



Ahmad Hussain
Senior Consultant
Peshawar, Pakistan
Tel.: 0333-9116226
ahussain@earthconsultants.com

Mr. Ahmad Hussain completed his B.Sc. (with Honors) degree in 1966 from Peshawar University and his M.Sc. (in Petroleum and Structural Geology) in 1968 from the University of the Punjab. He joined the Geological Survey of Pakistan in 1967 as Assistant Director and retired as Deputy Director General in January 2005. Mr. Ahmad Hussain has vast experience in the field of stratigraphy, structure and economic geology. He has over 100 national and international research publications to his credit and has presented 30 research papers in national and international seminars, symposia and conferences. He has carried out a tectonic study of the northern part of Pakistan in collaboration with the United States National Science Foundation. He has revised and modified the geology of the Peshawar basin and the Attock-Cherat Range on the basis of stratigraphic, structural and paleontological data. He has geologically mapped about 15,000 square kilometers of the North-West Frontier Province (NWFP) and Kashmir, which resulted in the discovery of huge deposits of marble, silica sand, bauxite, salt, cement raw material, lightweight aggregate and iron ore deposits. Almost all the cement plants located in the NWFP and in northern Punjab have been established at his proposed sites. Mr. Hussain had recognized and mapped the Balakot-Bagh fault, the source fault of the 8 October 2005 earthquake prior to the earthquake; this mapping was published in 2004. In recognition of his meritorious work and achievements, Mr. Hussain was awarded 2nd Prize in Scientific Research by the Ministry of Education in 1987, a Gold Medal Award by the Punjab Geological Society in 1998, and the Star Award by South Asia Publication in 2002. Mr. Hussain is a life member of SEGMITE and a member of the Editorial & Review Board of SEGMITE International: A Journal of Resource, Industrial and Environmental Geology. Presently Mr. Hussain is rendering consultancy services as a Geological and Cement Raw Material Consultant in Pakistan. He is also a Senior Consultant with Earth Consultants International for seismic hazard projects in Pakistan.

SELECTED PUBLICATIONS

International

- Yeats, R.S., and **Hussain, A.**, 2006, Surface features of the Mw 7.6, 8 October 2005 Kashmir earthquake, northern Himalaya, Pakistan: Implications for the Himalayan front: *Seismological Research Letters*, Vol. 77, p. 207.
- Parsons, T., Yeats, R.S., Yagi, Y., and **Hussain, A.**, 2006, Coulomb stress transfer due to the October 2005 Kashmir earthquake: *Geophysics Research Letters*.
- DiPietro, J.A., **Hussain, A.**, Ahmad, I. and Khan M.A., 2000, The Main Mantle Thrust in Pakistan: its character and extent: *Geological Society of London Special Publication*, No. 170, pp. 375-393.
- DiPietro, J.A., Pogue, K.R., Baig, M.S., **Hussain, A.**, and Ahmad, I., 1999, Geologic map of part of the Indus syntaxis, Swat, Pakistan; in Macfarlane, A., Sorkhabi, R.B., and Quade, J., (editors), *Himalaya and Tibet: Mountain Roots to Mountain Tops*: *Geological Society of America Special Paper 328*, pp. 159-178.

- Pogue, K.R., Hylland, M.D., Yeats, R.S., Khattak, W.U., and **Hussain, A.**, 1999, Stratigraphic and structural framework of Himalayan foothills, northern Pakistan; in Macfarlane, A., Sorkhabi, R.B., and Quade, J., (editors), Himalaya and Tibet: Mountain Roots to Mountain Tops: Geological Society of America Special Paper 328, pp. 257-274.
- Hussain, A.**, DiPietro, J.A., and Pogue, K.R., 1998, Stratigraphy and structure of the Peshawar Basin, Pakistan: Journal of the Nepal Geological Society, Vol. 18, pp. 22-35.
- McDougall, J.W; **Hussain, A.** and Yeats, R.S., 1993, The Main Boundary Thrust and Propagation of deformation into the foreland fold-and-thrust belt in northern Pakistan near Indus River, Himalayan Tectonics: Geological Society Special Publication, No. 74, pp. 581-588.
- DiPietro, J.A., Pogue, K.R., Lawrence, R.D., Baig, M.S., **Hussain, A.**, and Ahmad, I., 1993, Stratigraphy south of the main mantle thrust, Lower Swat, Pakistan; in Treloar, P.J., and Searle, M.P., (editors), Himalayan Tectonics: Geological Society of London Special Publication No. 74, pp. 207-220.
- Pogue, K.R., Wardlaw, B.R., Harris, A.G., and **Hussain, A.**, 1992, Paleozoic and Mesozoic stratigraphy of the Peshawar basin, Pakistan: correlations and implications: Geological Society of America Bulletin, Vol. 104, pp. 915-927.
- McDougall, J.W. and **Hussain, A.**, 1991, Fold and Thrust Propagation in the Western Himalaya, based on the balanced cross section of the Surghar Range and Kohat Plateau, Pakistan: The American Association of Petroleum Geologists Bulletin, Vol. 5, No. 3, pp. 463-478.
- Yeats, R.S., and **Hussain, A.**, 1989, Zone of late quaternary deformation in the southern Peshawar Basin, Pakistan: Geological Society of America Bulletin Special Paper 323, pp. 265-274.
- Yeats, R.S., and **Hussain, A.**, 1987, Timing of structural events in the Himalayan foothills of northwestern Pakistan: Geological Society of America Bulletin, Vol. 99, pp. 161-176.
- Calkin, J.A., Jamiluddin, S., Bhuyan, K., and **Hussain, A.**, 1981, Geology and Mineral Resources of Chitral- Partsan area, Hindu Kush Range, Northern Pakistan: U.S. Geological Survey Professional Paper 718-G.

International Abstracts

- Hussain, A.** and Yeats, R.S., 2006, The Balakot-Bagh Fault that Triggered the October 8, Earthquake and Other Active Faults in the Himalayan Foreland Region: Abstracts Volume, International Conference on Earthquake in Pakistan, January 18-19, 2006, Islamabad, Geological Survey of Pakistan.
- Yeats, R.S., Parsons, Y., **Hussain, A.**, and Yagi, R., 2006 Stress Changes with the 8 October, 2005, Kashmir Earthquake: Lesson for Future: Abstracts Volume, International Conference on Earthquake in Pakistan, January 18-19, 2006, Islamabad, Geological Survey of Pakistan.
- Pogue, K.R., Quade, J., **Hussain, A.** Hinz, N., and Wright, H., 1999, Isotopic constraints on the age of metasedimentary rocks of the Peshawar Basin, Pakistan; in Sobel, E., Appel, E., Strecker, M., Ratschbacher, L., and Blisniuk, P., (editors), Abstracts Volume, 14th Himalaya-Karakorum-Tibet Workshop: Terra Nostra, Vol. 99, No. 2, pp. 117-118.
- DiPietro, J.A., **Hussain, A.**, and Ahmad, I., 1999, The Character of the Main Mantle thrust in Pakistan: Abstract, Himalaya-Karakorum-Tibet workshop in Kloster-Ettal, Germany.
- Hussain, A.**, DiPietro, J.A., and Pogue, K.R., 1998, Stratigraphic and Structural Framework of the Himalayan Foothills between Panjal-Khairabad Thrust and MMT, Peshawar

- Basin, Northwest Pakistan: Abstracts Volume of the 13th Himalayan-Karakaoram-Tibet International Workshop, in Peshawar, Pakistan, p. 82.
- Hussain, A.**, Pogue, K.R., and DiPietro, J.A., 1988, Paleozoic Stratigraphy of the Peshawar Basin, Pakistan: Geological Society of America Annual Meeting, Abstracts Volume 20, pp. 266-267.
- DiPietro, J.A., Ahmad, I., and **Hussain, A.**, 1997, Precambrian rocks of the Black-Mountains, NW Himalaya, Pakistan: Abstract, Himalaya meeting in the U.S.A.
- DiPietro, J.A., Pogue, K.R., **Hussain, A.**, and Ahmad, I., 1996, Precambrian rock of the Black Mountains, NW Himalaya, Pakistan; in MacFarlane, A.M., Sorkhabi, R.B., and Quade, J., (editors), 11th Himalayan-Karakorum-Tibet Workshop - Abstracts Volume, Flagstaff, Arizona, pp. 44-45.
- DiPietro, J.A., Pogue, K.R., Baig, M.S., **Hussain, A.**, and Ahmad, I., 1995, Preliminary geological map of the Indus syntaxis, Pakistan, 1995: 10th Himalayan-Karakoram-Tibet workshop, Zurich, Abstracts Volume, p. 298.
- Yeats, R.S. and **Hussain, A.**, 1993, Geology of the Himalayan Foothills from the perspective of the Attock-Cherat Range: Abstract in Himalayan Meeting in Paris, France.
- DiPietro, J.A., Ahmad, I., and **Hussain, A.**, 1997, Field evidence on the emplacement of the Dargai mafic/ultramafic complex, Malakand area, Pakistan: Abstracts, 12 Himalaya-Karakoram Workshop, Rome, Italy, pp. 125-26.
- Lawrence, D.R., **Hussain A.**, and others, 1989, Tectonics South of the Suture, Northern Pakistan: 28th International Geological Congress, Washington, USA, Abstracts, Volume 2, p. 265.

National Publications, Principal Author

- Hussain, A.**, 2005, Geology and Tectonics of the Himalayan Foothills of Northern Pakistan: Segmite and GSP 2nd Razi Siddiqi Memorial Lecture.
- Hussain, A.**, Akhtar, S. S., 2004, Geological Map of Mirpur District, Azad Jammu and Kashmir: Geol. Survey of Pakistan, Azad Kashmir District Geological Map Series, Geological Map No. 6.
- Hussain, A.**, DiPietro, J.A., Pogue, K.R., and Ahmad, I.; 2004, Geological Map of the 43B Degree Sheet, NWFP, Pakistan: Geological Survey of Pakistan, Degree Sheet Map Series, Geological Map No. 11.
- Hussain, A.**, Khan, R.N., Saeed, G., and Haq, I., 2002, Geological Map of the Nowshera District, NWFP, Pakistan: District Geological Map Series, NWFP, Map No. 15.
- Hussain, A.**, 2002, Active Deformation and Landsliding Related to Main Boundary Thrust In Peshawar – Islamabad Region, Pakistan: Abstract, Workshop on Natural Hazards, Baragali, Pakistan.
- Hussain, A.**, Pogue, K.R., DiPietro, J.A., 2001, Stratigraphy of the Precambrian rocks of the Northwest Himalaya, Pakistan: Abstract, 4th Geological Congress, Islamabad, Pakistan, p. 28.
- Hussain, A.**, 2000, Cement Raw Materials in the Northwest Frontier Province, Pakistan: Proceeding of National Symposium on Economic Geology of Pakistan, Islamabad, Pakistan, pp. 161-171.
- Hussain, A.**, Arbab, M.S.H., Sadin, M., Aslam, M., Khan, R.N., and Waliullah, 2000, Geological road log along Islamabad-Peshawar-Khyber Pass: Geological Survey of Pakistan, Highways Geological Map Series, Map No.3

- Hussain, A.** and Yeats, R.S., 2000, Geology and Tectonics of the Himalayan foothills of Northern Pakistan: Abstract, 3rd South Asia Geological Congress, Lahore, Pakistan, p. 3.
- Hussain, A.,** DiPietro, J.A., and Pogue, K.R., 1997, Stratigraphy and structures of Peshawar Basin, Pakistan: Second Nepal Geological Congress, Abstracts Volume, p. 8.
- Hussain, A.,** and Yeats, R.S., 1997, Geology of Himalayan Foothills from the perspective of Attock-Cherat Range; Correlation and implication: Abstract, Geological Congress, Peshawar, p. 18.
- Hussain, A.,** DiPietro, J.A., and Haq, I., 1995, Regional Geological Map of the Choga Quadrangle, Toposheet No. 43 B/10, NWFP, Pakistan: Geological Survey of Pakistan, Vol. III, p. 72.
- Hussain, A.,** 1995 Regional Geological Map of the Cherat Quadrangle, Toposheet No. 38 0/13, NWFP, Pakistan: Geological Survey of Pakistan, Vol. III, p. 107.
- Hussain, A.,** Haq, I., and Toori, A.A., 1995, Regional Geological Map of the Mazari Tang Quadrangle, Toposheet No. 3 8 0/14, NWFP: Geological Survey of Pakistan, Vol.111, p. 118.
- Hussain, A.,** 1995, Cement Raw Materials in the NorthWest Frontier Province, Pakistan: International Symposium and Field Workshop on Phosphorite and other Industrial Minerals, in Segmite International Geologists Project, Abstracts Volume, p. 19.
- Hussain, A.,** DiPietro, J.A., and Pogue, K.R., 1995, Stratigraphy and Tectonics South of Main Mantle Thrust, Peshawar Basin: International Symposium and Himalayan Suture zone of Pakistan, Islamabad, Abstracts Volume, p. 18.
- Hussain, A.,** Arbab, M.S.H., and Siddiqui, F.A., 1994, Prospects and Potential of the Light-Weight Aggregate in Pakistan: 2nd Segmite International Conference on Export-Oriented Development of Mineral Resources and Mineral Based Industries, Abstracts Volume, p. 10.
- Hussain, A.,** Bajwa, M., and Khan, K.S.A., 1994, Cement Raw Materials: Pakistan Mineral Prospect, Ministry of Petroleum and Natural Resources, Mineral Wing, Government of Pakistan.
- Hussain, A.,** and Karim, T., 1993, Mineral Map of NWFP, Pakistan: Geological Survey of Pakistan, Map Series.
- Hussain, A.,** Arbab, M.S.H., and Pogue, K.R., 1993, Stratigraphic and Structural Evolution of the Peshawar Basin, Pakistan: UNESCO Regional Postgraduate Training Course in Plate Tectonics, Lahore, Abstracts Volume, p. 32
- Hussain, A.,** 1992, Working Paper on the Stratigraphic Nomenclature of Attock-Cherat Range: Meeting of the Stratigraphic Committee of Pakistan.
- Hussain, A.,** Pogue, K.R., and Arbab, M.S.H., 1992, Stratigraphy of the Himalayan foothills of Northwestern Pakistan: South Asia Geological Congress, Islamabad, Pakistan, Abstracts Volume, p. 16.
- Hussain, A.,** Pogue, K., Khan, S.R., and Ahmad, I., 1991, Paleozoic stratigraphy of the Peshawar basin, Pakistan: Geological Bulletin, University of Peshawar, v. 24, p. 85-97.
- Hussain, A & Yeats R.S;** 1991, Geology and Tectonics of the Attock-Cherat Range and southern Peshawar Basin, Pakistan, UNESCO, First Postgraduate Training Course in Plate Tectonics, Lahore, Pakistan, Abstracts Volume, p.4.
- Hussain, A;** 1991, Cement Grade Raw Materials in the Attock-Cherat Range and the Adjoining Areas, NWFP, Pakistan, 199 1, Seminar on Self Reliance Through Minerals, Islamabad Organized by National Geological Society of Pakistan, Abstracts Volume, p. 1.

- Hussain, A.**, Khan, S.R., and Saeed, G., 1990, A New look at the coal occurrences in Cherat area, NWFP Pakistan: Proceedings of Segmite Conference on Industrial Minerals.
- Hussain, A.**, Yeats, R.S., and Pogue, K.R., 1990, Geologic map of the Attock-Cherat Range and adjoining areas, N.W.F.P. and Punjab, Pakistan: Geological Survey of Pakistan N.W.F.P. Map Series, scale 1:100,000.
- Hussain A.**, Yeats, R. S. and Pogue, K. 1989, Stratigraphy and structural events around the southern margin of Peshawar basin Pakistan Geol. Bull. Univ.Pesh 22, 45-54
- Hussain, A.**, Qaiser, M.A., and Siddiqui, F.A., 1989, Studies on Cherat Volcanic Ash, NWFP, Pakistan: Pakistan Journal of Sci. Ind. Res., Vol. 32, No. 10, pp. 663-667.
- Hussain A.**, and Lawrence, D.R., 1987, Landslide near Nicholson Monument, Margala Range, Islamabad, Pakistan: Geol. Survey of Pakistan, Information Release No. 282.
- Hussain, A.**, DiPietro, J.A., and Pogue, K.R., 1987, Stratigraphic and Structural Events around the southern Margin of Peshawar Basin: International Seminar on Tectonic Evolution of Collision Zones, between Godonwanic and Eurasian Block, Organized by NCE Peshawar in Collaboration with International Lithosphere Program, Abstracts Volume, p. 14.
- Hussain A.**, 1985, Raw material in Cherat Cement Project area, in District Peshawar, Pakistan: Cherat Cement Company Brochure, pp. 3-4.
- Hussain, A.**, 1984, Regional geological map of Nizampur covering parts of Peshawar, Mardan, and Attock districts, Pakistan: Geological Survey of Pakistan Geologic Map Series 14, scale 1:50,000.
- Hussain A.**, Siddiqui, M.A., and Chughtai, M.A., 1983, Lightweight Aggregate, a study of Raw Material in Pakistan, Islamabad-Peshawar Region: Recs. Geological Survey of Pakistan, Vol. 66.
- Hussain, A.**, 1977, An interim report of high-grade limestone deposits around Attock-Nizampur area, NWFP, Pakistan: Info. Rel. Geological Survey of Pakistan, No. 100.
- Hussain, A.**, 1976, Silica Sand Deposits of Khisore and Marwat Range, D. I. Khan, N.W.F.P., Pakistan: Geological Survey of Pakistan, Inf. Rel., No. 91
- Hussain, A.**, 1976, Silica Sand Deposits of Munda Kuchha area, Tehsil Mansehra, District Hazara, NWFP, Pakistan: Inf. Rel. Geological Survey of Pakistan, No.95.
- Hussain, A.**, 1974, Antimony, Lead and Zinc Occurrence of Chitral District, N.W.F.P., Pakistan: Geological Survey of Pakistan, Inf. Rel. No. 75.
- Hussain, A.**, 1974, Copper Occurrence of Dir and Chitral Districts, N. W. F. P., Pakistan: Geological Survey of Pakistan, Inf. Rel., No. 73.

National Publications, Co-Author

- Akhtar, S.S., Ahmad, M., Bhatti, M.A., **Hussain, A.**, and Ahmad, Z., 2000, Geological Map of the Dadiyal Area, Mirpur District, AJK and parts of the Rawalpindi District, Punjab, Pakistan: Geological Survey of Pakistan, Geological Maps Series Vol. V1, No. 25.
- Akhtar, S.S., Ahmad, M., and **Hussain, A.**, 2000, Geological Map of the Gulpur area, Kottl and Mirpur districts, AJK: Geological Survey of Pakistan, Geological Maps Series Vol. V1, No. 26.
- Akhtar, M., Bajwa, S.M., and **Hussain, A.**, 2000, Geological map of the Mangla area, Mirpur District, AJK and parts of the Jhelum and Rawalpindi Districts, Punjab, Pakistan: Geological Survey of Pakistan, Geological Maps Series Vol. V1, No. 28.

- Arif, M., Hussain, S.H., Khan, R., and **Hussain, A.**, 2000, Geological Map of the Mirpur Area, Mirpur and Bhimber Districts, AJK and parts of the Gujrat and Jhelum Districts, Punjab, Pakistan: Geological Survey of Pakistan, Geological Maps Series Vol. V1, No. 29.
- Hussain, S.H., Khan, R., Shah, S.H., **Hussain, A.**, and Ahmad, K.S., 2000, Geological map of the Samani Area, Shimer District, AJK: Geological Survey of Pakistan, Geological Map Series Vol. V1, No. 30.
- Waliullah, Arshad, J., Jafri, S.A., **Hussain, A.**, and Parvez, S., 2000, Geological Map of the Bhimber area, Bhimber District, AJK and parts of the Gujrat District, Punjab, Pakistan: Geological Survey of Pakistan, Geological Map Series Vol. V1, No. 32.
- Iqbal, S., Nasir, S., and **Hussain, A.**, 1999, Regional Geological Map of the Nauseri Quadrangle, Azad Jammu and Kashmir, toposheet No. 43 F/ 11: Geological Survey of Pakistan, Vol. VI, No. 14.
- Mughal, N., and **Hussain, A.**, 1999, Regional Geological Map of the Reshian Quadrangle, District Muzaffarabad, Azad Jammu and Kashmir; Toposheet No. 43 F/1: Geological Survey of Pakistan, Vol. VI, No.15.
- Anwar, M., Bhutt, I., and **Hussain, A.**, 1999, Regional Geological Map of the Chakoti Quadrangle, District Muzaffarabad and Punch, Azad Jammu and Kashmir: Geological Survey of Pakistan, Vol. VI, No. 17.
- Hussain, V., Bilqees, R., and **Hussain, A.**, 1995, Industrial Mineral Resources of Pakistan, 1995, Segmite Souvenir on International Symposium on Phosphate and Industrial Minerals, at Abbottabad, 21-25 May.
- Rahim, S., Pogue, K.R., **Hussain, A.**, Saeed, G., and Feroz, B., 1995, Regional Geological Map of the Topi Quadrangle, Toposheet No. 43 B/12. NWFP: Pakistan Vol. IV, p. No.2.
- Qaiser, M.A., Siddiqui, F.A., Ahmad, N., Mumtaz, and **Hussain, A.**; 1991, Mineralogy and Chemistry of Eocene Shale from Margala Range, Near Islamabad, Pakistan: Pak. J. Sci. Ind. Res. Vol. 34, Nos. 7-8, p. 272-281.
- Qaiser, M.A., Siddiqui, F.A., Ahmad, N., Mumtaz, and **Hussain, A.**, 1988 Mineralogy and Chemistry of Bloating Slate in Attock-Cherat Range, Northern Pakistan: Pakistan Journal of Sci. Ind. Res. Vol. 31.
- Pogue, K.R., and **Hussain, A.**, 1986, New light on the stratigraphy of the Nowshera area and the discovery of Early to Middle Ordovician trace fossils in N.W.F.P., Pakistan: Geological Survey of Pakistan Information Release, No. 135, 15p.
- Siddiqui, M.A., Alauddin, M., Khan, M., Nasreen, S., and **Hussain, A.**, 1986, Studies on Quartzite Deposits of Nowshera and Swabi area, Peshawar Division, Pakistan: Pakistan J. Sci. Ind. Res., Vol. 29, No. 5, pp. 327-33 1.
- Asrarullah and **Hussain, A.**, 1985, Marble Deposits of North West Frontier Province, Pakistan: Geological Survey of Pakistan Information Release, No. 128.
- Ahmad, Z., Alam, S.G., Khan R.B., **Hussain, A.**, Khattak, A.K., Saleemi, B.A., Khan, R., Ahmad, S., and Qureshi, S.A., 1975, Investigation of Placer Mineral Deposits in the Indus, Gilgit, Hunza and Chitral Rivers: Geological Survey of Pakistan Rec., Vol. 45.
- Alam, G.S., **Hussain, A.**, and Asrarullah, 1975, The mapping of Warcha and Kalabagh Salt Mines and Potash Investigations, Punjab, Pakistan: Rec. Geological Survey of Pakistan, Vol. 40.
- Khan, Y.M., and **Hussain, A.**, 1974, A note on the occurrence of Iron Ore, near Mazari Tang, Peshawar, District, NWFP, Pakistan: Geological Survey of Pakistan Information Release No. 72.

Khan, S.N., and **Hussain, A.**, 1970, Mineralogy and Physical Properties of Bauxite - High Alumina Clay Deposits of Katha-Pail area, Tehsil Khushab District, Sargodha, Punjab: Geological Survey of Pakistan Information Release No. 37.