Dr.Saumitra Mukherjee
Date of Birth: 20th January 1959 Place of Birth: Varanasi
Professor (Geology & Remote sensing), Former-Dean, School of Environmental sciences, J.N.U., New Delhi-110067
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Broad area of Specialization: ENVIRONMENTAL EARTH SCIENCES

Earth Observation Applications for Water Resources Assessment and Management (Remote sensing and GIS applications and Geophysical techniques in Ground water Exploration, Rainwater Harvesting, Geochronology, Early warning of Natural Hazards and its relation with Water resources Tornado, Cyclone, Earthquake, Tsunami, Snowfall, Deforestation, Forest Fire.

Research guidance and publications in the following areas
Monitoring, analyzing, and quantifying components of the water cycle
Monitoring Modeling real or near-real time surface and/or subsurface hydrological processes.
Analyzing interactions of land surface and atmospheric processes
Investigating wetland dynamics
Monitoring, forecasting and managing flooding and droughts
Monitoring land use/cover change and impact on hydrological processes determining effects of human activities on both the quantity and quality of water
Developing products for use in integrated water resources management.
Use of Microwave Remote sensing to infer Geology of Moon, Mars and Saturn.

Used Satellite data: IRS, LANDSAT, OCEANSAT, SENTINEL, ALOS, SPOT (INDIA, UK, and AFRICA), IRS (INDIA), RESOURSESAT and LIDAR Data (UK), SOHO data of Sun-Earth Environment.

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Membership of Professional Bodies

- Member McDonnell Scholars Academy University of Washington, USA
- Member APN https://www.apn-gcr.org/project/developing-a-training-module-to-monitor-forest-cover-and-deforestation-using-advanced-remote-sensing-techniques-under-un-cecar-framework-in-support-of-redd-mrv-system/
- Life Member, European Space Agency, Netherlands.
- Life Member, European Geosciences Union, Germany.
- Life Member, SOC, JPL/CALTECH/NASA, USA. https://solarsystem.nasa.gov/studies/41/effect-of-star-burst-on-sun-earth-environment/
- Life Member, European Fleet For Airborne Research, France (EUFAR)
- Life Member AIAA, USA
- Life Member AAAS, USA
- Life Member, Canadian Remote sensing Society, Ottawa, Canada.

- Associate Member,GEOCHANGE, http://geochange-report.org/index.php?option=com_content&view=article&id=78&Itemid=109
- Life Member, Indian Society of Remote Sensing, Dehradun.
- Life Member, Indian Association of Hydrology, Roorkee.
- **Executive Fellow (Earth Sciences-India)** http://www.earthscienceindia.info/executive_comittee.php
- **Commonwealth Fellow (Geology), UK**
- **Life Member, American Geophysical Union, USA**

Education

- PDF: (Commonwealth Fellow). Remote sensing applications in Geology(Remote sensing of Water resources), Earth & Ocean Sciences, The University of Liverpool, Liverpool, UK.
- Ph.D: Geology, Banaras Hindu University, Varanasi (Collaboration with IIRS)
- ***PhD Topic (Geology & Geochemistry of Pegmatites and Associated Rocks of Jorasemar and Sapahitola Area District Bihar with special reference to Applications of Remote Sensing Techniques in Exploration of Natural Resources) September 1989, 365 Pages***
- M.Sc.: Geology, Banaras Hindu University, Varanasi, 1st Div
- B.Sc. : Geology, Botany, Chemistry, Banaras Hindu University, Varanasi, 1st Div
- PGD: Environment & Ecology, IIEE, New Delhi., 1st Div
- Certificate: Remote Sensing & GIS, RRSSC, IIT Kharagpur, West Bengal.
- Certificate: Groundwater Exploration and Management, CGWB, Govt.of India.
- Certificate: Digital Image Processing NIH IIT Roorkee
- Certificate: Remote sensing and GIS NRSC, Hyderabad
- Certificate: The EOS Platform on Earth Observing System Italy(ID: 13830538) GEO University 2019
- Certificate: Asteroid Defense 101, The Planetary Society California USA 2019
- Certificate: Sentinel Hub Webinar Series GIS and Earth Observation University, Estonia **Certificate ID:**le4ysndcjb **Issued:**2021-07-25 https://www.geo.university/certificates/le4ysndcjb

Employment

- 2021 Continued… Mentor (Honorary) of Science Research University of Leeds (UK)
- 2016-2018 (8th January),Dean, School of Environmental Sciences
- 2006-till date-Professor (Geology/Remote sensing) SES/JNU
- 2004-2005.Visiting Professor, Water Resources, Earth& Ocean Sciences, The University of Liverpool,UK
- 2016-2018 Visiting Professor of Remote sensing and Hydrogeology in South Ural State University, Soviet Union.
- 1998-2006-Associate Professor(Geology/Remote sensing) SES/JNU
- 1992-1998 Assistant Professor (Geology/Remote sensing)SES/JNU New Delhi
- 1989-1992: Scientist-C, Remote Sensing Applications Center, UP, Lucknow.
- 1985-1989: Hydrogeologist Central Ground Water Board, Calcutta.

- 1983-1985: JRF (Geology), Banaras Hindu University, Varanasi

Achievements Honors and Awards:

- **Recipient of Higher Education award on the Government of India New Code of Education Policy 2022.**
- **Recipient of INC-IAH award in Excellence in Groundwater Research in 2016.**
- **UGC Professor of Geology, Remote sensing and Space Sciences (2008)**
- Invited as a speaker (represented India) in NASA supported International Heliophysical Year 2007 at Physics Center, Bad Honnef Germany on "Influence of Sun and other cosmic factors on Environment of the Earth".(1.5.07-20.5.07) http://www.ieap.uni-kiel.de/et/ag-heber/ihy2007/sun-heliosphere-earth/cip/program/index.php
- Commonwealth Fellow (2004-2005) at Department of Earth and Ocean Sciences the University of Liverpool, Liverpool, UK. Designated as Visiting Professor by the University authorities.
- Educator Associate (2003-till date) at AIAA (American Institute of Aeronautics and Astronautics), USA.
- British Association of Sciences Award for popularizing Sun-Earth connection in Liverpool, UK. (2004-2005)
- UGC Associate (2002-2003). The work includes development of curriculum for Remote sensing application in Geosciences in Indian Universities.
- **Recipient of Award from Ministry of Environment and Forest in 2003 for writing a book on "New trends in ground water Research" published in 2006.**
- **Installed Cosmic Ray Detector as a part of Space Environment Viewing and Analysis Network in School of Environmental Sciences, JNU in 2010.** http://crdlx5.yerphi.am/press_releases/SEVAN_Network_expanding_to_India_Jawaharlal_Nehru_University
- http://www.reporter.am/go/article/2011-02-08-armenia-s-cosmic-ray-division-expands-international-cooperation-on-space-monitoring
- **https://2015.spaceappschallenge.org/project/galactic-cosmic-ray-variation-and-environment-of-jawaharlal-nehru-university-new-delhi-india/**

Peer Recognition and Achievements

- E-officio National Expert member of Groundwater for Central Groundwater Board, Jal Shakti Mantralaya.Govt.of India (2016 ..till date)
- Received prestigious grant from NASA on Influence of Sun and other cosmic factors on environment of the space around Earth." ASIAN OFFICE (JAPAN) OF AEROSPACE RESEARCH AND DEVELOPMENT UNIT (NASA) USA.2007-2008 http://www.dtic.mil/cgibin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA512562
- http://www.microsoft.com/isapi/redir.dll?prd=ie&ar=windowsmedia
- Member AGU Education Award Committee. https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/eost2010EO33

- http://crd.yerphi.am/science_news/Influence_of_a_Star_flare_on_the_Sun_Earth_environment_and_its_possible_relationship_with_snowfall
- Advisor (Water Resources), International Foundation for Science, Stockholm, Sweden. (2006...till date) http://www.ifs.se/Publications/Strengthening%20Capacity%20for%20Water%20Resource%20Research.pdf
- Member Education Award Committee AGU, http://sites.agu.org/annualreport/volunteers/ https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2010EO330005
- Member, Planetary Crater Consortium, NASA, USA 2018
- Visiting Professor, Indian Institute of Remote Sensing, Dehradun (2001.till date
- **Selected Rainwater Harvesting Sites and successful test groundwater drilling sites (1992-1996) in JNU. Implemented water resource management through UPOE (UGC) project. Selected 7 sites for groundwater exploration in JNU which yielded 25000-35000 Liter per hour of groundwater (2006-2008).These natural resources are for future use of JNU. University has saved money as 15% rebate in water tax based on successful rainwater harvesting and stopped buying water from other sources as it was done earlier.**
- **Scientific way of Integrated Water Resource Management was done in 2004 in RR Hospital, New Delhi Ministry of Defense, GOI, through DST project**.

- Expert Member, DST, GOI, sponsored National Project "Creation of real time monitoring 3D GIS for City Zone Delhi". This project result identified Disaster prone and unauthorized areas (MCD) of Delhi for development of Master Plan.
- Expert Member, Selection Committee, NCR Planning Board, New Delhi (1999 onwards)
- Expert Member, Selection Committee, DTRL, Defense Ministry, (2000 onwards)
- Expert Member, ISM Dhanbad
- Expert Member, IP University, Delhi

Courses Offered:
M.Sc: **Remote Sensing and Geoinformatics (Initiated the course in SES) (2 credits)**,
M.Sc: **Water Resources** (3 credits)
M.Sc: Lab II, M.Sc Field Work
M.Phil: **Remote sensing Applications in Geosciences (Initiated the course) (3 credits) Research Methodology**, **Analytical Techniques**.

Course/Curriculum development

1. Initiated the course on **Sustainable Geosciences (2012)** for Universities and IIT's in association of GSI,Ministry of Mines and CGWB,Ministry of Water Resources, ISRO, CSIR, DST and faculties of other Universities of India and abroad for development of the subject and future job prospect of M.Sc. students of Geology and Environmental Sciences in India. http://www.portal.gsi.gov.in/gsiDoc/pub/minutes_6th_cgpb_com_xii.pdf

2. Initiated and developed New M.Sc course **Remote sensing** in SES/JNU in 1992.Revised the course as **Remote sensing and Geoinformatics in 2011.**
3. Initiated and developed New M.Phil course **(Remote sensing applications in Geosciences)** in SES/JNU, revised the course in 2010 and 2012.
4. Invited Member of **UGC Model Curriculum of Geology in Indian Universities** (2001).
5. Participated in the National Lexicographic initiative to develop and write a dictionary of Geology and Remote sensing words from English to Hindi with Prof.P.S. Sakhlani Director of Rajbhasha Ayog (Ex-Professor of Geology, Delhi University, Ex-VC, HNB University Srinagar) in 1994.
6. Initiated Sustainable Geosciences curriculum covering Applied Geology curriculum (Area II) of School of Environmental Sciences Jawaharlal Nehru University http://mines.nic.in/writereaddata/Filelinks/9f42485a_Document1.pdf approved by Ministry of Mines, Geological Survey of India and Central Groundwater Board, Ministry of Water Resources Government of India, http://www.employmentnews.gov.in/education_and_employment_opportunities_in_geology.asp . All students of M.Sc Environmental Sciences who has taken the Applied Geology courses of SES JNU are eligible to apply for the position of Geologist and Hydrogeologist examination being organized by Union Public Service Commission.
7. Developed the Curriculum and organized invited lectures as a convener of JNU s 1st Refreshers course on Disaster Management sponsored by University Grants Commission in 2013. http://www.jnu.ac.in/asc/Schedule.htm

PhD Guidance

1. Kamaleshwar Pratap(1997).Environmental and Georesources assessment in a part of Son valley India, using Remote sensing and GIS techniques working as **Head GIS** in Kampsax India Limited,Noida.
2. S.K.Yadav (1997)Management of Degraded soil for sustainable development using remote sensing techniques & GIS in South Delhi. **Professor** of Delhi University.
3. Pramod Kumar Singh (1999).Natural Resources management for Sustainable Development of Delhi using Remote Sensing and GIS Techniques, (Working as **Professor** of Remote sensing in Institute of Rural Management, Anand, Gujarat)
4. Rajeev Kumar Jaisawal (1999).Natural resources evaluation using Remote sensing and Geographic information system -A case study of a part of Son Watershed, Madhya Pradesh". **Scientist G (Professor Grade)** in ISRO, Headquarter, Bangalore.
5. Abdul Azeem (2000).Environmental Impact Analysis of Vijaywada Thermal Power Station with respect to land use pattern of the area of Vijaywada using Remote Sensing and GIS Techniques. **Professor of Remote sensing & GIS** UAE University, Saudi Arab.
6. Anup Kumar Das (2002).Landuse/Landcover pattern analysis and natural resource management using remote sensing and GIS techniques **Scientist G (Professor Grade)** in SAC (ISRO), Ahmadabad.
7. Promod Kumar (2003).Microzonation of environmentally stressed areas, due to Air and Water pollution in Delhi, using remote sensing and GIS techniques. **Scientist** Ministry of Defence GOI.

8. Bir Abhimanyu Kumar (2005).Remote sensing and Geographic Information System (GIS) based integrated study in a part of coastal West Bengal for natural resource management. **Regional Director**, IGNOU, New Delhi
9. Seemant Singh Rajput (2009).Natural resource management in Rawanda Africa (Co-guide with Prof.R.K.Trivedi of Geology Department, Sagar University, **Sr.Exploration Geologist** in Reliance India Limited)
10. Satyanarayan Shashtri (2010) "Water resource management in NCR region by Remote sensing GIS and geophysical techniques". **Worked as Associate Professor & Head of Department** of Environmental Sciences Fiji University. On 10th February joined as Professor of Environmental Sciences, Nalanda University, Rajgir, India.
11. Chander Kumar Singh (2011).Groundwater Exploration and Its Geochemical Assessment in Western Rajasthan: Computational Intelligence Approach for Remote Sensing, GIS & Geophysical Application. **Assistant Professor** in TERI University
12. Kumar Rina (2011) Assessment of groundwater resources in Sabarmati river basin, Gujarat-A remote sensing and GIS approach. **Assistant Professor** Gandhinagar University Gujarat.
13. Prabir Mukherjee (2011). Identification of Geological Structures and their roles on the Ground Water Regime of Kachchh District, Gujarat, India. **Remote sensing Scientist** Tata Consultancy Services, New Delhi.
14. Vijay Veer (2011). Neural Networking for water resource management in Hindon basin. Working as **Scientist-F** in National Informatics Centre, Ministry of Communication and Information technology,Govt.of India
15. Amit Singh (2012). Remote sensing Approach to study Morphometric influences on Hydrogeoenvironment in the vicinity of Faridabad fault across river Yamuna basin. **Assistant Professor** at Gautam Buddha University, Noida.
16. Bindu Kumari (2013). Hydrogeomorphic microzonation of a part of Ranchi District,Jharkhand by using Remote sensing and GIS, Awarded May 2013, **Scientific Officer** in FCI, Govt. of India.
17. Ravi Pratap Singh (2013). Identification of Hydrogeomorphological structures and their role on Groundwater regime in Western Assam". **Scientist-Sc** in NRSC, Department of Space, Govt.of India.

18. NehaSingh (2015). Arsenic Mobilization in Groundwater in north 24Parganas, West Bengal, **Assistant Professor** of Environmental Sciences in University of Baroda.

19. Vikas Kamal(2016). Hydrogeomorphological study in a part of the upper Gangatic floodplain. **Scientist**, NHPC, Govt.of India

20. Manoj Pant(2017). Computational intelligence approach for Remote sensing Application: Natural Resource Management. Remote sensing **GIS Expert ESRI** New Delhi

21. Ratan Sen (2017). Hydrogeological investigation in a part of Ratnagiri District, Maharashtra. **Scientist IARI**, Pusa New Delhi

22. Priyadarshini Singh (2019). Hydrogeological investigations of the seismic epicentral cluster within Haryana-Delhi region. **Assistant Professor** Delhi University

23. Payam Sajadi (2019) Modeling of Quorveh-Dehgolan Basin (Kurdistan-Iran), Response to Hydrological variability. **Scientist** Republic of China

24. C.A.Vishwakarma (2020) Assessment of Geogenic and Anthropogenic influence on Groundwater in a part of South Sikkim using Geospatial Techniques**. Assistant Professor** Delhi University.

25. Harshita Asthana (2019) Microzonation of landslide prone areas in a part of Alakhnanda valley in Garhwal Himalaya Assistant Professor Delhi University

26. Vikas Rena (2021). Hydrogeological Assessment Using Earth Observation Datasets and Geochemical Analysis in a Part of Bharatpur District, Rajasthan. Scientist, Rajasthan State Pollution Control Board

27. Nidhi Roy (2021). Analysis of Lunar morphology and mineralogy in the equatorial region with reference to a terrestrial analogue. Scientist in ISRO project

28. Deepali Singh (2022). Aqua-biological exploration of Martian past in light of a terrestrial analogue (Submitted) Selected as Scientist in PRL Ahmadabad.

29. Pardeep Kumar (2023). Aquifer mapping of Middle Andaman using Geospatial, Geophysical and Machine Learning Approach. (Submitted)

Books Published

1. Mukherjee, S. (2006). Earthquake Prediction. Published by Brill Academic Publishers Koninklijke Brill NV, Leiden (The Netherlands) & Boston (USA). **ISBN-10: 90 6764 450 1 and ISBN-13 (i) 978 9067644 50 www.brill.nl/default.aspx?partid=10&mcid=8&pid=25855**
   Cited in Science Journal on 9th March 2007. http://www.sciencemag.org/books/
   (Citation: New Concepts In Global Tectonics December 2006 ID LINDLEY, G SCALERA - quake.exit.com)
2. Mukherjee, S. (2004). Text Book of Environmental Remote Sensing. Published by Macmillan India Limited New Delhi **ISBN: 1403922357**. INBK103842 **http://www.macmillanindia.com**
3. Mukherjee, S. (1999). Remote sensing Applications in Applied Geosciences. Published by Manak Publications. New Delhi. **ISBN 81-86562-69-9 https://www.vedamsbooks.com/no14304.htm**

4. Mukherjee, S. (2007). New Trends in Groundwater Research. ISBN: 1-906083-03-7, COOPERJAL LTD London, UK. **http://www.ideaindia.com**
5. Mukherjee .S. (2010). Water Resource Management. ISBN: 9783838381084 LAP Lambert Academic Publishing Germany http://www.booksunlimited.ie/Books/Mukherjee-Saumitra/Water-Resource-Management/9783838381084.htm
6. Mukherjee. S.(2011). Sun-Earth-Cosmic connection ISBN **978-3-8443-0731-3** LAP Lambert Academic Publishing Germany http://www.springer.com/earth+sciences+and+geography/earth+system+sciences/book/978-81-322-0729-0
7. Mukherjee,S. (2013).Extraterrestrial Influence on Climate Change , ISBN 978-81-32207290Springer.http://www.springer.com/earth+sciences+and+geography/earth+system+sciences/book/978-81-322-0729-0
8. Mukherjee S with Srivastava, P.K, Gupta, M and Islam, T.(2014). Remote sensing applications to environmental research. Springer. http://www.springer.com/earth+sciences+and+geography/geophysics/book/978-3-319-05905-1
9. Mukherjee Saumitra with Islam T, Srivastava P.K. , Gupta, M and Zhu,X. (2014).Computer Intelligence Technique in Earth and Environmental sciences, Springer. *Published by Springer Verlag, USA. ISBN 978-94-017-8642-3* http://www.springer.com/environment/book/978-94-017-8641-6
10. Mukherjee, Saumitra (2023). **Extraterrestrial Remote Sensing and Climate Change**. Publisher : Wiley; 1st edition (9 December 2022). Hardcover : 176 pages ISBN-10 : 1119164621 ISBN-13 : 978-1119164623

Chapter in Books

1. Mukherjee Saumitra with 150 co authors across the world. (2021). Solar System – Wide significance of Mars Polar Science, A white paper submitted to the planetary science Decadal survey 2023 2032. A portion of the research was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration (80NM0018D0004). https://surveygizmoresponseuploads.s3.amazonaws.com/fileuploads/623127/5489366/31-39a2d822b848ef65118711a490b992a8_White_paper_Mars_Polar_v7.pdf
2. Chandrasekhar Azad Vishwakarma, Vikas Rena, Deepali Singh and Saumitra Mukherjee (2021). Exploration of water resources using Remote Sensing and Geographic Information System Groundwater Geochemistry: Pollution and Remediation Methods in Groundwater Geochemistry edited by S Madhav. Willy Wiley-Blackwell; 1st edition (15 July 2021) ISBN -10: 1119709695
3. Mukherjee Saumitra (2020). Effect of Star-Burst on Sun-Earth Environment Vision and Voyages for Planetary Science in the Decade 2013-2022 The National Academic Press USA https://solarsystem.nasa.gov/studies/41/effect-of-star-burst-on-sun-earth-environment/ https://www.nap.edu/catalog/13117/vision-and-voyages-for-planetary-science-in-the-decade-2013-2022

DOI: https://doi.org/10.17226/13117 ISBNs: Paperback: 978-0-309-22464-2 E book: 978-0-309-20957-1

4. Mukherjee, Saumitra, Yadav,K and Eslamian,S. (2017). Soil Contaminations in Arid and Semi arid Lands. Handbook of Draught and Water scarcity: Environmental Impact Impact and analysis of Draught and water, Chapter 29, Pp: 547-557,CRC Press (In Press). https://www.crcpress.com/Handbook-of-Drought-and-Water-Scarcity-Environmental-Impacts-and-Analysis/Eslamian-Eslamian/p/book/9781498731041
5. Mukherjee, Saumitra (2014).Procedure for selection of check dams site in Rain water harv esting. . Chapter 23, Handbook of Engineering Hydrology, Fundamentals and Applications. Pp 486-500 CRC Press http://www.crcpress.com/product/isbn/9781466552418
6. S.N.Sashtri, A.Singh, **Saumitra Mukherjee**, S. Eslamian and C.K.Singh (2014). Groundwater Exploration: Geophysical Remote sensing and GIS Techniques. Handbook of Engineering Hydrology, Fundamentals and Applications. Pp CRC Press http://www.crcpress.com/product/isbn/9781466552418
7. P.Sajadi, A.Singh, **Saumitra Mukherjee** and K.Chapi (2014). Hydrological investigations of Dahalgaon plain,Kurdistan, Iran using geophysical techniques. Environment and Biodiversity, Ed. N.Gupta & D.K.Gupta, Narendra Publishing House, Delhi.
8. **Mukherjee, S**., J.B.D Pradeep Kumara and C.K.Singh (2012). Remote Sensing Applications to Infer Yield of Tea in a Part of Sri Lanka Chapter IV in Book Crop Improvement Under Adverse Conditions Tuteja, Narendra; Gill, Sarvajeet Singh (Eds.)(Springer, New York)2012, 438 p. 74 illus., 51 in color.ISBN 978-1-4614-4632-3 http://www.springer.com/life+sciences/plant+sciences/book/978-1-4614-4632-3
9. Joao Fernando Pereira Gomes, **Saumitra Mukherjee**, Milan M. Radovanović, Boško Milovanović, Luka Č. Popović, Andjelka Kovačević, Chemical Engineering Department, IST, Instituto Superior Técnico, Torre Sul, Lisboa, &Portugal. 2012.Solar Wind: Emission, Technologies and Impacts Possible Impact of the Astronomical Aspects on the Violent Cyclonic Motions in the Earth's Atmosphere .Nova Science Publishers. **ISBN:** 978-1-62081-984-5 https://www.novapublishers.com/web/web_files/NewTitles/08_2012_August%20New%20Titles.pdf
10. Mukherjee.S.(2011). Advances Sun-earth-cosmic connection to understand early warning of earthquakes. in Earth Sciences, Vol. II Edited by Satish C. Tripathi, Satish Serial, Geological Survey of India 2011, xvi, 362 p, ISBN : 81-89304-92-5 http://www.earthscienceindia.info/publication.php
11. Mukherjee, S. (2003). Security Implications of Climate Change. In India's National security-Annual review (Ed.Satish Kumar). Published by India Research Press. ISBN 81-87943-56-4**. http://www.indiaresearchpress.com**
12. S. Mukherjee (1998), The Islands chapter 2.15, pp264-268 in Dying Wisdom (Rise fall and potential of India's traditional water harvesting system, State of India's Environment A citizens report. Edited by Anil Agarwal and Sunita

Narayan Published by centre of Science and Environment, New Delhi. ISBN No: **81-86906-07-X** **www.cseindia.org/html/extra/twhs.htm**

Publications in Peer Reviewed Journals.

1. Saumitra Mukherjee, Nidhi Roy, Priyadarshini Singh and Deepali Singh. (2022). Characterization of surface topography and mineralogy of Cardanus and Krafft craters in the western Procellarum region of Moon. J.Earth.Syst.Sci. (2022) 131:181 https://doi.org/10.1007/s12040-022-01928-8
2. Singh, D; Sinha R.K and **Saumitra Mukherjee** (2022). Astrobiological potential of Fe/Mg Smectites with special emphasis on Jezero crater, Mars 2020 landing site **Astrobiology**, Issue 5(https://doi.org/10.1089/ast.2021.0013).
3. Singh, D., Singh. P ; Roy N and **Saumitra Mukherjee** (2022).Investigation of mineral assemblages in a newly identified endorheic playa near Huygens basin on Mars and their astrobiological implications.***Icarus***,372(2022)114757
4. Saumitra Mukherjee (2021) Changes in Heliophysical Parameters on Global Environment and Health. Heliophysics 2050 White Papers 2021 https://www.hou.usra.edu/meetings/helio2050/pdf/4131.pdf https://www.hou.usra.edu/meetings/helio2050/pdf/helio2050whitepapers_program.htm

5. Sajadi P., Singh A and **Saumitra Mukherjee** (2021). Assessing the key drivers of stream network configuration dynamics for tectonically active drainage basins using multitemporal satellite imagery and statistical analyses Geocarto International. http://10.1080/10106049.2021.1871668 Taylor and Francis
6. Saumitra Mukherjee (2021). Pixel Based Change To Mitigate Pandemics. Journal of Earth Science and Technology, Vol.2., No.1 (2021);1-2;ISSN: 2719-4094 http://www.htpub.org/Journal-Of-Earth-Sciences-And-Technology/
7. N. Roy, P. Singh, D. singh and Saumitra Mukherjee(2021).Morphological and Mineralogical Characterization of Cavalerius crater in the Equatorial Transition Region of Moon. ECOLOGY, ENVIRONMENT AND CONSERVATION, in 2021 (3) Issue.(www.envirobiotechjournals.com).
8. Saumitra Mukherjee and Singh P.(2021). Mitigation of the Covid 19 Pandemics in Tectonically active areas. Jour.of GIS and RS application and Planning, Volume 11,Issue 4, Serial No.42,Winter 2021Pp 76-86 ISSN 2476-3586 http://gisrs.semnaniau.ac.ir/article_680087_fb65983e4a4cdc25de2dbf52bb6271ae.pdf
9. Rena V, Kamal V, Singh D, Roy N, Shikha A and Saumitra Mukherjee (2021). Hydrological assessment of high salinity in groundwater in parts of Bharatpur District, Rajasthan, India. Eco.Env and Cons., 27 (May Special Issue) 2021 (Pp.(S 372-S380) ISSN0971-765X
10. Tripathi J.N., Singh A.K., Dey C and Saumitra Mukherjee. (2021). Spatial Variation of Tropospheric NO2 Concentration During First Wave CoVID-19 Induced Lockdown Estimated From Sentinel-5 Precursor. Research Squire https://doi.org/10.21203/rs.3.rs-985606/v1

11. Saumitra Mukherjee, Singh D, Singh, P and Roy N.(2020). Morphological and Morphometric analysis of a topographic depression near Huygens basin, Mars:

identification of a putative endorheic playa. Geomorphology, Vol.351, 106912 https://doi.org/10.1016/j.geomorph.2019.106912

12. Asthana H and Saumitra Mukherjee (2020). Comparative analysis of Pixel and Object based classification approach for rapid Landslide delineation with the aid of open source tools in Garhwal Himalaya. Journal of the Geological Society of India, 96, 65-70(2020).(Springer) https://doi.org/10.1007/s12594-020-1505-1

13. Singh P and Mukherjee Saumitra (2020).Chemical Signature detection of Groundwater and Geothermal waters for evidence of crustal deformation along fault zones. 582,(2020) Journal of Hydrology(Elsevier).
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Refreshers Course Lectures:

Besides routine refreshers course lecture in Geology and Remote sensing (since 1992) following recent lectures were delivered.

1. Hydroelectric Power projects and Sustainability studies by using Geospatial Techniques.Proc.Training Course on "Application of Remote sensing & GIS in Environmental and Socio-economic Impact assessmentStudies in Hydropower Projects. 27-28 June 2019, New Delhi Pp 196-209
2. Mukherjee, S. (2014)Remote sensing Applications in Environmental Sciences. JNU refreshers course lecture on Environmental Sciences.
3. Mukherjee S.(2013). Remote sensing applications in Earthquake Prediction, Key note lecture of Convener in the 1st Disaster Manament Refreshers course organized by JNU.
4. Mukherjee,S. (2012). Geoinformatics for Computer Sciences,Refreshers course on 16th July 2012 Academic Staff College, JNU (Invited resource person for Computer Sciences,JNU)
5. Mukherjee S. (2011). Geology and Remote sensing. Refreshers course in Geology, Department of Geology, Banaras Hindu University, Varanasi, 15th January 2011.
6. Mukherjee,S.(2011). Remote Sensing and GIS applications in Environmental Sciences. Academic Staff College Computer Sciences Lecture. 20th September 2011 JNU, New Delhi
7. Mukherjee. S.(2010). Space Environment Viewing and Analysis Network in JNU. Interdisciplinary Refreshers course in Physics and Electronics, Department of Physics & Astrophysics, University of Delhi. 25th December 2010

International and National Conference/Seminar Publications International Conference/Seminar

1. Saumitra Mukherjee, Priyadarshini Singh, Deepali Singh and Nidhi Roy (2021). Landing Site selection on Mars in LAPIGIYA quadrangle. Proc.2nd International Mars sample return 2018.(LPI Contribution No. 2071) https://atpi.eventsair.com/QuickEventWebsitePortal/2nd-international-conference-on-mars-sample-return/home
2. Saumitra Mukherjee (2021). Heliosphere-Solar-Terrestrial Impact on Himalaya India. XVII th HvAr Astrophysical Colloquium, The Sun and Heliosphere 20-24 September 2021 Online https://oh.geof.unizg.hr/images/meetings/XVII-HAC/xvii-hac-abstract-book.pdf
3. Saumitra Mukherjee (2020). Ganga Conservation by Geological-Space Sciences for Societal Development.27th October 2020, Vigyan Prasar www.youtube.com/user/VigyanPrasar1 https://www.youtube.com/watch?v=jjhoHhOT51s
4. Saumitra Mukherjee (2021). Radar Polarimetry- An overview of planetary Sciences 15th March 2021online zoom platform
5. Saumitra Mukherjee (2021). Uttarakhand Avalanches, Citizens Forum India 20th February2021 **https://www.facebook.com/Citizens.INDIA/posts/3060937434133493**
6. Saumitra Mukherjee (2018). Organized 1st Indian Earth Engine Workshop with Google, on 23rd February 2018. It was attended by 70 participants across India. https://www.nature.com/natureevents/science/events/68965-Earth_Engine_Training
7. Saumitra Mukherjee, D. Singh,P.Singh and N Roy (2018). Evidence of Glaciation based on Peak Ring Morphology of Hugens basin, LPSC 2018, No.1925, Huston ,Texas, USA
8. Saumitra Mukherjee, N Roy,P. Singh and D,P.Singh (2018).Mineralogical analysis of the fractured floor region within Cardanus Crater, 49th LPS 2018, No. 2083 Pp.1915
9. Saumitra Mukherjee (2018). Water Conservation and Water use efficiency. Training Workshop on Water Supply and Management WASH innovation Lab Faridabad and Manav Rachana University Faridabad, Haryana, India 18-19 July 2018.
10. Nidhi Roy,Deepali Singh, Priyadarshini Singh and Saumitra Mukherjee (2018). P23D-3472: Morphological variations in the fractured floor craters based on crustal thickness and availability of hydroxylated minerals within the lunar equatorial region. AGU Fall Meeting December 10-14 2018, P23D-342 https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/433133
11. Deepali Singh, Priyadarshini Singh, Nidhi Royand Saumitra Mukherjee (2018)EP23F-2386: Identification of Potential Desiccated Polygons in the Equatorial Region of Mars: Hints of Recent Liquid Water Activities. AGU Fall Meeting December 10-14 2018 EP23F-2386 https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/464959
12. C.A.Vishwakarma and **Saumitra Mukherjee** (2017). Land surface temperature estimation of South Sikkim using Landsat datasets:International Conference on

Engineering, Technology and Applied Science-ICTEA 2017-fall, Kitakyushu, Fukuoka, Japan.

13. H.Asthana; N. Singh; C.A.Vishwakarma, P.Singh and **Saumitra Mukherjee** (2017). Landslide Susceptibility Mapping in a part of Alaknanda Valley using Frequency ratio model: 4th Indian Landslide Congress, IIT Bombay, Mumbai.
14. Saumitra Mukherjee (2016). Hyperspectral data preprocessing for Atmospheric correction.EUFAR/ESA workshop on "Atmospheric correction of Remote sensing Data". 26-28 October 2016 Berlin Germany http://www.eufar.net/weblog/2016/06/27/eufaresa-expert-workshop-atmospheric-correction-remote-sensing-data/
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Quaternary Climate Change: New Approaches and Emerging Challenges, BSIP Lucknow,India December 15-16, 2014. http://www.bsip.res.in/national%20conference%20.html

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32. Paper Presented by Saumitra Mukherjee and chaired the session in 4th National Ground Water Congress on 13th April 2012 at Vigyan Bhawan. "*Remote sensing and GIS application for Sustainable Hydrogeosciences*" **Saumitra Mukherjee**, Chander Kumar Singh, Kumari Rina. Proc.Theme: Water and Food security,Pp 97-104
33. Saumitra Mukherjee with Kumari Rina(2011). Poster presented on the topic *"Hydrogeochemical Processes Governing Groundwater Quality in the Sabarmati Basin, Gujarat"* **The 32nd Asian Conference on Remote Sensing**. **3-7 October, 2011, Taipei, Taiwan.** Kumari Rina, Chander Kumar Singh, Saumitra Mukherjee
34. Kumari Rina, C. K. Singh, **S. Mukherjee** Paper presented in **3rd International Conference on Climate Change & Sustainable Management of Natural Resources.** "*Geochemical modeling and Ionic ratio in integration with GIS to infer Groundwater salinity in parts of Sabarmati Basin, Gujarat*"
35. **Chander Kumar Singh**, S. Shashtri, Kumari Rina, R. P. Singh, B. C. Oinam and S. Mukherjee Paper presented in **IGCP Conference 582** on the topic **"***Qualitative assessment of parameters controlling groundwater quality in Sabarmati River Basin*"
36. Chander Kumar Singh, S. Shashtri, Kumari Rina, R. P. Singh, B. C. Oinam and **S. Mukherjee** Paper presented in **National Seminar on Environmental Pollution and Bioremediation**, SES, Jawaharlal Nehru University on GIS based multi-criteria analysis and geochemical modeling to assess the groundwater quality in a part of Punjab.
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40. **Mukherjee, Saumitra (2011). Impact of Water Conservation on Vegetation. School of Life Sciences & School of Environmental Sciences** organized an International workshop On **Water Resources: Internat.Workshop on Impact on Agriculture, Health and Environment (Organized by JNU and Washington University, USA),11-12th January 2011 held at SLS,JNU auditorium.11th & 12th January 2011**

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Media Articles:

1. **Saumitra Mukherjee: Char Dham Railway Project:Government must research Geological Risks, warns experts. 2017 Yahoo News.**

Editor in Chief

Associate Editor (2022 onwards)
Journal of Earth System Sciences
Environmental Informatics and Remote sensing award by Frontiers in Environmental Science 2021 Editors award.
https://blog.frontiersin.org/2022/03/25/frontiers-in-environmental-science-2021-editor-awards/

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http://www.frontiersin.org/journal/viewspecialtopicabstracts.aspx?role=12
Bulletin of Environmental and Scientific Research 8579 Greenbelt Road,Apt.202, Greenbelt MD, 20770, USA ISSN: 2278-5208
http://www.besr.org.in/index.php/besr/index
Review Editor: Frontiers in Earth Sciences *Nature Publication Group* (2013-till date)
http://community.frontiersin.org/people/ProfessorMukherjee/121512
Guest Editor: Geocarto International (Remote sensing Applications in Geosciences) Taylor & Francis (2011-2012)
http://www.tandfonline.com/doi/pdf/10.1080/10106049.2012.676819
Review Editor: Journal of Geophysics and Remote sensing, 2013 onwards.
http://www.omicsgroup.org/journals/editorialboard-geophysics-remote-sensing-open-access.php
Member Editorial Board: Journal of Earth Sciences and Climatic Changes 2013 onwards. http://omicsonline.org/editorialboard-earth-science-climatic-change-open-access.php
Academic Editor: British Journal of Applied Science and Technology.
http://www.sciencedomain.org/editorial-board-members.php?id=5

Reviewer of Journals

1. International Journal of Remote Sensing, Taylor & Francis**.** UK.
2. Journal of Atmospheric and Solar-Terrestrial Physics, Elsevier. Amsterdam
3. Environmental Earth Sciences
4. Planetary and Space sciences
5. Hydrology
6. Geocarto International
7. Hydrological Processes
8. Journal of Indian Society of Remote sensing, Derhadun, India.
9. Journal of Spatial Hydrology, USA

Convener/Organizer of the following Workshop/Conferences/Meetings

1. Convener: Rainwater harvesting and Ground water, 3rd World Water Forum 2003 Kyoto, Osaka and Shiga, JAPAN.
2. Convener: Implementing Integrated Water Resource Management 4th World Water Forum 2006 Mexico City.
3. Convener: Environmental flow requirements, Hydrological Sciences 1st EGU General Assembly European Geosciences Union 25-30 April 2004 NICE. France.
4. Convener: Sun-earth connection triggers Earthquakes, Seismology, EGU general Assembly. European Geosciences Union, 24-29 April 2005 Vienna Austria.
5. Convener: Integrating methods for water resources management, Hydrological Sciences, EGU general Assembly. European Geosciences Union 2-7 April 2006 Vienna Austria.
6. Convener: Sun-earth connection triggers Earthquakes, Seismology, EGU general Assembly. European Geosciences Union, 2-7 April 2006 Vienna Austria.
7. Convener, Earth and Space sciences informatics, AGU Joint Assembly, Acapulco, Mexico, 22-25 May 2007.
8. Regional Editor. Research Journal on Environment and earth Sciences. Maxwell Scientific Organizations

List of Project

2. S.Mukherjee P.I. Selection of Check dam sites and groundwater exploration points in JNU. IRS and SPOT satellite data was used and checked by resistivity and magnetic methods.(Initiated the work in 1993 Support by CGWB,MOWR, 1995-1999)
3. S.Mukherjee P.I. Re-evaluation of Seismogenic potentiality of Delhi Rohtak area by using satellite data and geophysical investigations. IRS satellite data was used to do Seismic Microzonation of Delhi-Rohtak area. Supported by Accelerometer survey in suitable locations selected by remote sensing methods. Supported by ESS, DST, 1996 - 1998
4. S.Mukherjee P.I. Oceansat-1 Data Evaluation, Space Applications Center, ISRO, Ahemedabad, India 1998-1999.

5. S.Mukherjee P.I. Blue print of water resource management in North 24 Parganas, West Bengal by satellite remote sensing, Analysis of satellite data for land suitability analysis for qualitative and quantitative estimation of ground water resources. Supported by Department of Environment, Government of West Bengal, 1998 – 2000.
6. S.Mukherjee P.I.Geomorphology and Lineament mapping. ISRO-GSI joint National Project 2010-2014
7. S.Mukherjee Investigation of Tectonic processes in the Lunar South Polar region using Mini SAR and other data. First ISRO-SAC pilot project for Chandrayan-1 data analysis. 2010-2013.
8. S.Mukherjee P.I.Ganga Basin Geomorphology. MOEF National Project 2010-2012
9. S.Mukherjee P.I.Assessment of tectonic implications on groundwater in vicinity of Faridabad and Ghaziabad faults across river Yamuna.DST sponsored Project (2011-2013).
10. S.Mukherjee. Application of satellite remote sensing to support water resources management in the Medjerda watershed: Impacts on the hydrological and hydrogeological functioning in the lower valley of the basin.Indo Tunisian project. 2013-2016.
11. S.Mukherjee C PI with C.K Singh **Targeting low-arsenic and low-fluoride groundwater to reduce exposure in rural Punjab, India with** Alexander van Geen of Lamont-Doherty Earh Observatory, Columbia University) Project Dates: August 2013 to January 2015 http://sites.nationalacademies.org/PGA/dsc/peerscience/PGA_084035 Sponsored by DSC ,The National Academies 500 5th St NW - KWS 502 Washington, DC 20001 USA
12. Study of geomorphological features and associated signature detection to infer geological processes and possible presence of water and life forms within and around Large impact craters in the equatorial Martian region.
13. Study of the identification of the unique morphological features on the polar lunar surfaces. Funded by ISRO Department of Space Government of India (2017-2020)
14. Rock types and morphological signature detection of Mars to infer natural Resources. By ISRO Department of Space Government of India. (2017-2020)

Other contribution for my own organization (JNU)

1. As Faculty Advisor to the Vice Chancellor JNU on Water Resource Management (1994 to 2008) Selected groundwater exploration sites, Artificial recharge sites and Integrated Water Resource Management for JNU by using satellite data and geophysical methods. In 1994 initiated Ground water drilling in the campus successfully in collaboration with ISRO-CGWB-IIT Delhi. Further in 2005-2006-2007-2008 selected 8 sites utilizing Magnetic, Resistivity and Satellite data, the discharge was very good in all these Tube wells drilled so far (20,000 LPH to

40,000 LPH with less than 10 meter drawdown). The University is totally depending on this water during no supply of MCD

2. Helped University since 1992 in scientific planning by using DEM Satellite data for the expansion of JNU campus and selection of sites for Rooftop rainwater harvesting
3. Consultant in Water Resource and Architectural Heritage Management with following firms:
    1. INTACH : Various Rainwater Harvesting site selection projects in Delhi, Rajasthan areas.
    2. Aga Khan Foundation
    3. Indira Gandhi National Open University
    4. RR Hospital Ministry of Defense Government of India
    5. Expert of Rainwater Harvesting in different media including Zee News, AjTak, BBC, Door Darshan etc
    6. https://youtu.be/Mr0ExqaM7wc
       https://www.youtube.com/watch?v=OgWqj9MPGhQ
       https://slideplayer.com/slide/11901255/
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