University of Moratuwa

Research Week 2023

30 November - 08 December, 2023

Research Performance of University of Moratuwa

Research Week 2023

Research Performance of University of Moratuwa.

» Preparation

- Research Support Services Division, Library, University of Moratuwa.
- Office of Research, University of Moratuwa.

» Acknowledgement

Mrs. Dimuthu Peterson
Library Customer Service Office,
Library, Murdoch University, Australia.

Prof. Indika Perera
Department of Computer Science and Engineering,
Faculty of Engineering, University of Moratuwa.

Dr. Thiloka de Silva
Department of Decision Sciences
Faculty of Business, University of Moratuwa.

Dr. Sandun Dassanayake.
Department of Decision Sciences
Faculty of Business, University of Moratuwa

» Advisory Panel

Mrs. Ruvini Kodikara
Prof. Ajith de Alwis
Prof. Ruwan Gopura
Prof. Udayangani Kulatunga
Dr. Chulantha Jayawardena

» Assistance in Data Analytics

Mrs. Ganga Godakanda
Mr. Eranga Wickrama
Mrs. Inoka Gunathilake
Mrs. Chethani Lakmali
Mr. Thilina Gamage

» Conceptual Design

Mrs. Thushari Seneviratne

» Poster Design

Mr. Melro Mendis

Name: Research Support Services Division

Department: Library, University of Moratuwa

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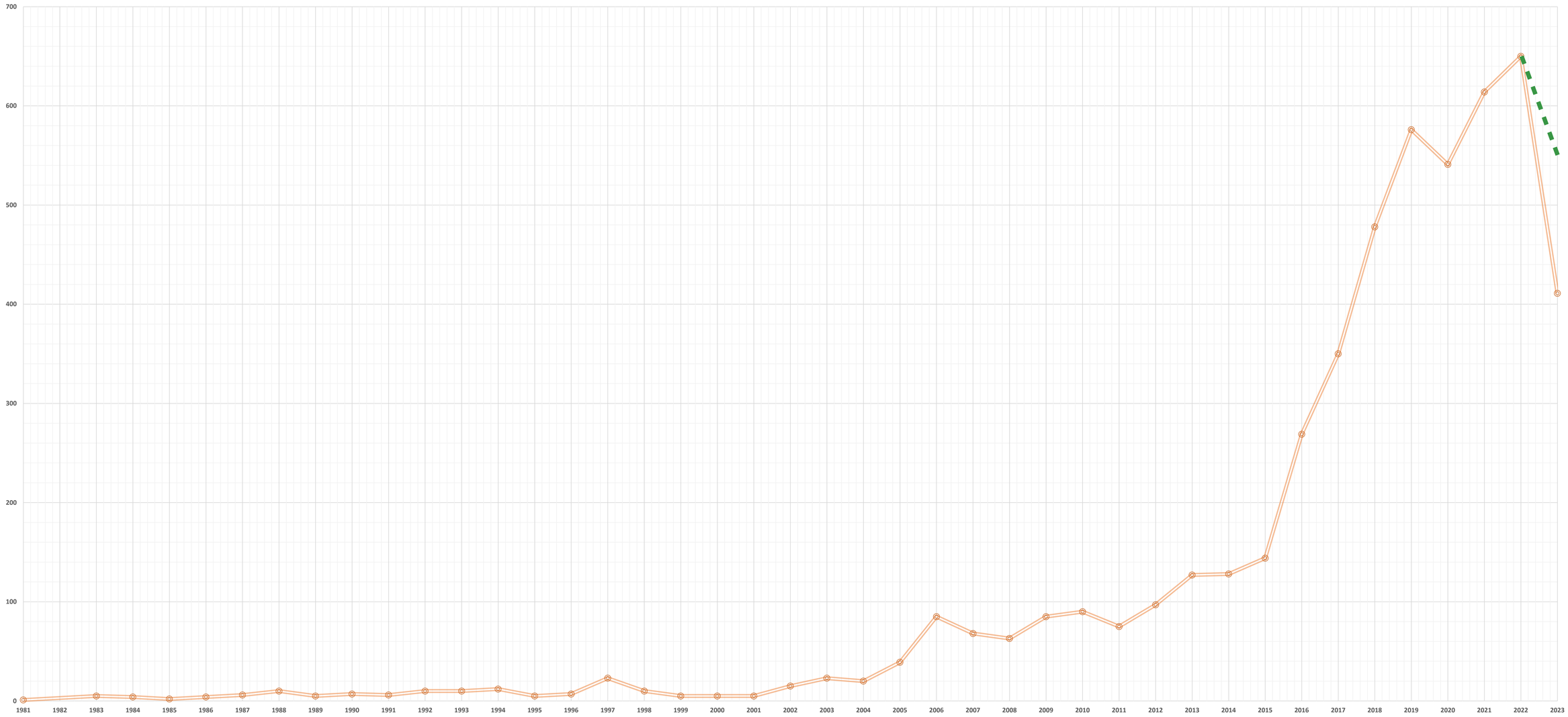
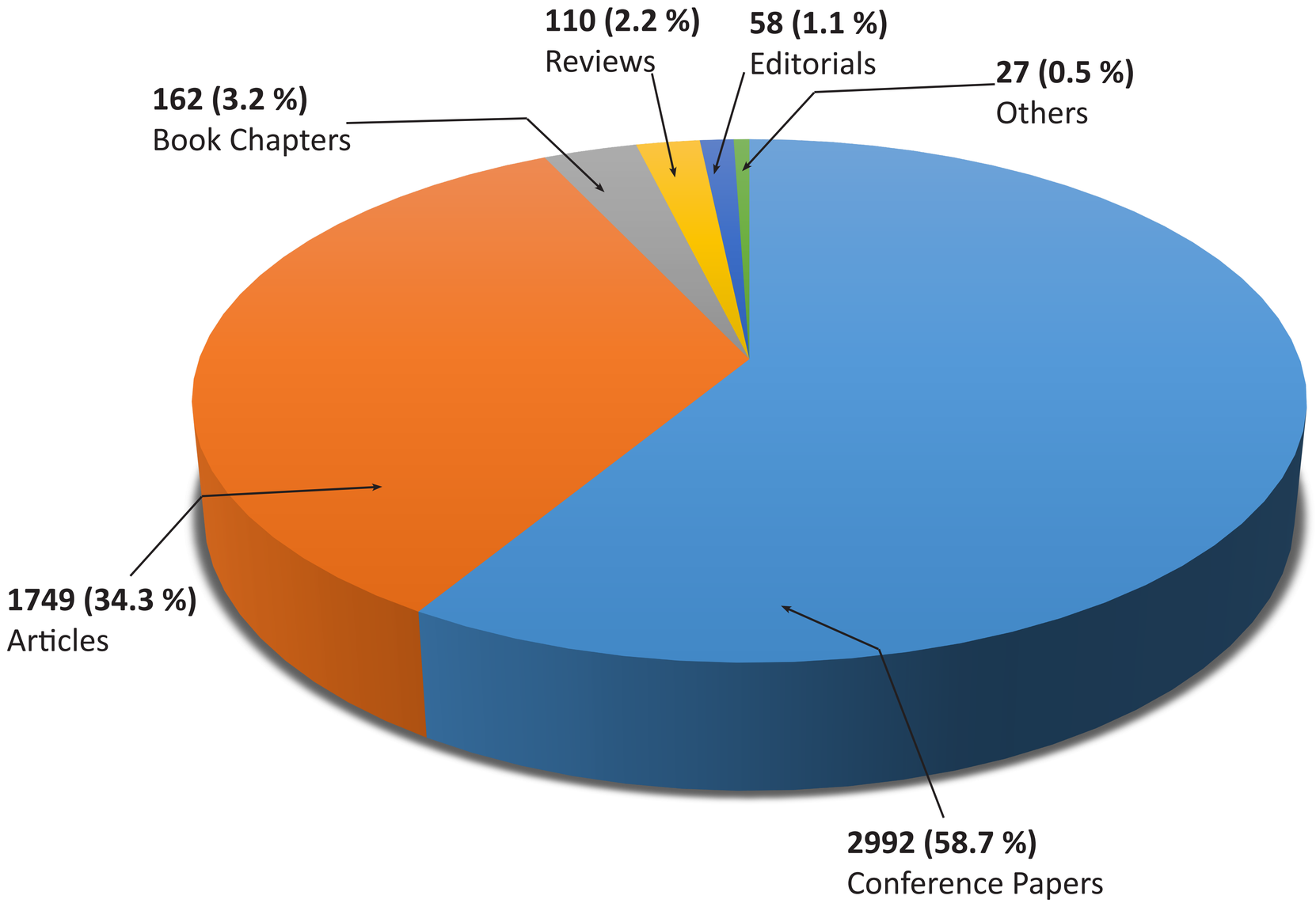
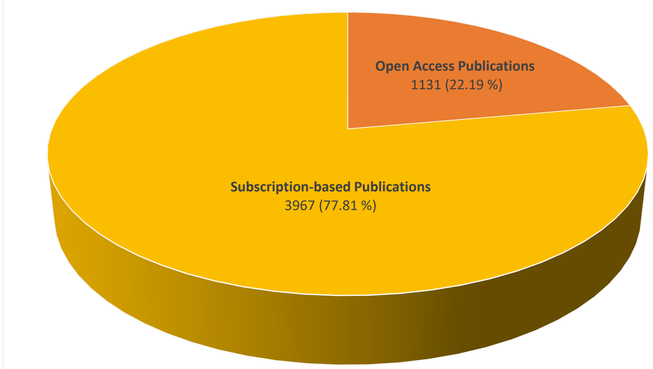
Year-wise Distribution of Publications (1972 - 2023 Nov.)



Source: Scopus (2023)

Research Output by Type of Publications (1972 - 2023 Nov.)





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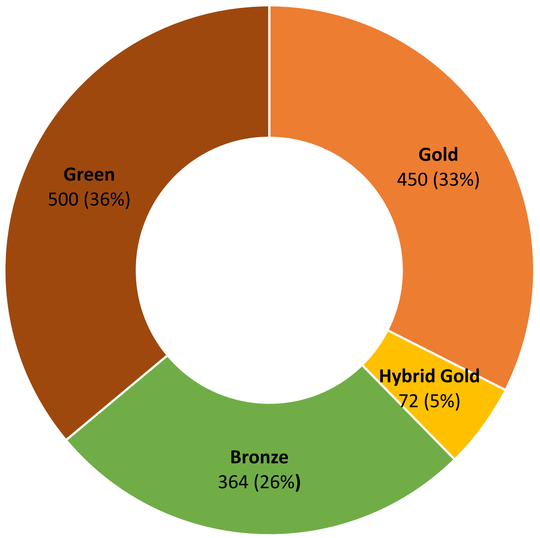
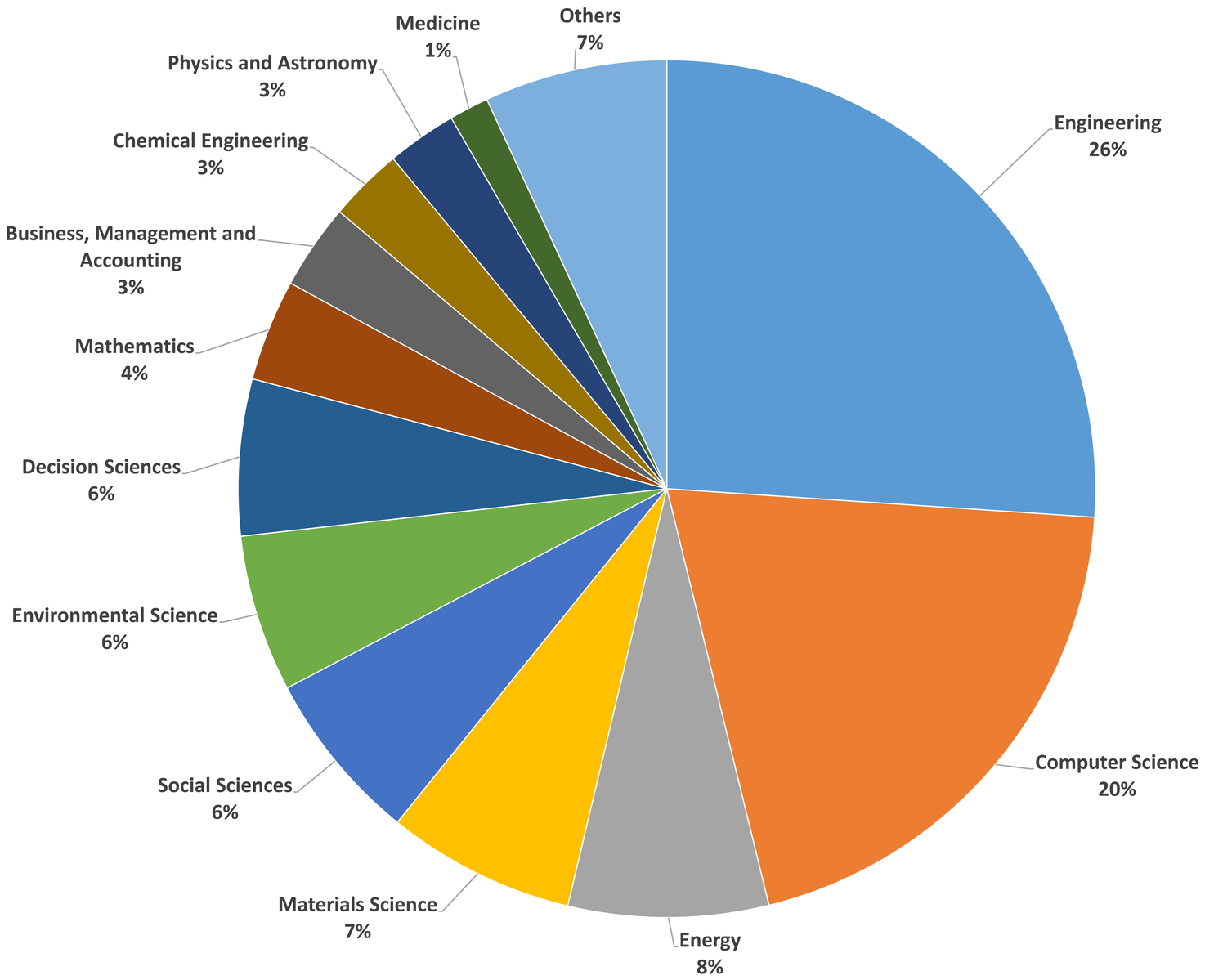


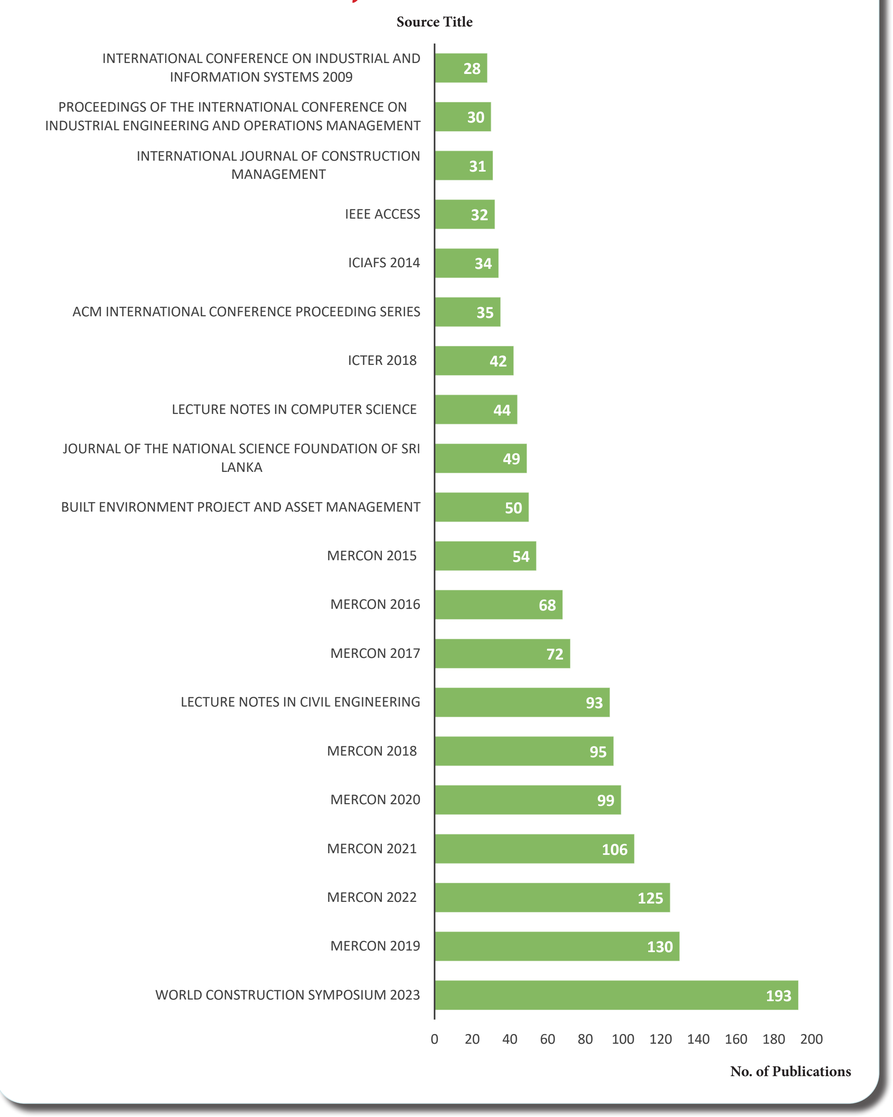
Open Access Categories

Source: Scopus (2023)

Research Output by Subjects (1972-2023 Nov.)



Top Publications

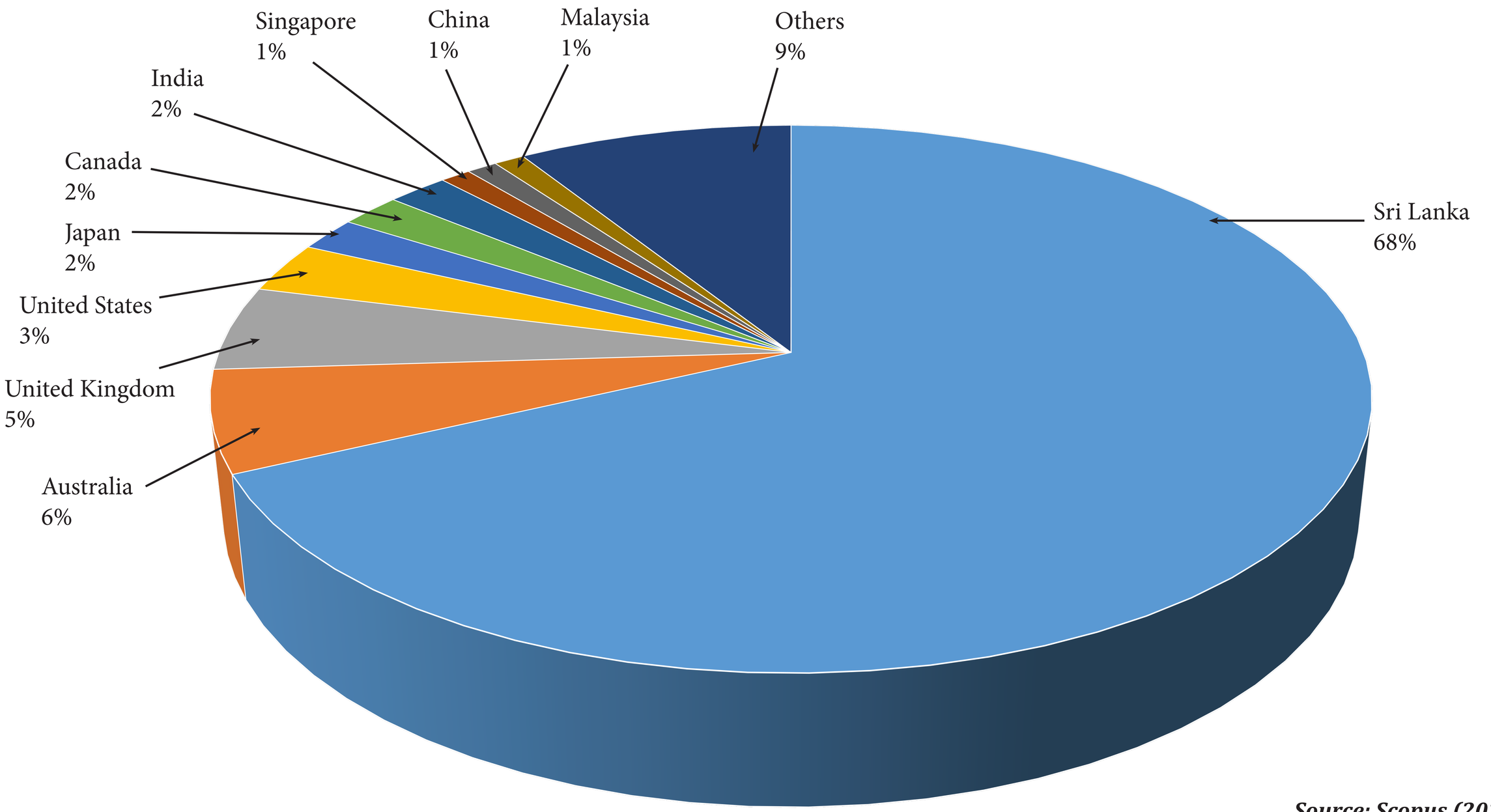


Subjects are based on All Science Journal Classification (ASJC). ASJC System is used in Scopus to classify publications under four broad subject areas (life sciences, physical sciences, health sciences and social sciences and humanities) which are further divided into groups and 333 minor fields.

Source: Scopus (2023)

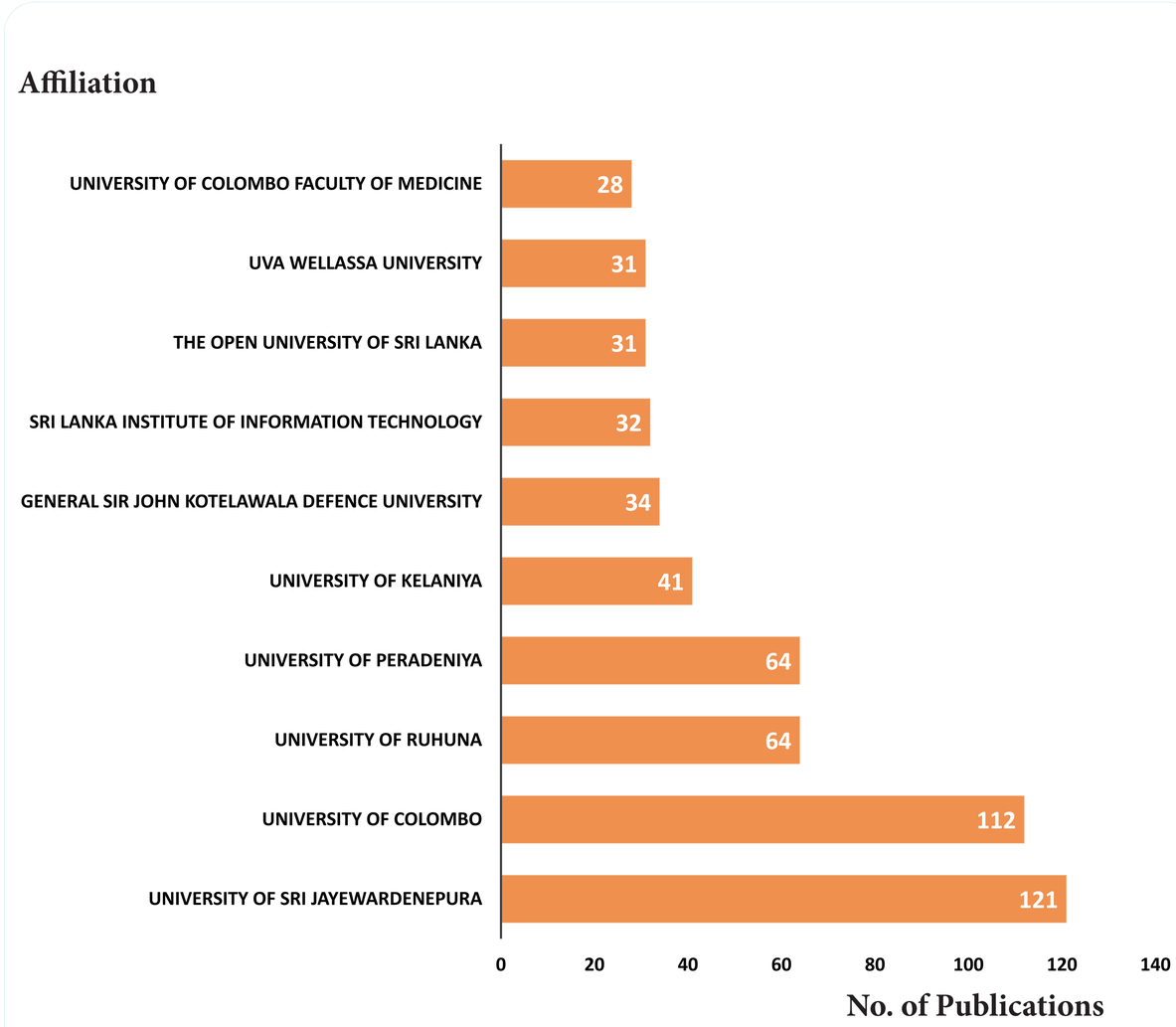
Name: Research Support Services Division
Department: Library, University of Moratuwa

Geographical Distribution of Publications (1972-2023 Nov.)

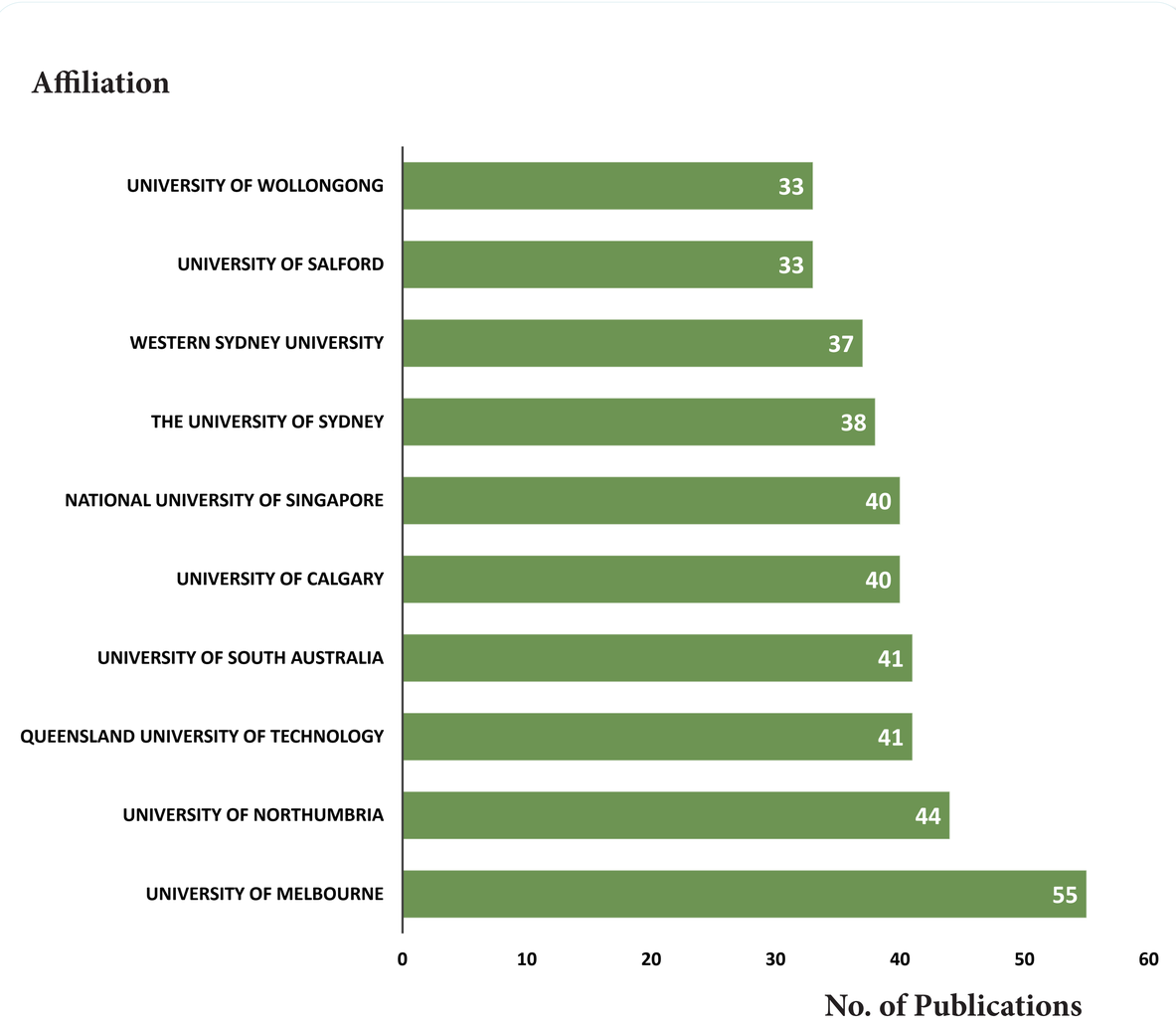


Source: Scopus (2023)

Top Collaborating Affiliations (1972-2023 Nov.)



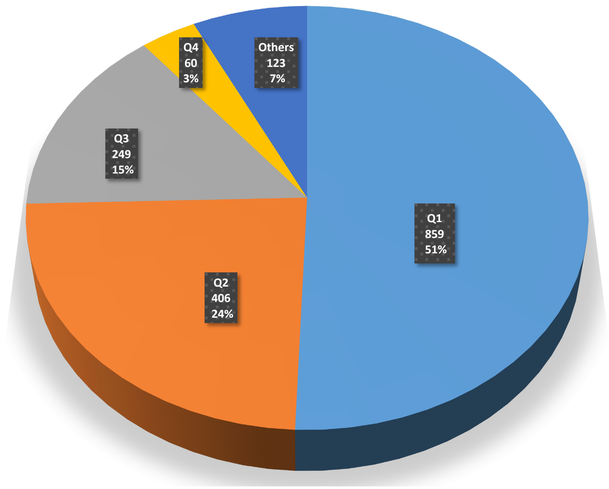
National Collaboration



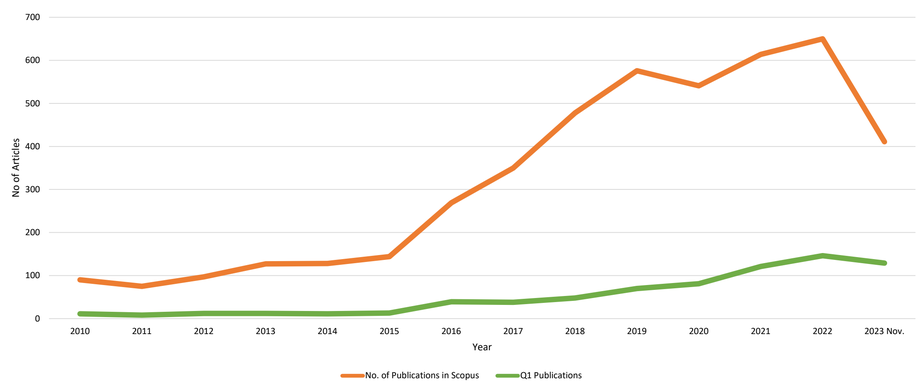
International Collaboration

Source: Scopus (2023)

Articles According to SCimago Journal Rank (1972-2023 Nov.)



Articles According to SCimago Journal Rank



Publications in Scopus vs Q1

Subject	Total	Q1	Q2	Q3	Q4	Other
Engineering	642	369	159	67	18	29
Environmental Science	298	157	72	30	9	30
Computer Science	293	145	70	41	8	29
Social Sciences	293	166	60	25	4	38
Business, Management and Accounting	262	107	101	33	16	5
Material Science	253	128	80	30	6	9
Energy	178	126	19	17	2	14
Earth and Planetary Sciences	116	56	43	7	8	2
Chemical Engineering	93	43	38	9	0	3
Mathematics	88	57	13	10	4	4
Agricultural and Biological Sciences	82	26	32	16	3	5
Decision Sciences	76	60	5	1	3	7
Chemistry	74	31	26	10	0	7
Medicine	73	39	21	5	1	7
Multidiciplinary	72	21	0	44	0	7
Physics and Astronomy	65	27	19	11	2	6
Biochemistry, Genetics and Molecular Biolo.	55	30	12	6	0	7
Economics, Econometrics and Finance	55	24	8	17	5	1
Arts and Humanities	31	24	5	0	0	2
Psychology	12	9	3	0	0	0
Neuroscience	10	4	2	4	0	0
Immunology and Microbiology	9	3	5	1	0	0
Nursing	7	5	1	0	0	1
Health Professiond	6	3	3	0	0	0
Pharmacology, Toxicology and Pharmaceutics	6	4	1	0	0	1
Dentistry	1	1	0	0	0	0

Subjects are based on All Science Journal Classification (ASJC). ASJC System is used in Scopus to classify publications under four broad subject areas (life sciences, physical sciences, health sciences and social sciences and humanities) which are further divided into groups and 333 minor fields.

Source: Scopus (2023)

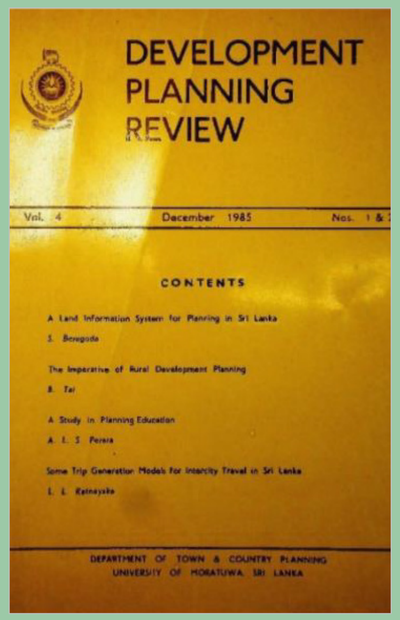
Name: Research Support Services Division
Department: Library, University of Moratuwa

UoM Journals

Development Planning Review

Department of Town and Country Planning,
Faculty of Architecture.

Published during 1982-1985

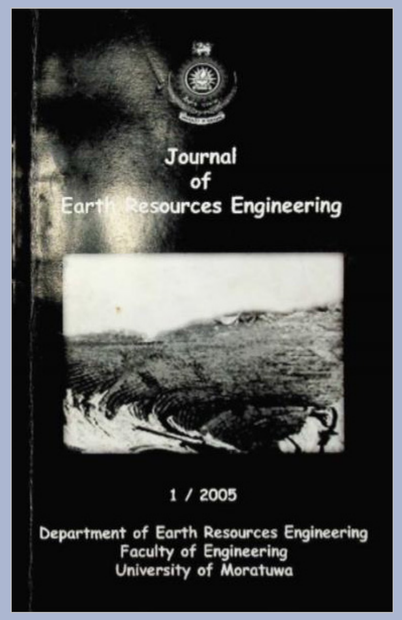


Founder Editor
Prof. Wille Mendis

Journal of Earth Resources Engineering

Department of Earth Resources Engineering,
Faculty of Engineering.

Published in 2005

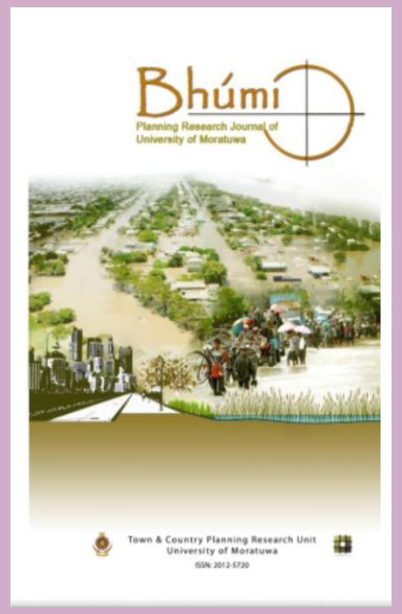


Founder Editor
Prof. (Mrs) Shiromi Karunaratne

Bhumi

Department of Town and Country Planning,
Faculty of Architecture.

Publishing since 2009

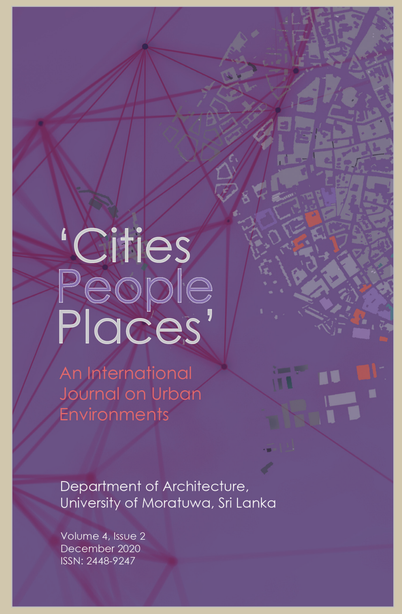


Founder Editors
Prof. Jagath Munasinghe &
Prof. PKS Mahanama

Cities People Places: An International Journal

Cities People Places: An International Journal on Urban Environments,
Faculty of Architecture.

Publishing since 2015

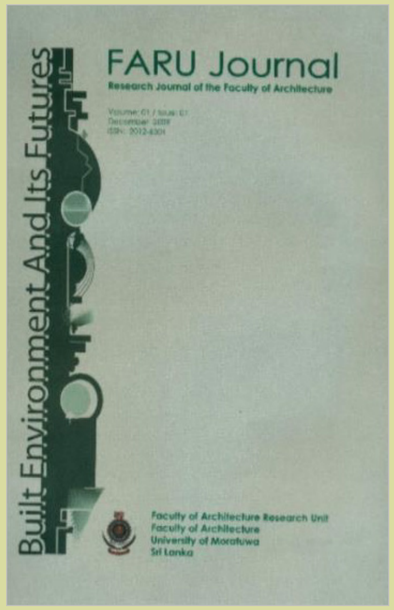


Founder Editor
Prof. Ranjith Dayarathne

FARU Journal

FARU Journal
Faculty of Architecture Research Unit,
Faculty of Architecture.

Publishing since 2009



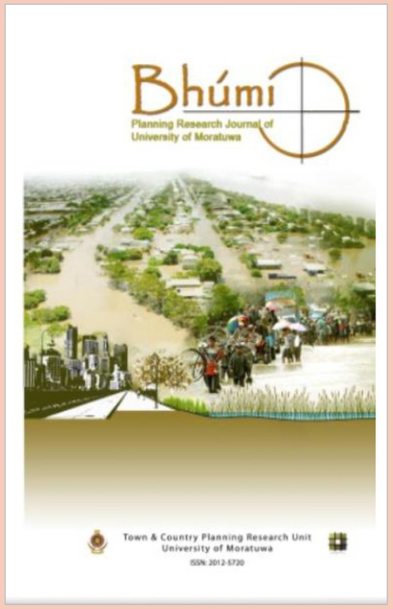
Founder Editor
Prof. Harsha Munasinghe

Source: Library, UoM (2023)

UoM Journals in Sri Lanka Journals Online

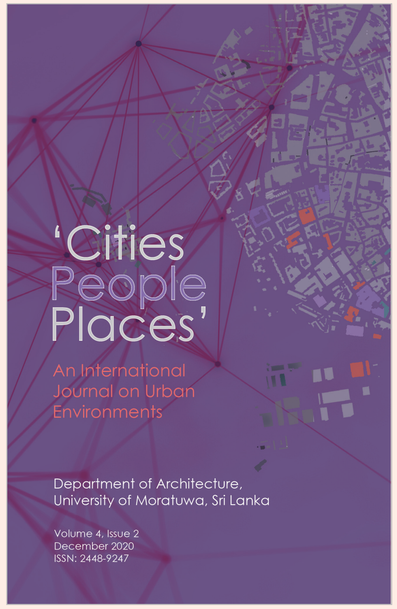
https://sljol.info/site/

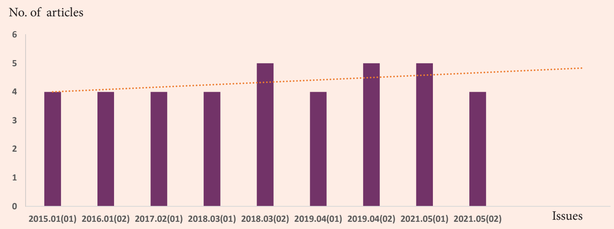
Bhumi



Mr. Gihan Karunaratne
Guest-Editor,
https://bhumi.sljol.info/

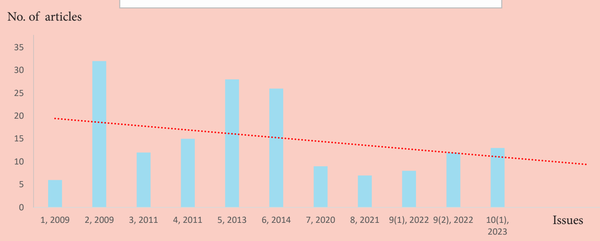
Cities People Places: An International Journal





Dr. Oraphan Thamat
University of Mahasarakam,
https://cpp.sljol.info/

FARU Journal



Dr. Pournima Sridarran
Guest Editor, FARU Journal.
https://faruj.sljol.info/

Source: Library, UoM (2023)

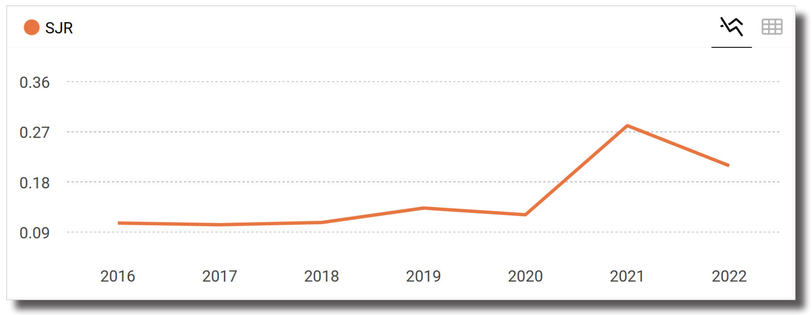
ISVS e-journal

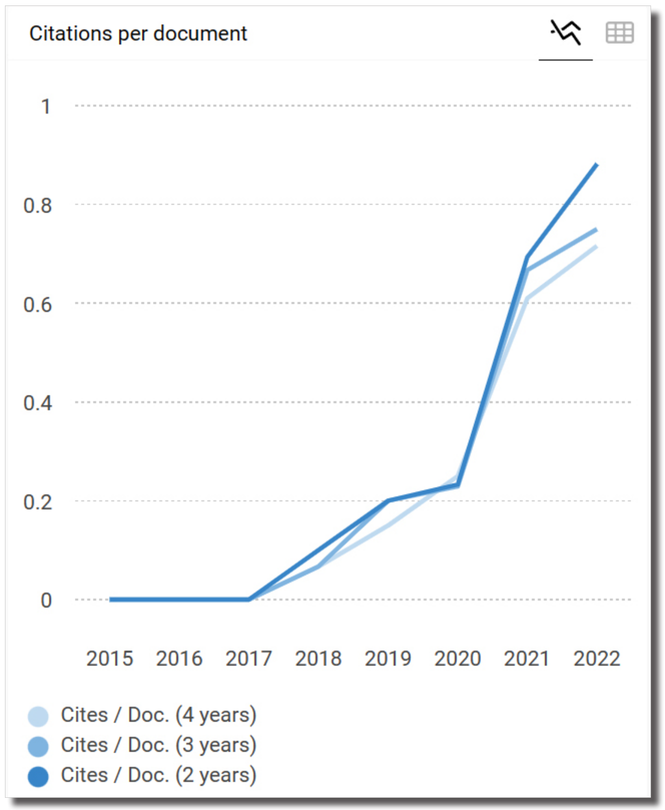
International Society for the Study of Vernacular Settlements

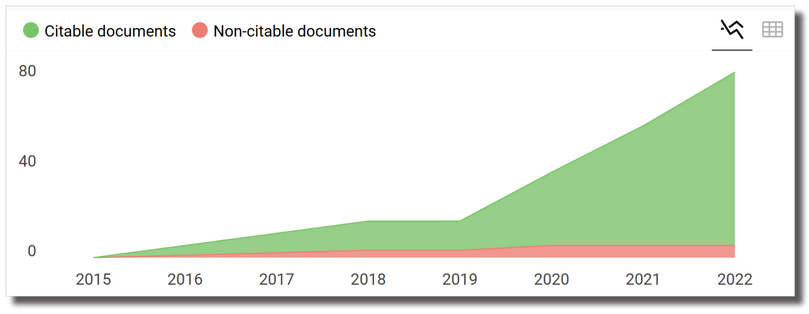
Published from 2015-2019 by:
ISVS Journal Secretariat,
CEPT University,
Ahmedabad,
India

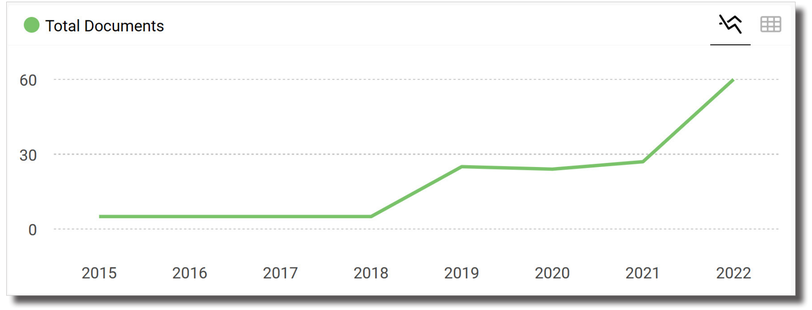
Published since 2020 by:
ISVS Journal Secretariat,
Center for Cities,
University of Moratuwa,
Katubedda,
Sri Lanka

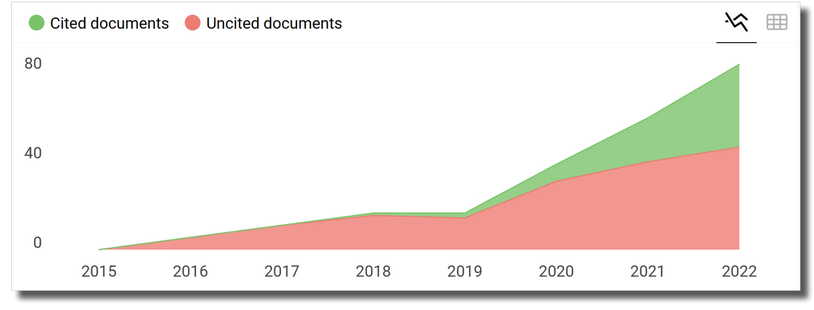
Centre for Cities

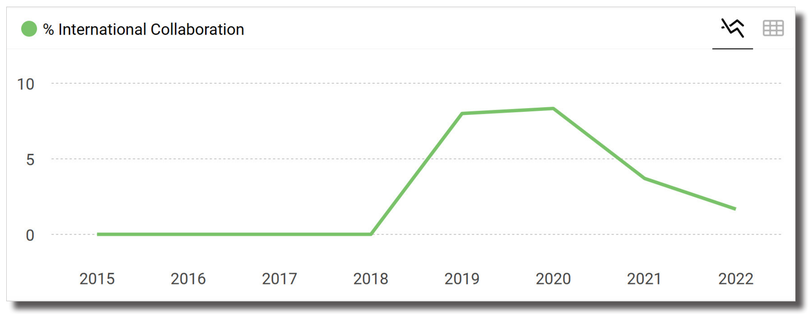


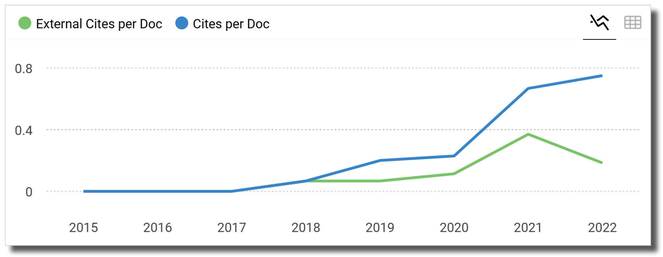


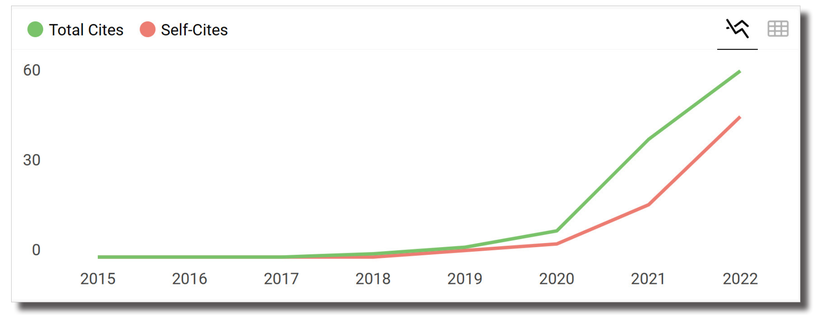












Source: Scimago Journal & Country Rank (2022)

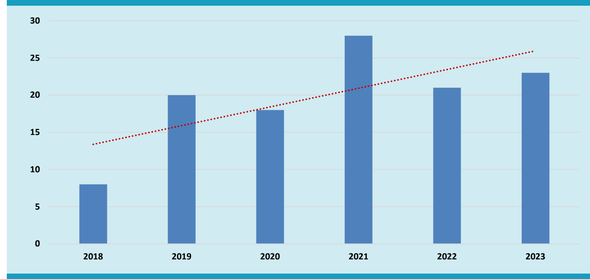
Publications of UoM Research Units

Business Research Unit
BRU

BUSINESS RESEARCH UNIT
FACULTY OF BUSINESS
UNIVERSITY OF MORATUWA

First Director - Prof. Vathsala Wickramasinghe
Present Director - Dr. Prasanna Illankoon

International Conference on Business Research
ICBR



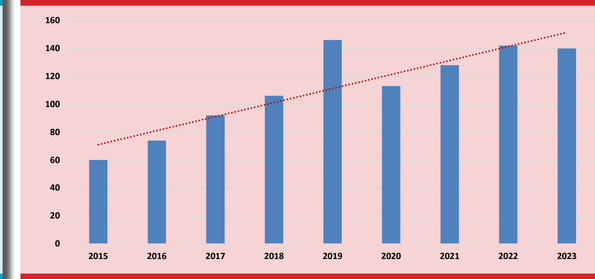
FACULTY OF BUSINESS RESEARCH UNIT
(ICBR)
http://dl.lib.uom.lk/handle/123/13248

Engineering Research Unit
ERU

Engineering Research Unit
University of Moratuwa
Sri Lanka

First Director - Prof. KKYW Perera
Present Director - Dr. Sulochana Sooriyaarachchi

Moratuwa Engineering Research Conference
MERCon



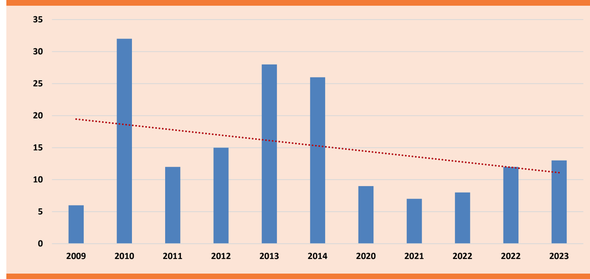
FACULTY OF ENGINEERING RESEARCH UNIT
(ERU & MERCON)
http://dl.lib.uom.lk/handle/123/14670

Faculty of Architecture Research Unit
FARU

FARU | FACULTY OF ARCHITECTURE RESEARCH UNIT

First Director - Prof. Rohinton Emmanuel
Present Director - Dr. (Mrs.) Sumanthri Samarawickrama

Faculty of Architecture Research Unit Conference
FARU



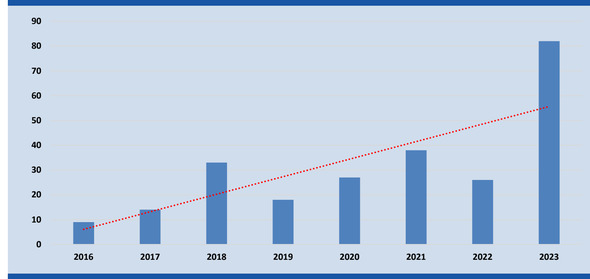
FACULTY OF ARCHITECTURE RESEARCH UNIT
(FARU)
http://dl.lib.uom.lk/handle/123/14701

Information Technology Research Unit
ITRU

ITRU
Faculty of Information Technology

First Director - Prof. AS Karunananda
Present Director - Dr. (Mrs.) Thilini Piyathilake

International Conference on Information Technology Research
ICITR



INFORMATION TECHNOLOGY RESEARCH UNIT
(ITRU & ICITR)
http://dl.lib.uom.lk/handle/123/14718

Source: Library, UoM (2023)

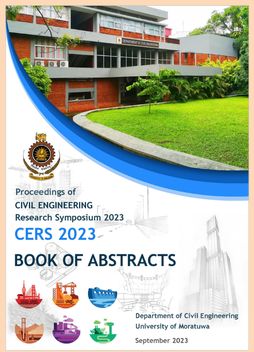
Name: Research Support Services Division
Department: Library, University of Moratuwa

Proceedings of Departmental Conferences / Symposia 2023

Civil Engineering Research Symposium (CERS)

Department of Civil Engineering
Since 2011

Founder Editor: Dr. (Mrs.) Premini Hettiarachchi

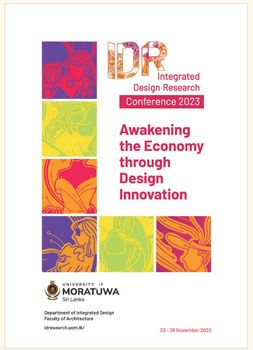


Editors: Prof. HMY Chinthaka Mallikarachchi
Dr. (Mrs.) Premini Hettiarachchi
Dr. Sumudu Herath
Dr. Lakshitha Fernando

Integrated Design Research Conference (IDR)

Department of Integrated Design
Since 2022

Founder Editor: Dr. (Mrs.) Sumanthri Samarawickrama

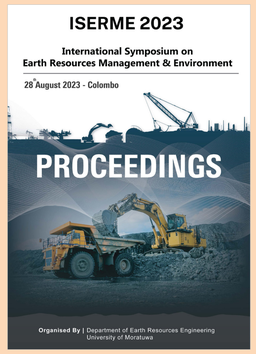


Editor: Dr. (Mrs.) Sumanthri Samarawickrama

International Symposium on Earth Resources Management & Environment (ISERME)

Department of Earth Resources Engineering
Since 2017

Founder Editors: Prof. AMKB Abeysinghe
Dr. (Mrs.) Anjula Dassanayake
Dr. Yogarajah Elakneswaran



Editor: Dr. Chulantha Jayawardena

International Urban Design e-Conference on Cities, People and Places (ICCPP)

Department of Architecture
Since 2013

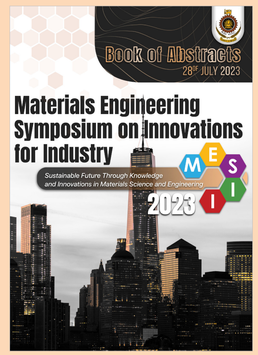
Founder Editors: Prof. Ranjith Dayarathne
Dr. Janaka Wijesundara

Editors: Prof. Ranjith Dayarathne
Dr. Janaka Wijesundara

Materials Engineering Symposium on Innovations for Industry (MESII)

Department of Materials Science and Engineering
Since 2017

Founder Editor: Mr. S Sivahar

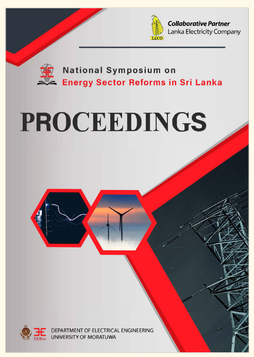


Editor: Mr. S Sivahar

National Symposium on Power Sector Reforms in Sri Lanka.

Department of Electrical Engineering
In 2023

Founder Editor: Dr. Manuja Gunawardana



Textile Engineering Research Symposium (TERS)

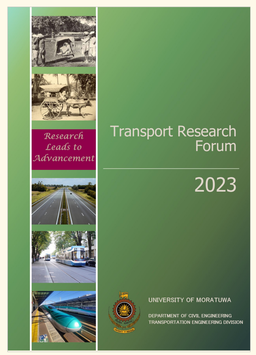
Department of Textile and Apparel Engineering
In 2023

Founder Editors: Eng. SN Niles
Dr. Gayani K Nandasiri
Ms. Maadri Pathirana
Ms. Chamika Madhurangi

Transport Research Forum (TRF)

Department of Civil Engineering
Since 2010

Founder Editor: Prof. HR Pasindu



Editor: Eng. Nalaka Jayantha

Undergratuate Research Symposium (ChemECon)

Department of Chemical and Process Engineering
Since 2019

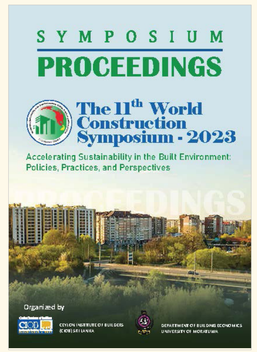
Founder Editor: Prof. PG Rathnasiri

Editors: Prof. Shantha Walpalage
Prof. Sanja Gunawardena
Prof. Mahinsasa Narayana
Prof. Manisha Gunasekera

World Construction Symposium (WCS)

Department of Building Economics
Since 2012

Founder Editors: Dr. S Senaratne
Prof. YG Sandanayake

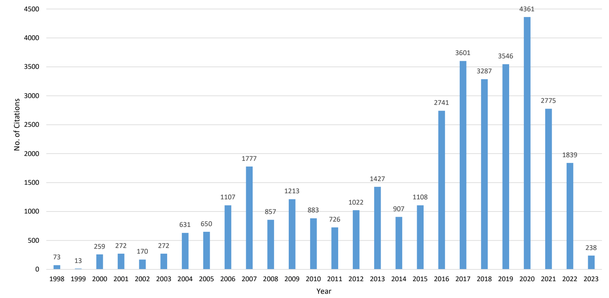


Editors: Prof.(Ms) YG Sandanayake
Prof.(Ms) KGAS Waidyasekara
Dr.(Ms)Thanuja Ramachandra
Dr. Tharushi Ranaweera

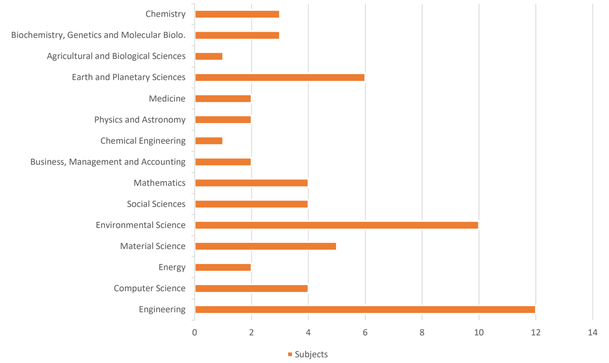
Source: UoM Institutional Repository (2023)

Highly Cited Articles in Scopus as at 20th Nov. 2023

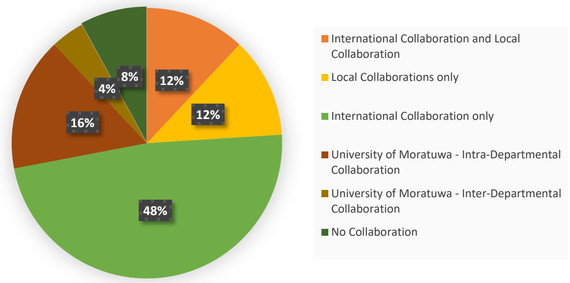
Rank	Title	Year	Type of Document	Access Type	Almetric Attention Score	Source title	H-Index	Impact Factor (Web of Science)	CiteScore (Scopus)	Scimago Journal Rank
1	Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy	2020	Review	Open Access	2308	Environmental Research	164	8.3	11	Q1
2	SymPy: Symbolic computing in python	2017	Article	Open Access	0	PeerJ Computer Science	31	2.5	4	Q2
3	Tea waste as a low cost adsorbent for the removal of Cu and Pb from wastewater	2007	Article	Subscription-based	0	Chemical Engineering Journal	280	15.1	21.5	Q1
4	Developments in hardware systems of active upper-limb exoskeleton robots: A review	2016	Article	Subscription-based	4	Robotics and Autonomous Systems	134	4.3	9.1	Q1
5	The influence of urban design on outdoor thermal comfort in the hot, humid city of Colombo, Sri Lanka	2006	Article	Subscription-based	1	International Journal of Biometeorology	189	7.4	11.3	Q1
6	Urban shading - A design option for the tropics? A study in Colombo, Sri Lanka	2007	Article	Subscription-based	0	International Journal of Climatology	63	6.4	8.7	Q1
7	The story of rare earth elements (REEs): Occurrences, global distribution, genesis, geology, mineralogy and global production	2020	Review	Subscription-based	7	Ore Geology Reviews	118	3.3	6.2	Q1
8	Environmental challenges induced by extensive use of face masks during COVID-19: A review and potential solutions	2021	Review	Open Access	130	Environmental Challenges	19	4.42	3.8	Q2
9	Forecasting: theory and practice	2022	Review	Open Access	119	International Journal of Forecasting	110	7.9	12	Q1
10	Neural networks for predicting properties of concretes with admixtures	2001	Article	Subscription-based	0	Construction and Building Materials	230	7.4	12.4	Q1
11	Additive Manufacturing of Piezoelectric Materials	2020	Review	Subscription-based	0	Advanced Functional Materials	376	19	27.9	Q1
12	An approach to delineate groundwater recharge potential sites in Ambalantota, Sri Lanka using GIS techniques	2016	Article	Open Access	0	Geoscience Frontiers	77	8.9	15.3	Q1
13	A hybrid tool to combine multi-objective optimization and multi-criterion decision making in designing standalone hybrid energy systems	2013	Article	Subscription-based	0	Applied Energy	264	11.2	21.1	Q1
14	Deepcaps: Going deeper with capsule networks	2019	Conference Paper	Open Access	N/A	Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition	422 (h5 index)	N/A	N/A	N/A
15	Graduates', university lecturers' and employers' perceptions towards employability skills	2010	Article	Subscription-based	0	Education and Training	78	3.058	6.6	Q1/ Q2
16	Compressive strength characteristics of cement stabilized rammed earth walls	2007	Article	Subscription-based	1	Construction and Building Materials	230	7.4	12.4	Q1
17	Reduction of concrete sorptivity with age through carbonation	2000	Article	Subscription-based	0	Cement and Concrete Research	262	11.4	19.8	Q1
18	Comparative assessment on the extraction of carotenoids from microalgal sources: Astaxanthin from H. pluvialis and β-carotene from D. salina	2019	Review	Subscription-based	6	Food Chemistry	302	8.8	14.9	Q1
19	Urban heat islands in humid and arid climates: Role of urban form and thermal properties in Colombo, Sri Lanka and Phoenix, USA	2007	Article	Open Access	0	Climate Research	116	2.459	2.8	Q3
20	Reconfigurable Intelligent Surface Assisted Two-Way Communications: Performance Analysis and Optimization	2020	Article	Open Access	N/A	IEEE Transactions on Communications	241	8.3	13.6	Q1
21	Influence of urban morphology and sea breeze on hot humid microclimate: The case of Colombo, Sri Lanka	2006	Article	Open Access	N/A	Climate Research	116	2.459	2.8	Q3
22	Self-excited induction generator with excellent voltage and frequency control	1998	Article	Subscription-based	0	IEE Proceedings (IET): Generation, Transmission and Distribution	122	2.503	6.4	Q1
23	Designing standalone hybrid energy systems minimizing initial investment, life cycle cost and pollutant emission	2013	Article	Subscription-based	0	Energy	232	9	14.9	Q1
24	Thermal comfort implications of urbanization in a warm-humid city: The Colombo Metropolitan Region (CMR), Sri Lanka	2005	Article	Subscription-based	1	Building and Environment	189	7.4	11.3	Q1
25	Attitudes and perceptions of construction workforce on construction waste in Sri Lanka	2006	Article	Open Access	0	Management of Environmental Quality: An International Journal	48	0.816	8.6	Q1/ Q2



Citations Received 1998 - 2023 Nov.



Subject Areas of Highly Cited Publications



Types of Collaborations of Highly Cited Publications

Subjects are based on All Science Journal Classification (ASJC). ASJC System is used in Scopus to classify publications under four broad subject areas (life sciences, physical sciences, health sciences and social sciences and humanities) which are further divided into groups and 333 minor fields.

Source: Scopus (2023)

Name: Research Support Services Division
Department: Library, University of Moratuwa

Top Articles and Confernace Papers in Google Scholar Metrics

Rank	Publication	h5-index	h5-median	Article Title	Year
1	Nature	467	707	Improving the neighbourhood	1999
				Computational analysis and experimental verification of donor–acceptor behaviour of berberine, and its co-oligomers and co-polymers with ethylenedıoxythıophene	2023
				Modeling strength characteristics of basalt fiber reinforced concrete using multiple explainable machine learning with a graphical user interface	2023
				Water drainage from Kushiro Coal Mine decreased on the day of all M ≥ 7.5 earthquakes and increased thereafter	2018
				Antiferroelectric Nature of CH3NH3PbI3−xClx Perovskite and Its Implication for Charge Separation in Perovskite Solar Cells	2016
				Stratification of amyotrophic lateral sclerosis patients: a crowdsourcing approach	2019
				Twenty-first-century projections of shoreline change along inlet-interrupted coastlines	2021
				Nanoscale mechanisms in age-related hip-fractures	2020
				The Scales Project, a cross-national dataset on the interpretation of thermal perception scales	2019
				Nano-scale mechanisms explain the stiffening and strengthening of ligament tissue with increasing strain rate	2018
				Long-term effects of bisphosphonate therapy: perforations, microcracks and mechanical properties	2017
				Brain-inspired spiking neural networks for decoding and understanding muscle activity and kinematics from electroencephalography signals during hand movements	2021
				Accurate whole-night sleep monitoring with dry-contact ear-EEG	2019
				Publisher Correction: The Scales Project, a cross-national dataset on the interpretation of thermal perception scales	2020
				Online quantitative partial discharge monitor based on interferometry	2020
4	IEEE/CVF Conference on Computer Vision and Pattern Recognition	422	681	DeepCaps: Going Deeper With Capsule Networks	2019
				CrossPoint: Self-Supervised Cross-Modal Contrastive Learning for 3D Point Cloud Understanding	2022
5	The Lancet	368	688	Heart disease complicating pregnancy as a leading cause of maternal deaths in LMIC settings: the Sri Lankan experience	2023
8	Cell	316	503	Revolution in orthopedic immobilization materials: A comprehensive review	2023
				Towards Truly Wearable Systems: Optimizing and Scaling Up Wearable Triboelectric Nanogenerators	2020
				Reconfigurable solar photovoltaic systems: A review	2020
				A comparative study of the characteristics of hate speech propagators and their behaviours over Twitter social media platform	2023
				Parametric and kinetic study of washing pretreatment for K and Cl removal from rice husk	2021
12	Science of The Total Environment	273	375	Unprecedented marine microplastic contamination from the X-Press Pearl container vessel disaster	2022
19	Journal of Cleaner Production	246	321	Corrigendum to "A systematic review of the life cycle inventory of clothing" [J. Clean. Prod. 320 (2021) 128852]	2023
				Haematococcus pluvialis: A potential feedstock for multiple-product biorefining	2022
				Unveiling the conceptual development of industrial symbiosis: Bibliometric analysis	2020
				Environmentally sustainable plastic food packaging: A holistic life cycle thinking approach for design decisions	2023
				Long-term feasibility of carbon capturing in community energy systems: A system dynamics-based evaluation	2022
				A systematic review of the life cycle inventory of clothing	2021
				Liquefied natural gas exports from Canada to China: An analysis of internationally transferred mitigation outcomes (ITMO)	2022
				Carbon capturing for emissions reduction at building level: A market assessment from a building management perspective	2021
				Constraints to rare earth elements supply diversification: Evidence from an industry survey	2021
				Introducing energy efficient technologies in small- and medium-sized enterprises in the apparel industry: A case study of Sri Lanka	2018
				Occupant-based energy upgrades selection for Canadian residential buildings based on field energy data and calibrated simulations	2020
				BIM-based life cycle environmental performance assessment of single-family houses: Renovation and reconstruction strategies for aging building stock in British Columbia	2019
				Performance based energy, ecological and financial costs of a sustainable alternative cement	2020
				Assessment of renewable energy-based strategies for net-zero energy communities: A planning model using multi-objective goal programming	2020
				Challenges facing sustainable urban mining in the e-waste recycling industry in Sri Lanka	2019
				Life cycle environmental impacts of the apparel industry in Sri Lanka: Analysis of the energy sources	2017
				Exploring algal technologies for a circular bio-based economy in rural sector	2022

H5-index "It is the largest number h such that h articles published in [the past 5 years] have at least h citations each".
h5 median : H5-median is based on H5-index, but instead measures was the median (or middle) value of citations is for the h number of citations.

Source: Google Scholar Metrics (2023)

Recent Research Performance Overview

Overall Research Performance

Entity: University of Moratuwa · Year range: 2018 to 2022

2,904 ▲
Scholarly Output
26.4% Open Access

2,982 ▲
Authors

0.96
Field-Weighted Citation Impact

13,553
Citation Count

4.7
Citations per Publication

34
h5-index

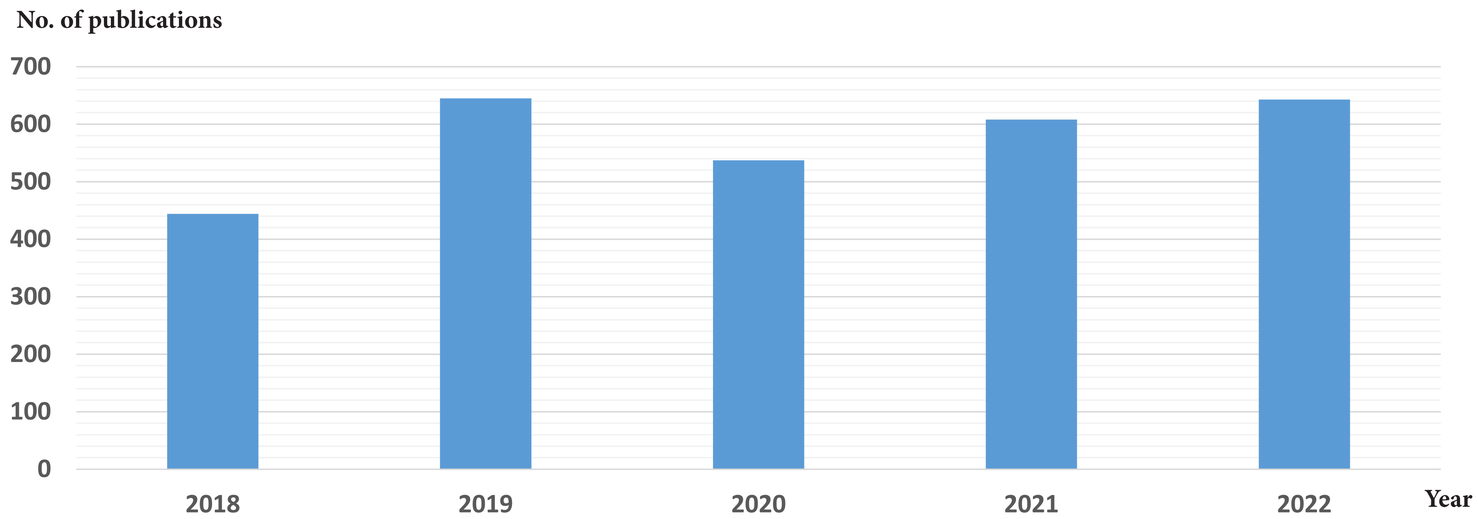
This analysis provides an overall metrics summary of the institution. The snowflake means the metrics have been calculated using the Snowball Metrics Methodology.

Source: SciVal (2023)

Recent Scholarly Output

Scholarly Output | Year range: 2018 to 2022

SciVal Generated Graph



3,192

Number of publications by authors at the University of Moratuwa | 2018 to 2022.

Scholarly output indicates the prolificacy of the Publication set: how many publications does the publication set have indexed in Scopus during the time period?

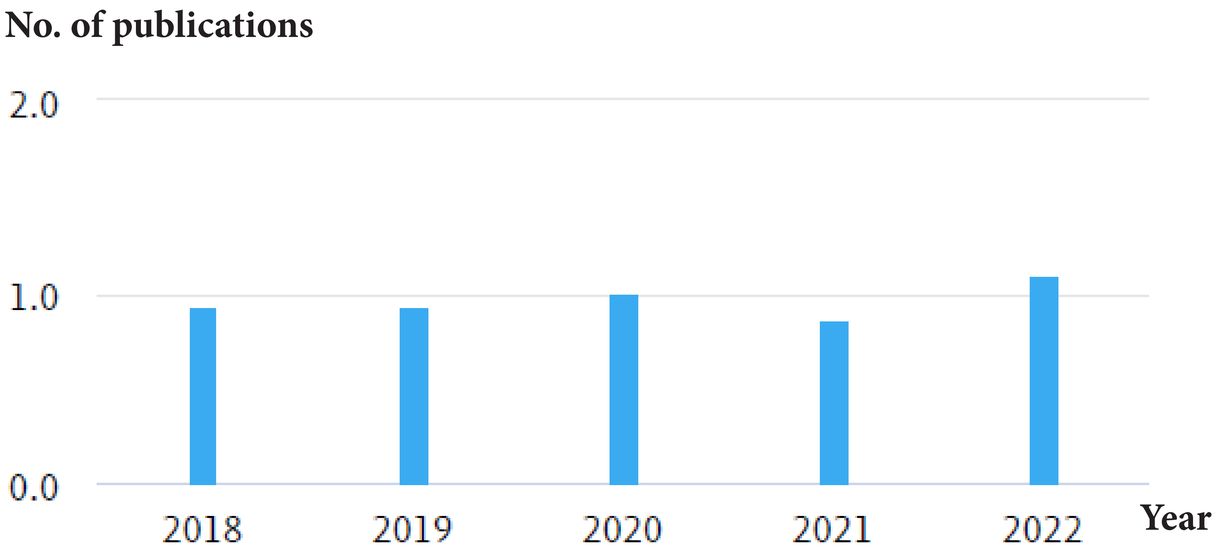
Note: some subject areas produce more scholarly output than others.

Source: SciVal (2023)

Field-weighted Citation Impact

Field-Weighted Citation Impact | Year range: 2018 to 2022

SciVal Generated Graph



0.96

Field-Weighted Citation Impact of the University of Moratuwa | 2018 to 2022.

Field-Weighted Citation Impact (FWCI) indicates how the number of citations received by the institution publications compares with the average number of citations received by all other similar publications in Scopus. A FWCI of 1.00 indicates that the institution's publications have been cited exactly as would be expected based on the global average for similar publications. A FWCI of more than 1.00 above average citations; for example, 2.11 means 111% more than the world average.

Source: SciVal (2023)

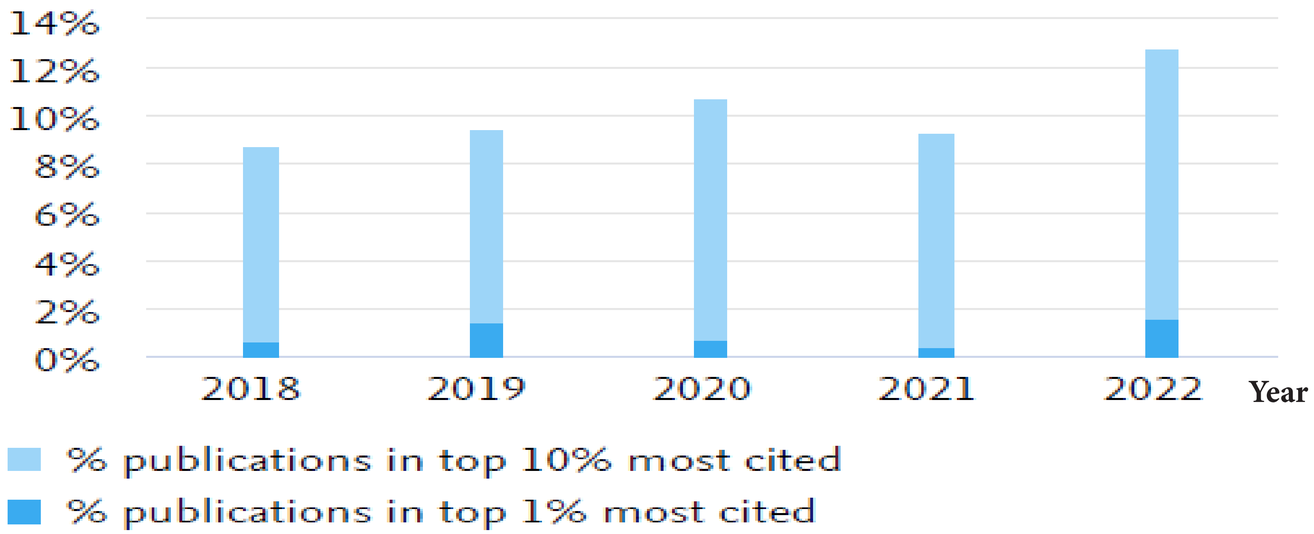
Top Field-weighted Citation Percentiles

Outputs in Top 10% Citation Percentiles (Field-weighted) | Year range: 2018 to 2022

SciVal Generated Graph

Share of publications at the University of Moratuwa that are among the most cited publications worldwide

field-weighted



298 (10.3%)

number of publications in the top 10% most cited publications worldwide

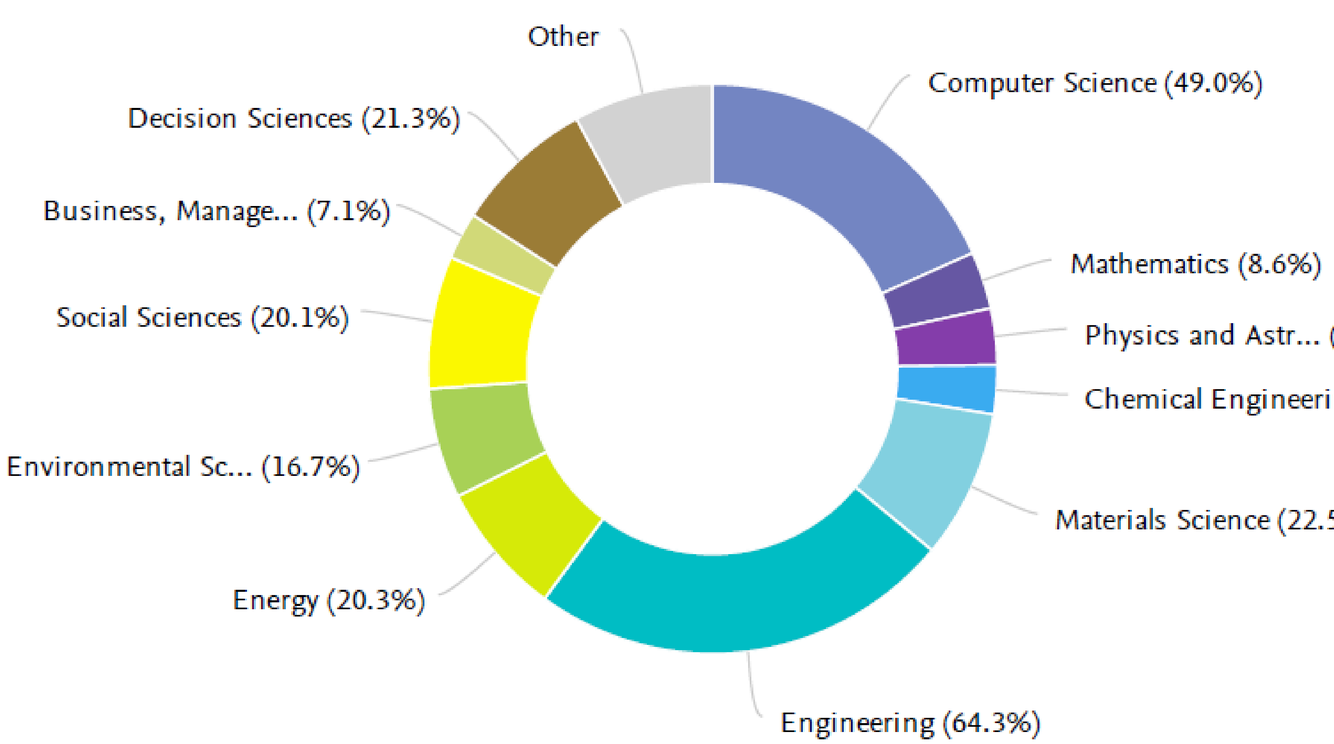
Outputs in Top Citation Percentiles indicates the extent to which an institution's publications are present in the top 10% most-cited percentiles within Scopus. This number is then field-weighted to normalize for differences in subject area citation patterns.

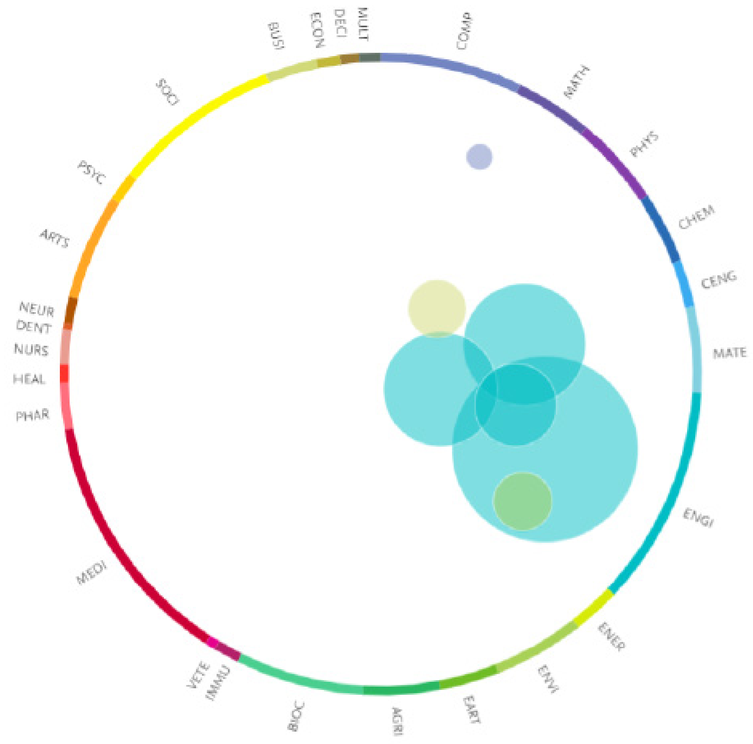
Source: SciVal (2023)

Publication Share by Subject Area

Publication share by Subject Area | Year range: 2018 to 2022

SciVal Generated Graph





First chart gives an overview of the Subject Areas in which the institution is publishing based on All Science Journal Classification (ASJC). Please note, that an article can belong to more than one ASJC. Second chart shows the Topics with a lot of momentum (a high Prominence percentile), in which the institution is potentially making an impact.

Source: SciVal (2023)

Collaborations

Geographic Collaboration and Sector Collaboration | Year range: 2018 to 2022

SciVal Generated Content

Geographic Collaboration - Overall

Entity: University of Moratuwa · Year range: 2018 to 2022 · Data source: Scopus, up to 21 Jun 2023

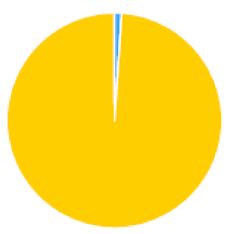
International, national and institutional collaboration by at the University of Moratuwa in the selected year range.

Metric		Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
International collaboration	32.1%	932	6,876	7.4	1.26
Only national collaboration	13.1%	381	1,911	5.0	0.88
Only institutional collaboration	52.1%	1,512	4,613	3.1	0.83
Single authorship (no collaboration)	2.7%	79	153	1.9	0.31

Sector Collaboration - Overall

Entity: University of Moratuwa · Year range: 2018 to 2022 · Data source: Scopus, up to 21 Jun 2023

Scholarly Output at the University of Moratuwa with both academic and corporate author affiliations



Metric		Scholarly Output	Citations	Citations per Publication	Field-Weighted Citation Impact
Academic-corporate collaboration	1.1%	33	366	11.1	3.14
No academic-corporate collaboration	98.9%	2,871	13,187	4.6	0.94

Source: SciVal (2023)

Collaborating Institutions

Collaborating Institutions | Year range: 2018 to 2022

SciVal Generated Content

Institution	Co-authored publications	Co-authors at the University of Moratuwa	Co-authors at the other Institution	Field-Weighted Citation Impact	Field-Weighted Views Impact
National Collaboration					
University of Sri Jayewardenepura	72	85 ▼	67 ▲	1.87	1.21
University of Colombo	54 ▲	80 ▲	68 ▲	0.41	0.75
University of Peradeniya	43 ▲	61 ▲	49 ▼	1.44	1.43
University of Ruhuna	42 ▲	43 ▲	39 ▲	0.74	1.34
Sri Lanka Institute of Information Technology	23 ▲	26 ▲	25 ▲	1.06	1.44
Uva Wellassa University	22 ▲	35 ▲	15 ▲	1.00	1.34
International Collaboration					
Northumbria University	36 ▲	28 ▲	25 ▲	1.51	2.17
University of Melbourne	29 ▲	29 ▲	26 ▲	1.21	0.77
University of British Columbia	27 ▼	9 ▲	23 ▼	1.11	1.86
University of South Australia	25 ▲	33 ▲	15 ▲	0.66	1.28
University of Sydney	23 ▼	27 ▲	26 ▼	3.21	2.84
Florida International University	22 ▲	23 ▲	7 ▼	0.69	0.54

Collaborating Institutions

Entity: University of Moratuwa · Year range: 2020 to 2023 · Data source: Scopus, up to 01 Nov 2023

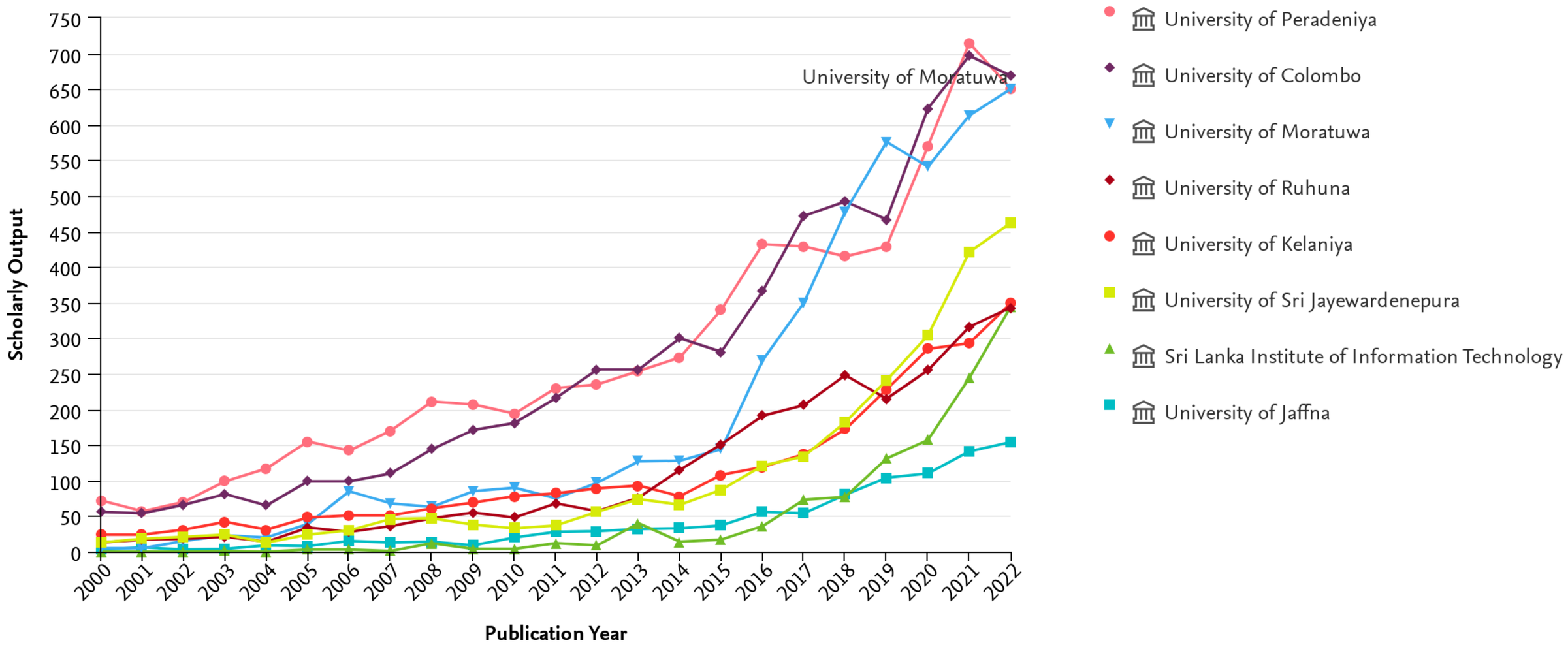
Number of collaborating institutions per region

Source: SciVal (2023)

SciVal Comparision of Eight Sri Lankan Universities

Scholarly Output of Eight Sri Lankan Universities | Year range: 2018 to 2022

SciVal Generated Graph



Source: SciVal (2023)

UoM Library Theses and Dissertations

Faculty of Architechture

Department of Architecture

No.	Course No.	Course Name	No. of Thesis
1	DAR 01	Doctor of Philosophy (PhD)	10
2	DAR 02	Master of Philosophy	6
3	DAR 04	MSc in Architecture	497

Department of Building Economics

1	DBE 01	Doctor of Philosophy (PhD)	10
2	DBE 02	Master of Philosophy	12
3	DBE 03	Master of Science (Major Component of Research)	22
4	DBE 04	MSc in Project Management	165
5	DBE 05	MSc in Construction Law & Dispute Resolution	90
6	DBE 06	MSc in Occupational Safety and Health Management	37

Department of Integrated Design

1	DID 02	Master of Philosophy	2
2	DID 03	Master of Science (Major Component of Research)	4

Department of Town & Country Planning

1	TCP 01	Doctor of Philosophy (PhD)	1
2	TCP 03	Master of Science (Major Component of Research)	1
3	TCP 04	MSc in Town and Country Planning	130
4	TCP 05	MSc in Spatial Planning management & Design	7
5	TCP 06	MSc in Environmental Planning	6

Faculty of Business

Department of Managenent of Technology

No.	Course No.	Course Name	No. of Thesis
1	MOT 01	Doctor of Philosophy (PhD)	5
2	MOT 02	Master of Philosophy	1
3	MOT 03	Master of Science (Major Component of Research)	9
4	MOT 04	MBA in Management of Technology	455
5	MOT 05	MBA in Entrepreneurship	17

Faculty of Engineering

Department of Chemical and Process Engineering

No.	Course No.	Course Name	No. of Thesis
1	DCH 01	Doctor of Philosophy	9
2	DCH 02	Master of Philosophy	11
3	DCH 03	Master of Science (Major Component of Research)	64
4	DCH 04	MSc Sustainable Process Engineering	43
5	DCH 05	MSc in Polymer Technology	69

Department of Civil Engineering

1	DCE 01	Doctor of Philosophy	47
2	DCE 02	Master of Philosophy	41
3	DCE 03	Master of Science (Major Component of Research)	212
4	DCE 04	MEng in Irrigation and Water Power	2
5	DCE 05	MEng in Environmental Engineering	8
6	DCE 06	MEng in Hydrology and Water Resources Eng.	1
7	DCE 07	MEng in Applied Hydrology	7
8	DCE 08	MEng Land and water development	4
9	DCE 09	MEng in Advanced Hydrology	2
10	DCE 10	MEng in Hudraulic Structures	1
11	DCE 11	MEng in Construction Management	39
12	DCE 12	MEng in Hydraulic Engineering	3
13	DCE 13	MEng in Geotechnical Engineering	13
14	DCE 14	MEng in Environmental Water Resources Engineering and Management	16
15	DCE 15	MSc in Geotechnical Engineering	3
16	DCE 16	MBA in Infrastructure	17
17	DCE 17	MSc in Environmental Management	23
18	DCE 18	MEng in Water Resources Engineering & Management	12
19	DCE 19	MSc in Transportation Engineering	28
20	DCE 20	MEng In Environmental Management	33
21	DCE 21	MEng in Highway and Traffic Eng.	108
22	DCE 22	MSc in Construction Project Management	134
23	DCE 23	MEng in Structural Eng. and Design	110
24	DCE 24	MSc Environmental Eng. and Management	28
25	DCE 25	MSc in Structural Engineering	20
26	DCE 26	MSc in Water Resources Eng. and Mgt.	55
27	DCE 27	MEng in Foundation Engineering and Earth Retaining Systems.	47
28	DCE 28	MEng in Foundation Engineering and Earth Retaining Systems.	67

Department of Computer Science & Engineering

1	DCS 01	Doctor of Philosophy	4
2	DCS 02	Master of Philosophy	7
3	DCS 03	Master of Science (Major Component Research)	61
4	DCS 04	MEng in Computer Science & Engineering	1
5	DCS 05	Master of Science in Computer Science	253
6	DCS 06	MBA in Information Technology	305
7	DCS 07	MBA in E-governance	16

Department of Earth Resource Engineering

1	DER 01	Doctor of Philosophy	1
2	DER 02	Master of Philosophy	11
3	DER 03	MSc (Major Component of Research)	7
4	DER 04	MEng in Earth Resources Engineering	1
5	DER 05	MSc in Mining and Mineral Exploration	5

Department of Electrical Engineering

1	DEE 01	Doctor of Philosophy	4
2	DEE 02	Master of Philosophy	13
3	DEE 03	MSc (Major Component of Research	41
4	DEE 04	MEng In Electrical Engineering	47
5	DEE 05	MSc In Electrical Engineering	254
6	DEE 06	MSc In Industrial Automation	59
7	DEE 07	MSc In Electrical Installation	90
8	DEE 08	MSc In Building Services Engineering	1

Department of Electronics & Telecommunication Engineering

1	DEE 01	Doctor of Philosophy	4
2	DEE 02	Master of Philosophy	28
3	DEN 03	MSc (Major Component of Research)	28
4	DEN 04	MEng in Electronics and Telecommunication Engineering	21
5	DEN 05	MSc in Electronics and Telecommunication Engineering	8
6	DEN 06	MSc in Telecommunication	31
7	DEN 07	MSc in Electronics and Automation	32

Department of Materials Science & Engineering

1	DMT 02	Master of Philosophy	14
2	DMT 03	MSc (Major Component of Research)	16
3	DMT 04	MEng in Materials Engineering	1
4	DMT 05	MSc in Materials Science	31

Department of Mathematics

1	DMA 01	Doctor of Philosophy	4
2	DMA 02	Master of Philosophy	3
3	DEN 03	MSc (Major Component of Research)	4
4	DMA 04	MSc in Operational Research	58
5	DMA 05	MSc in Financial Mathematics	71
6	DMA 06	MSc in Business Statistics	69

Department of Mechanical Engineering

1	DME 01	Doctor of Philosophy	5
2	DME 02	Master of Philosophy	9
3	DME 03	MSc (Major Component of Research)	30
4	DME 04	MEng in Energy Technology	78
5	DME 05	MEng in Mechanical Engineering	9
6	DME 06	MEng in Manufacturing Systems Engineering	71
7	DME 07	MSc in Building Services Engineering	16

Department of Textile & Clothing Technology

1	DTT 01	Doctor of Philosophy	6
2	DTT 02	Master of Philosophy	7
3	DTT 03	MSc (Major Component of Research)	9
4	DTT 04	MSc in Textile Studies	4
5	DTT 05	MSc in Clothing Studies	1
6	DTT 06	MSc in Textile and Clothning Management	27

Department of Transport & Logistic Management

1	TLM 01	Doctor of Philosophy	2
2	TLM 02	Master of Philosophy	1
3	TLM 03	MSc (Major Component of Research)	16
4	TLM 04	TLM 04 - MBA in Supply Chain Management	53

Faculty of Information Technology

Department of Computational Mathematics

No.	Course No.	Course Name	No. of Thesis
1	DCM 01	Doctor of Philosophy	5
2	DCM 03	Master of Science (Major Component of Research)	1
3	DCM 04	MSc in Artificial Intelligence	77

Department of Information Technology

1	DIT 01	Doctor of Philosophy	1
2	DIT 02	Master of Philosophy	5
3	DIT 03	MSc in (Major Component of Research)	4
4	DIT 04	MSc in Information Technology	288

Department of Interdisciplinary Studies

1	IDS 02	Master of Philosophy	1

Source: Library, UoM (2023)

Top Articles and Confernace Papers in Google Scholar Metrics

futures

Improving the neighbourhood

The death of a nearby star system comes as a relief — and a warning.

Arthur C. Clarke

At last, after feats of information processing that taxed our resources to the limit, we have solved the long-standing mystery of the Double Nova. Even now, we have interpreted only a small fraction of the radio and optical messages from the culture that perished so spectacularly, but the main facts — astonishing though they are — seem beyond dispute.

Our late neighbours evolved on a world much like our own planet, at such a distance from its sun that water was normally liquid. After a long period of barbarism, they began to develop technologies using readily available materials and sources of energy. Their first machines — like ours — depended on chemical reactions involving the elements hydrogen, carbon and oxygen.

Inevitably, they constructed vehicles for moving on land and sea, as well as through the atmosphere and out into space. After discovering electricity, they quickly developed telecommunications devices, including the radio transmitters that first alerted us to their existence. Although the moving images these provided revealed their appearance and behaviour, most of our understanding of their history and eventual fate has been derived from the complex symbols that they used to record information.

Shortly before the end, they encountered an energy crisis, partly triggered by their enormous physical size and violent activity. For a while, the widespread use of uranium fission and hydrogen fusion postponed the inevitable. Then, driven by necessity, they made desperate attempts to find superior alternatives. After several false starts, involving low-temperature nuclear reactions of scientific interest but no practical value, they succeeded in tapping the quantum fluctuations that occur at the very foundations of space–time. This gave them access to a virtually infinite source of energy.

What happened next is still a matter of conjecture. It may have been an industrial accident, or an attempt by one of their many competing organizations to gain advantage over another. In any event, by mishandling the ultimate forces of the Universe, they triggered a cataclysm which detonated their own planet — and, very shortly afterwards, its single large moon.

Although the annihilation of any intelligent beings should be deplored, it is impossible to feel much regret in this particular case. The history of these huge creatures contains countless episodes of violence, against their own species and the numerous others that occupied their planet. Whether they would have made the necessary transition — as we did, ages ago — from carbon- to germanium-based consciousness, has been the subject of much debate. It is quite surprising what they were able to achieve, as massive individual entities exchanging information at a pitiably low data rate — often by very short-range vibrations in their atmosphere!

OLIVER BURSTON

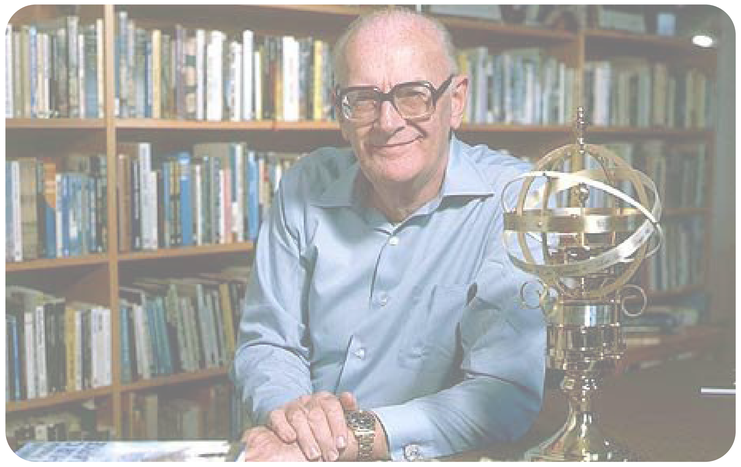
> Although the annihilation of any intelligent beings should be deplored, it is impossible to feel much regret in this case.

They were apparently on the verge of developing the necessary technology that would have allowed them to abandon their clumsy, chemically fuelled bodies and thus achieve multiple connectivity: had they succeeded, they might well have been a serious danger to all the civilizations of our Local Cluster.

Let us ensure that such a situation never arises again. ■

Dedicated to Drs Pons and Fleischmann, Nobel laureates of the twenty-first century.

Sir Arthur C. Clarke is chancellor of the International Space University and the University of Moratuwa, Sri Lanka. He is the author of 2001: A Space Odyssey *and many other novels and stories, and was nominated for the Nobel Peace Prize for inventing the communications satellite. His latest book is* Greetings, Carbon-Based Bipeds! *He lives in Sri Lanka.*



"Improving the Neighbourhood" is a short science fiction narrative penned by Sir Arthur C. Clarke, Chancellor, Umiversity of Moratuwa (1979-2002) Initially featured in Nature Journal on November 4, 1999, it is the inaugural science fiction piece ever published by Nature. Additionally, it serves as the concluding tale in The Collected Stories of Arthur C. Clarke. This is the first University of Moratuwa Publication in Nature Journal (h5-index 467) - The top publication in Google Scholar Metrics.

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Review article

Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy

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ABSTRACT

The practice of social distancing and wearing masks has been popular worldwide in combating the contraction of COVID-19. Undeniably, although such practices help control the COVID-19 pandemic to a greater extent, the complete control of virus-laden droplet and aerosol transmission by such practices is poorly understood. This review paper intends to outline the literature concerning the transmission of virus-laden droplets and aerosols in different environmental settings and demonstrates the behavior of droplets and aerosols resulted from a cough-jet of an infected person in various confined spaces. The case studies that have come out in different countries have, with prima facie evidence, manifested that the airborne transmission plays a profound role in contracting susceptible hosts. The infection propensities in confined spaces (airplane, passenger car, and healthcare center) by the transmission of droplets and aerosols under varying ventilation conditions were discussed.

Interestingly, the nosocomial transmission by airborne SARS-CoV-2 virus-laden aerosols in healthcare facilities may be plausible. Hence, clearly defined, science-based administrative, clinical, and physical measures are of paramount importance to eradicate the COVID-19 pandemic from the world.

1. Introduction

Coronavirus disease 2019 (COVID-19) was first reported in Wuhan, China, in December 2019 (Chen et al., 2020). The disease is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Gorbalenya, 2020) and asseverated to be transmitted from human-to-human by multiple means, namely, by droplets, aerosols, and fomites (Wang and Du, 2020). It has been more than 120 days that COVID-19, later declared as a pandemic and highly contagious, was first reported. As of May 05, 2020, there have been more than 3.5 million confirmed cases and 243,401 deaths by the COVID-19 disease worldwide (WHO, 2020a). COVID-19 infection triggers severe acute respiratory illness, with fever, cough, myalgia, and fatigue as common symptoms at the onset of illness (Huang et al., 2020; Judson and Munster, 2019; Nicas et al., 2005).

Infectious agents may spread from their natural reservoir to a susceptible host in different pathways. There are various classifications reported in the literature for modes of transmission of different infectious agents. Morawska (2006) has presented a classification for virus transmission, including human-human transmission, airborne transmission, and other means of transmission such as endogenous infection, common vehicle, and vector spread. However, many respiratory viruses are believed to transmit over multiple routes, of which droplet and aerosol transmission paths become paramount, but their significance in transmitting the disease remains unclear (Morawska and Cao, 2020; Shiu et al., 2019). In general, infected people spread viral particles whenever they talk, breathe, cough, or sneeze. Such viral particles are known to be encapsulated in globs of mucus, saliva, and water, and the fate/behavior of globs in the environment depends on the size of the globs. Bigger globs fall faster than they evaporate so that they splash down nearby in the form of droplets (Grayson et al., 2016; Liu et al., 2016). Smaller globs evaporate faster in the form of aerosols, and linger in the air, and drift farther away than the droplets do.

Respiratory particles may often be distinguished to be droplets or aerosols based on the particle size and specifically in terms of the aerodynamic diameter (Hinds, 1999). One could dispute that, unlike larger droplets, aerosols may pose a greater risk of the spread of the COVID-19 disease among many susceptible hosts positioned far from the point of origin. Nevertheless, it has been proven that viral disease outbreaks via aerosol transmission are not as severe as one would think, because of dilution and inactivation of viruses that linger for extended periods in the air (Shiu et al., 2019). There has been no discernible evidence on the minimum infectious viral load for COVID-19 pandemic,

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SymPy: symbolic computing in Python

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Additional Information and Declarations can be found on page 22

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ABSTRACT

SymPy is an open source computer algebra system written in pure Python. It is built with a focus on extensibility and ease of use, through both interactive and programmatic applications. These characteristics have led SymPy to become a popular symbolic library for the scientific Python ecosystem. This paper presents the architecture of SymPy, a description of its features, and a discussion of select submodules. The supplementary material provide additional examples and further outline details of the architecture and features of SymPy.

Subjects Scientific Computing and Simulation, Software Engineering
Keywords Python, Computer algebra system, Symbolics

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Tea waste as a low cost adsorbent for the removal of Cu and Pb from wastewater

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Abstract

Adsorption of copper and lead ions onto tea waste from aqueous solutions was studied to enable comparison with alternative commonly available absorbents. Batch experiments were conducted to determine the factors affecting adsorption and kinetics of the process. Fixed bed column experiments were performed to study practical applicability and breakthrough curves were obtained. Tea waste is capable of binding appreciable amounts of Pb and Cu from aqueous solutions. The adsorption capacity was highest at solution pH range 5–6. The adsorbent to solution ratio and the metal ion concentration in the solution affect the degree of metal ion removal. The equilibrium data were satisfactorily fitted to Langmuir and Freundlich isotherms. Highest metal uptake of 48 and 65 mg/g were observed for Cu and Pb, respectively. Pb showed higher affinity and adsorption rate compared to Cu under all the experimental conditions. Kinetic studies revealed that Pb and Cu uptake was fast with 90% or more of the adsorption occurring within first 15–20 min of contact time. The kinetic data fits to pseudo second order model with correlation coefficients greater than 0.999. Increase in the total adsorption capacity was observed when both Cu and Pb ions are present in the solution. Higher adsorption rate and the capacity were observed for smaller adsorbent particles. Tea waste is a better adsorbent compared to number of alternative low cost adsorbents reported in literature.

Keywords: Adsorption; Heavy metals; Tea waste

1. Introduction

Contamination of water by toxic heavy metals through the discharge of industrial wastewater is a world wide environmental problem. Rapid industrialization has seriously contributed to the release of toxic heavy metals to water streams. Mining, electroplating, metal processing, textile and battery manufacturing industry are the main sources of heavy metal ion contamination. Metals such as lead, cadmium, copper, arsenic, nickel, chromium, zinc and mercury have been recognized as hazardous heavy metals.

Heavy metal toxicity can result in damage or reduced mental and central nervous function, lower energy levels and damage to blood composition, lungs, kidneys, liver and other vital organs. Presence of metals in water streams and marine water causes a significant health threat to the aquatic community—most common being the damage of the gill of the fish [1,2]. Consequently, in many countries, more strict legislation has been introduced to control water pollution. Removal of metal ions from wastewater in an effective manner has become an important issue today [3]. Precipitation followed by coagulation has been extensively employed for the removal of heavy metals from water. However, this process usually produces large volumes of sludge consisting small amounts of heavy metals. Membrane filtration is a proven way to remove metal ions but its high cost limits the use in practice [1]. Adsorption is an efficient method for the removal of tracer components from water. Activated carbon-produced by carbonizing organic materials-is the most widely used adsorbent. Activated carbon has shown good metal ion adsorption capacities [4–8]. However, the high cost of the activation process limits the use in wastewater treatment. Over the last few years number of investigations has been conducted to test the low cost adsorbents for heavy metal ion removal. Waste biomass, industrial waste, and mineral waste have been investigated by many workers and biomass has shown better adsorption properties [9].

Plant materials are mainly comprised of cellulose materials that can adsorb heavy metal cations in aqueous medium [10].

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