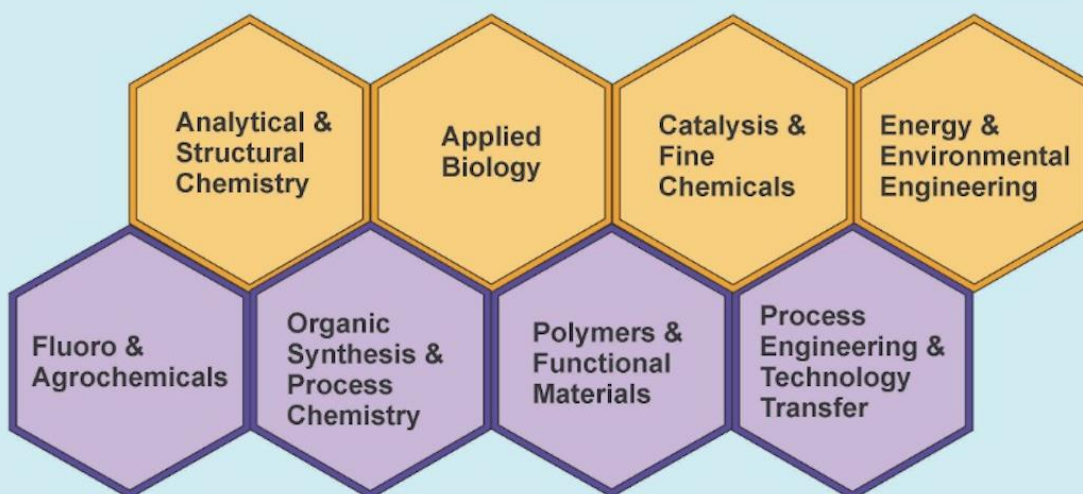
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To Serve society by creating an outstanding knowledge base in chemistry and chemical technology

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