Bio-Data

Name : Dr Sunil Dhar
Designation: Associate Professor (w.e.f 12.09.2017)
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Academic Qualifications

B.Sc. Hons. Geology, Panjab University, 1st Division (64%).
M.Sc. Hons. Geology, Panjab University Chandigarh, 1st Division (66%) **[Gold Medalist]**
Ph.D. in Geology, Panjab University, Chandigarh

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Post Doc Fellow, University of Bern, Switzerland

Teaching Experience

25 years PG/UG

Specialisation

Igneous Petrology, Tectonics, Geochemistry

Research Interest

Glaciology, Seismic hazards and geochemical precursors and zonation, Geomorphology, Watershed Management & Lunar Geology

Some Assignments/ Affiliations (Previous and Present)

Associate Professor and Head, Department of Geology, Government Post Graduate College, Dharamsala, Himachal Pradesh

Member BOS/ School Board (Earth Sciences) Central University of Himachal Pradesh

Coordinator RUSA and B.Voc programmes, Government Post Graduate College, Dharamsala, Himacahal Pradesh

Research association with the, Space Application Centre [ISRO], Ahmedabad, Jawaharlal Nehru University [JNU], New Delhi, Geophysical Laboratory Guru Nanak Dev University, Amritsar and Remote Sensing Lab. of Science and Technology Department, Govt. of Himachal Pradesh regarding environmental/ seismological/glaciological related studies of Himachal Himalayas.

Programme Officer National Social Service (NSS) [1997-2004].

Resource person for Disaster Management Course (IGNOU) Distance Education Programme.

Member Board of Studies in PG Earth Sciences H.P. University, Shimla.

Incharge UGC affair's, Government PG College, Dharamsala, Himachal Pradesh

Coordinator UGC sponsored add- on course on Environment and disaster management.

Examiner of Ph.D/ M.Phil dissertation/s of JNU,New , Jammu University and GNDU, Amritsar, Mumbai University, University of Aurangabad

Participated in the Himalayan Chief Ministers' Conclave and workshop on Indian Himalayas, Glaciers, Climate Change and Livelihood (Shimla, 2009).

Member Working Group 'Regional Center for Monitoring Glacial Environment and Climate Change' Government Himachal Pradesh, Shimla.

Participated in the first Curriculum Development meeting, School of Environmental Science (as expert), Central University of Himachal Pradesh (2011)

Participated in the expert's meeting on Indian Network for Climate Change Assessment (INCCA) Black Carbon Programme, Ministry of Environment and Forests (GOI), New Delhi.

Participated in the Indo-Swiss collaborative programme on Glacial studies of Indian Himalayan, Swiss Government sponsored initiative, JNU, New Delhi.

Member of the Learned Societies

Member Indian Geological Association.
Joint Secretary India Geological Association (1992-1993)

Selected Publications

The Association of Hypersolvus -Subsolvus Granites. A Study of Malani igenous suite, India. J. Geol., Soc., India, v. 42, pp. 449-467.

Tectonic significance of the acid & basic dykes associated with Jalor Magmatism.Western Rajasthan, India. Mem. J. Geol. Soc. India, pp 375-389.

Sr. Pb & Nd isotope studies and their bearing on the petrogenesis of the Jalor and Siwana Igneous Complexes, Western Rajasthan, India. J. Geol, Soc. India v. 48, pp 151-160.

Mineral Chemistry of the amphiboles from Jalor ring complex Rajasthan. Indian Mineralogist, v. 31, no. 5, pp 24-30.

Rb - Sr Isotope dating of Neoproterozoic (Malani Group) Magmatism from South West Rajasthan, India : Evidence of younger Pan-African event by 40Ar/ 39Ar studies. Gondwana Research, V.3. No. 1. pp 119-121.

Mineral Chemistry and evolution of Biotities from Jalor, Tosham and Jhunjhunu Igneous complexes, Malani Igneous Suite, India. J. Geol.Soc. India, V.6, pp 567-571.

Geological Significance of Radon in the Eco-System of Dharamshala Area, Himachal Pradesh, India. Natural Hazards & their mitigation. Spl. Vol. Bull. Indian Geologist Association, P.U. Chandigarh. V.35, no.2, pp 43-48

Geological significance of soil gas radon: A case study of Nurpur area, district Kangra, Himacahal Pradesh, India. Radiation Measurements,V. 41, pp 482-485

Glacial retreat in the upper Chandra basin : A case study of Samundra Tapu Glacier, District Lahaul and Spiti, Himachal Pradesh, India. Journal Indian Remote Sensing, V.34, No.1 pp 33-46.

Glacial Retreat in Himalayas using Indian Remote Sensing Satellite Data. Current Science, V 92, No.1, pp 69-74.

Uranium, Radium and Radon Measurements in the Environs of Nurpur Area, Himacahal Pradesh. Environ. Monit. Assess, 128, pp 301-319.

Fault Delineation study using soil-gas method in Dharamshala area, NW Himalayas, India Radiation measurement (2008) 43, pp 337–342.

Anomalous behaviour of Radon in soil and groundwater prior to Uttarakashi earthquake in NW Himalayas, India. Atti della "fondazione giorgio ronchi" ANNO LXIV, N.2, pp 173-180.

Earthquake precursory studies in Kangra Valley of North West Himalayas, India with special emphasis on radon emission. Applied Radiation and Isotopes; 67, pp 1904-1917.

Reconstruction of the moraine dammed lake, based on field evidences and paleohistory, Samudra Tapu Glacier, Chandra Basin., Himachal Pradesh. Journal Indian Remote Sensing, 38, pp 133-144.

Soil-gas radon/helium surveys in some neotectonic areas of NW Himalayan Foothills, India. Nat.Hazards Earth syst. sci,, 10 pp 1221-1227.

Radon Monitoring in Soil gas and Groundwater for Earthquake Prediction Studies in North West Himalayas, India. Terrestrial, Atmospheric and Oceanic Sciences Journal, 21, no.4, pp 685-695

Monitoring of TDS and conductivity in groundwater in the seismically active region in NW Himalayas, India. Earthquake Science, 23, pp 295-299.

Measurement of anomalies in the spatial distribution of radon content of soil gas in some regions of Middle Shivaliks, India. Advances in Applied Science Research, 3(5), pp 3060-3063.

Earthquake precursory studies at Amritsar Punjab, India using radon measurement technique. International Journal of Physical Science, 7(42) pp 5669-5677.

Geological significance of Radon gas in soil and underground water; a case study of Nurpur and its surrounding regions, district Kangra, Himachal Pradesh, India. Radiation Protection and Environment, 36, no.1, pp 3-9.

Are the Himalayan Glaciers retreating. Current Science, 106, no.7, pp 1008-1013.

Lineament control and seismo-tectonic activity of the areas around Dharamsala Himalayan Frontal. Zone, Himachal Pradesh, India. Himalayas (Geological Aspects): In P.S.Sakalni ***ed.*** Spl V. 4. Satish Serial Publishing House, Delhi, pp 73-78.

Geo-environmental investigations of the Baner and Neogal watersheds, Himalayan Frontal Zone, district Kangra, Himachal Pradesh, India. Environmental Geo-Hazards "Science and Society": In K. Sharma,S. Badoni and V. Negi ***ed.*** Spl. Publ. Research India Press, New Delhi, pp 87-94

Geo-environmental impact of slate mining in the Dhauladhar Himalayas, District Kangra, Himachal Pradesh, India. Aspects of Geology and Environment of the Himalayas. In Charu C. Pant and Arun K. Sharma ***ed***. Gyanodaya Prakashan, Nainital, pp 329-334

Slate Mining at Khaniyara, Lesser Himalaya, India. An omen to mass movement. India: Geomorphological Diversity. In K.R Dikshit, Vishwas S. Kale and M.N.Kaul ***ed*** . Rawat Publications, Jaipur, pp. 256-267.

Research Projects [Completed]

Awarded a research project by the SAC/ISRO, GOI, entitled "Monitoring of glacier terminus and Peri glacier geomorphology in Chenab basin, Himachal Pradesh" in August 2005 and extended in 2009. The work undertaken in the project encompassed monitoring of the snouts of important glaciers, identify position of snout with reference to peri glacier geomorphologic features, reconstruct Palaeo-glacial history using Remote Sensing data to estimate glacial stored water during glacial maxima in the Chenab basin of district, Lahaul and Spiti, Himachal Pradesh. The budget of the project was over 21 lac and the time frame of the project was three years initially. The project was be carried out in joint collaboration with Space Application Centre, Ahmedabad [Department of Space]

Awarded a research project by DST, GOI on "Seismo-Tectonic studies and Health Risk Assessments in the Himalayas with Special Emphasis on the Radon and Helium emission" in September, 2006 . Work undertaken in the project was to monitor the behavior of radon, helium, and hydrogeological parameters along the major lineaments and the transverse faults in relation to the seismic activity in the Himachal Himalayas.

The study also focused on the environmental radiation monitoring for the assessment of health risk in the region. Thrusts/lineaments and transverse faults provide easy locale for the migration of gases from deeper level of the earth's interior. The monitoring of the radon, helium and other parameters along tectonically active faults/ thrusts in relation to the ongoing seismicity of the region was used as a precursor to an impending earthquake. Major lineaments and transverse faults will be identified using satellite data [1:50 000 and 1:250 00 scale] and reconnaissance survey. Preparation of hazard zonation map based on the lineament/thrust geochemistry geological/geomorphological /seismological data. The research project was an inter-disciplinary and inter-institutional in character and involved other researchers from Guru Nanak Dev University [Amritsar], Panjab University [Chandigarh] and Nuclear Science Centre [New Delhi].
Total funding in the project was over 75 lac.

(c) Awarded research project on Geo-Environmental Investigation of Baner and Neogal Watersheds of the Himalaya Frontal Zone, Distt. Kangra H.P. by Institute of Integrated Himalyan Studies (UGC Centre of Excellence) H.P. University, Shimla The studies encompassed investigation on geomorphology, soil erosion, structural and seismological elements and other related attributes of the watersheds zones of district Kangra, Himachal Pradesh, which is spread over an area of 1800 km². Amount mobilized 1.5 lac.

(d) Awarded a research project in November.2010 by SAC/ISRO, GOI. The project budget is 20 lac and is for the period of three years initially. The main aim of the study in the project is to monitor retreat/advance of the main glaciers in the Chandra basin of Lahaul and Spiti and observe the impact of global warming on the glacier health of Himalayas. Apart from recessional studies of the benchmark glaciers, geomophological parameters of the glaciated valleys shall also be studied. It is also proposed to carry out dating of the glacial sediments in order to establish glacial advance during glacial maxima.

Consultancy Projects Completed

Carried out consultancy assignment of 300MW Gyspa Dam Hydro Electric Power Project in the Lahul and Spiti district of Himachal Pradesh , executed by HPPCL (Himachal Pradesh Power Corporation Limited) in association with Scott Wilson India, Pvt. Ltd. New-Delhi. Work was carried out on the study of GLOF's and reservoir health of the upper Bhaga basin, in of Lahaul and Spiti region of Himacal Pradesh during 2011-2012. Amount mobilized 2 lac.

Research Project (ongoing)

Awarded research project in August 2016, by ISRO (GOI). Title of the project is " Study of morpho-tectonic evolution of Mons Rumkar and Orientale basin of the moon". The study under this project relates to Lunar geology and is primarily aimed at studying the

crustal evolution of the moon using the Chandrayaan 1 data. Budjet sanctioned Rs.23 lac for the period of three years.

Awarded research project in August 2017 by ISRO (GOI) under the programme: Vulnerability and risk analysis of Geohazards in Himalayan region. Under the programme study of landslides of district Kangra and GLOF study of Gepanghat moraine dammed lake of district Lahaul and Spiti Himacahal Pradesh shall be carried out. Total budget of the project is 13 lac.

MoU

Collaborative R&D studies on the earthquake precursors such as Radon in soil and water in the outer Himalayan belt of the Himachal Pradesh State in devising broad seismic zonation of the region. Studies undertaken in collaboration with State Centre of Climate Change (State Council of Science Technology and Environment,) Government of Himachal Pradesh from June, 2013 onwards. The collaborative work is underway.