Cell No: +92321-4025836
Department of Space Science
University of the Punjab, Lahore,
Pakistan.
Email: khalid.m270@yahoo.com
khalid.spsc@pu.edu.pk
http://faculty.khalid-mahmood2.pu.edu.pk/

Dr. Khalid Mahmood

Assistant Professor

EDUCATION:

- **Ph.D.**, Space Science, Punjab University, Lahore 2014-2018. Research Thesis on "**Development of ranking criteria for assessment of existing and proposed solid waste dumping sites in Faisalabad, Pakistan with the help of Remote Sensing and GIS techniques**".

- **M.Phil.,** Space Science, Punjab University, Lahore 2010-2012. Research theses on "**Assessment of Existing Landfill Sites using GIS**".

- **B.S.,** Space Sciences Punjab University – Lahore 2004-2008. Research Report on "**A study of snow ice and glacier properties using remote sensing data**".

PROFESSIONAL EXPERIENCE:

October 2013 to date:

Assistant Professor at the department of Space Science, University of the Punjab, Lahore, Pakistan.

April 2009 to October 2013:

Lecturer at the department of Space Science, University of the Punjab, Lahore, Pakistan.

March 2013 to date:

Visiting Faculty at the Department of Geography, University of the Punjab, Lahore, Pakistan.

HONOURS:

- Productive Scientist of Pakistan 2016, declared by Pakistan Council for Science and Technology.
- Ph.D. course work has been completed with highest CGPA, ever in the history of the department.
- Young Productive Scientist of Pakistan 2016, declared by Pakistan Council for Science and Technology.
- Productive Scientist of Pakistan 2015 declared by Pakistan Council for Science and Technology.
- Young Productive Scientist of Pakistan 2015 declared by Pakistan Council for Science and Technology.
- 1st position in M.Phil. Space Science, session 2010-12.
- University Merit Certificate for having distinction in B.S. Space Science, session 2004-08.
- Awarded with merit scholarship in B.S. Space Science for three consecutive years
- Awarded with merit scholarship in M.Phil. Space Science.

RESEARCH / THESIS SUPERVISED:

- Comparison of support vector machine and maximum likelihood classifier to extract land use and landcover of Lahore district, Punjab, Pakistan.
- Delineation of urban footprint of Lahore using microwave remote sensing.
- GIS based groundwater quality segmentation in Shiekhupura city.
- Monitoring urban tree cover along selected roads in Lahore and its environmental impacts using remote sensing and GIS.
- A study of changing groundwater quality trends in Lahore metropolitan, in response to the urbanization and water demand growth using temporal GIS.
- Formation of water quality, aquifer and service area based criteria for potential groundwater bore site selection in Lahore district using geospatial and multicriteria analysis techniques.
- GIS for groundwater assessment in Lahore Metropolitan.
- A study of GIS based groundwater indexing
- Suitable site detection for rain water harvesting by using multivariate GIS techniques.
- A GIS based DRASTIC model for assessing groundwater vulnerability in Lahore

Pakistan.

- A study of water table assessment of Lahore using GIS.
- Optimization of Interpolation methods for groundwater quality parameters to study their spatial transportation.
- Intelligent geo-coding for Lahore city, a web application.
- To develop an automatic route advisor for public transport in Lahore city.

TRAINING WORKSHOPS

- "Water Safety planning & Crises Management" organized by the International Association of Water Supply Companies in the Danube River Catchment Area (AUSTRIA) and World Bank (USA), May 7-8, 2018.
- "How to Respond Reviewer Comments". Training organized by Elsevier Publishing Campus, June 16, 2016.
- "HCFC's Phase-out and Alternatives" organized by OZON CELL, Ministry of Climate Change in Collaboration with HVACR Pakistan at Hotel Pearl Continent, Lahore, February 12, 2013
- "Disaster Risk Management" Organized by National Disaster Management Authority, National Institute of Disaster Management and Department of Geography, University of the Punjab, Lahore, April 11-12, 2011.

RESEARCH PUBLICATIONS:

- **Mahmood K.**, Faizi F., 2018. Groundwater Scarcity Footprint (GSF): A GIS based methodology to assess seasonal and annual fluctuations of scarcity level. 10th Eastern European Young Water Professional Conference: New Technologies in Water Sector, 85-93, May 2018, Zagreb, Croatia.
- **Mahmood K.**, Faizi F., Batool S.A., 2018. A comparison of satellite based indices for hazard assessment of MSW open dumps using spatial analysis. Eurasia 2018 Waste Management Symposium, 153-162, May 2018, Istanbul, Turkey.
- Tariq S., Ul-Haq Z., **Mahmood K.**, Rana A. D., 2018. Spatio-temporal distributions and trends of aerosol parameters over Pakistan using remote sensing. Applied Ecology and Environmental Research 16(3):2615-2637.
- Ul-haq Z., Rana A.D., Tariq S., **Mahmood K.**, Ali M., Bashir, I., 2018. Modeling of tropospheric NO2 column over different climatic zones and land use/land cover

types in South Asia. Journal of Atmospheric and Solar-Terrestrial Physics 168, 80–99.

- **Mahmood K**., Batool S.A, Faizi F., Chauhdhery M.N., Ul-Haq Z., Rana A.D., Tariq S., 2017. Bio-thermal effects of open dumps on surroundings detected by remote sensing - influence of geographical conditions. Ecological Indicators (I.F. 3.898), 82: 131-142.
- **Mahmood K**., Batool S.A, Chauhdhery M.N., Ul-Haq Z., 2017. Ranking criteria for assessment of municipal solid waste dumping sites. Archives of Environmental Protection (I.F. 0.919), 43 (1): 97-107.
- Tariq S., Ul-Haq, Z., Imran A., Mehmood U., Aslam M., **Mahmood K**., 2017. Co2 emissions from Pakistan and India and their relationship with economic variables. Applied Ecology and Environmental Research, 15 (4):1301-1312
- Ul-haq Z., Tariq S., Ali M., Rana A.D., **Mahmood K.**, 2017. Satellite sensed tropospheric NO2 patterns and anomalies over Indus, Ganges, Brahmaputra and Meghna river basins. International Journal of Remote Sensing (I.F. 1.640), 38 (5): 1423-1450
- **Mahmood K**., Muhammad A., 2017. Appraisal of Drinking Water Quality in Lahore Residence, Pakistan. Pakistan journal of scientific and industrial research Series-A: physical sciences, 60(1): 34-41.
- **Mahmood K**., Tariq F., 2017. Temporal GIS to assess nature of groundwater contamination sources and importance of local recharge in Lahore metropolitan, Pakistan. 9th Eastern European Young Water Professionals Conference, 24-27 May, 2017, Budapest, Hungary.
- **Mahmood K**., Batool S.A, Chauhdhery M.N., 2016. Studying bio-thermal effects at and around MSW dumps using Satellite Remote Sensing and GIS. Waste Management (I.F. 4.01), 55: 118-128.
- **Mahmood K**., Ul-Haq Z., Batool S.A., Rana A.D., Tariq S. 2016. Application of Temporal GIS to Track Areas of Significant Concern Regarding Groundwater Contamination. Environmental Earth Sciences (I.F. 1.765), 75:33.
- Ul-Haq Z., Tariq S., Ali M., **Mahmood K.**, Rana A.D., 2016. Sulphur dioxide loadings over megacity Lahore (Pakistan) and adjoining region of Indo-Gangetic Basin. International Journal of Remote Sensing (I.F. 1.640), 37 (13): 3021-3041.
- Khan M.S., Qadir A., Javed A., **Mahmood K.,** Amjad M.R., Shehzad S., 2016. Assessment of aquifer intrinsic vulnerability using GIS based Drastic model in Sialkot

area, Pakistan. International Journal of Economics and Environment Geology, 7(1): 73-84.

- **Mahmood K.,** Batool S.A., Chauhdhery M.N., Daud A, 2015. Evaluating municipal solid waste dump using geographic information system. Polish Journal of Environmental Studies (I.F. 0.896), 24(2): 879-886.
- Batool R., **Mahmood K.,** Hafiza Qimrah, Iqra Basit, Samia Rubab, 2015. Selection of the optimal interpolation method for groundwater quality. Proceedings of the Fourth International Conference on Aerospace Science and Engineering: 325-333.
- **Mahmood K.**, Khan R.M., Ashfaq A., Ahsan H., Shakoor Z., Tanveer T., 2015. Assessment of the Intrinsic Vulnerability to Groundwater Contamination in Lahore, Pakistan. Pakistan journal of Scientific and Industrial Research, 58 (1): 8-16.
- Ul-Haq Z., Rana A.D., Ali M., **Mahmood K.**, Tariq S., Qayyum Z., 2015. Carbon monoxide (CO) emissions and its tropospheric variability over Pakistan using satellite-sensed data. Advances in Space Research (I.F. 1.409), 56 (4): 583-595.
- Ul-Haq Z., Tariq S., Rana A.D., Ali M., **Mahmood K.**, Shahid P., 2015. Satellite remote sensing of total ozone column (TOC) over Pakistan and neighboring regions, International Journal of Remote Sensing (I.F. 1.652), 36 (4):1038-1054.
- Kanwal S., Gabriel H. F., **Mahmood K.**, Ali R., Haidar A., Tehseen T. 2015. Lahore's Groundwater Depletion-A Review of the Aquifer Susceptibility to Degradation and its Consequences. Technical Journal, University of Engineering and Technology (UET) Taxila, Pakistan 20(1): 26-38.
- Batool R., **Mahmood K.**, Qimrah H., Basit I., Rubab S., 2015. Selection of the optimal interpolation method fpr groundwater quality. Fourth International Conference on Aerospace Science & Engineering (ICASE 2015): 325-333.
- Ul-Haq Z., Tariq S., Ali M., **Mahmood K.**, Batool S., Rana A.D., 2014. A study of tropospheric NO_2 variability over Pakistan using OMI data. Atmospheric Pollution Research (I.F. 1.371), 5(4):709-720.
- **Mahmood K.**, S. Kanwal, S.R. Ali, A.H. Ali, T. Tahsin, 2014. “Selection of interpolation for Groundwater observations in Lahore, Pakistan. Pakistan journal of Scientific and Industrial Research, 57 (3): 154-166.
- Ali M., Tariq S., **Mahmood K.**, Daud A., Batool A., Ul-Haq Z. 2014. A Study of Aerosol Properties over Lahore (Pakistan) by Using AERONET Data. Asia-Pacific Journal of Atmospheric Sciences (I.F. 1.347), 49 (5), 1-10.

- **Mahmood K.**, Batool S.A., Rana A.D., Tariq S., Ali Z. and Chaudhry M.N., 2013. Assessment of leachate effects to the drinking water supply units in the down slope regions of municipal solid waste (MSW) dumping sites in Lahore Pakistan. International Journal of Physical Sciences (I.F. 0.54), 8 (28), 1470-1480.
- **Mahmood K.**, A.D. Rana, S. Tariq, S. Kanwal, S.R. Ali, A.H. Ali, T. Tahsin, 2013. "Groundwater Levels Susceptibility to Degradation in Lahore Metropolitan". Science International, 25:123-126.
- Ali S.A., Akhtar T., **Mahmood K.**, Safi W.A., 2013. SPATIAL DISTRIBUTION OF ANCYLOSTOMIASIS IN SOIL OF SLUMS OF NORTHREN LAHORE. IOSR Journal of Agriculture and Veterinary Science, 4 (1), 20-25.
- Tariq S., Batool A., Rana A.D., **Mahmood K.,** Batool M., Murtaza I., Hashim A., 2013. Variability of Size Distribution, Refrective Index and Asymmetry Parameter of Aerosols over Lahore Derived from Aeronet. Science International, 25:137-139.

RESEARCH INTERESTS:

Remote Sensing and Geo-information systems for environmental hazard assessment and spatial patterns identification of environmental variables, groundwater assessment and procurement, MSW dumping hazards assessment, atmospheric pollution, rainwater harvesting, vegetation health, urban heat island effect, feasible site selection of public facilities, forestry, climate change and its effects, environmental indices etc.