

Dr. Mohammad Ayaz Alam

Ph.D., IIT Bombay (India)

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Research Associate

Department of Earth Sciences

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CURRICULUM VITÆ

AVAILABILITY: IMMEDIATE

OBJECTIVE

Aspiring for a position in an organization where I can utilize my theoretical and practical knowledge, skills and ability to handle and interpret geological and geochemical data efficiently and experience in geological and geochemical exploration projects to add value to the organization and enhance my knowledge and improve my skills. Ability to work as part of team, sincerity, motivation, promptness, assertiveness, proficiency in computing and good communication and analytical skills that I possess may well meet the requirements and expectations of the prospective organization.

QUALIFICATION

Doctor of Philosophy (Ph.D.) Indian Institute of Technology Bombay, India 2008

Thesis Title:

Geological, Geochemical and Geothermal Studies on the Barren Island Volcano, Andaman Sea, Indian Ocean

Master of Science (Applied Geology) Indian Institute of Technology Bombay, India 2002

Dissertation Title:

Hydrogeochemistry of Thermal Springs of Manikaran, Kullu District, Himachal Pradesh, India

POST DOCTORAL EXPERIENCE

Research Associate (since January 4, 2008)

Project Name : *Geology and Geochemistry of Narcondam Island Volcano.*

Principal Investigator : Prof. D. Chandrasekharam, Department of Earth Sciences, IIT Bombay.

Sponsor : Department of Science and Technology, Government of India

Nature of Job : Temporary

Job Description : Field and Laboratory work related to the project. Field work completed. Laboratory work comprises of petrography, geochemical analyses of the rock samples currently in progress, to be followed by interpretation of data.

SPECIALIZATION

Geochemistry, Isotope Geochemistry, Aquatic Geochemistry, Igneous Petrology, Geothermal Energy

ACADEMIC ACHIEVEMENT

All India Rank 10 in Graduate Aptitude Test in Engineering (GATE) 2002 (Geology & Geophysics)

CAREER HIGHLIGHTS

- Part of the Indo-Italian team of scientists working on Barren Island, the only active volcano in India.
- Worked with leading scientists in the fields of Geochemistry and Geothermics (Geothermal Energy).
- Associated with geothermal exploration programmes in northwestern Himalayas.
- Presented a paper at 32nd International Geological Congress at Florence, Italy.
- More than 10 peer reviewed international publications.
- Participated in the organization of Techfest 2006 – scientific and technological event of IIT Bombay.

COURSES ATTENDED

Master of Science (Applied Geology) Cumulative Percentile Index (CPI): 7.44/10

Solid Earth & Exploration Geophysics, Geochemical Thermodynamics, Structural Geology, Mineral Fuel Resources, Palaeontology, Stratigraphy & Indian Geology, Geomorphology, Remote Sensing & GIS, Geochemistry, Hydrogeochemistry, Mineralogy, Crystal Optics & X-ray Crystallography, Igneous Petrology, Sedimentary Petrology, Metamorphic Petrology, Economic Geology, Geological & Geochemical Prospecting, Mining Geology, Engineering & Groundwater Geology, Statistical Methods in Geology, General Geodesy, Mineral Process Engineering and Mathematics

Ph. D. Course Work Cumulative Percentile Index (CPI): 8.59/10

Isotope Geology, Geothermics, Mineral Equilibria and Aquatic Chemistry, Remote Sensing & GIS and Applied Geomorphology

ANALYTICAL/TECHNICAL SKILLS

INSTRUMENTS

- X-ray Diffraction (XRD) System
- Scanning Electron Microscope (SEM) with Energy Dispersive Spectrometer (EDS)
- Ultra Violet (UV) and Visible Spectrophotometer
- Atomic Absorption Spectrometer (AAS)
- Induced Coupled Plasma (ICP) Spectrometer
- Laser Raman Microscope
- Optical Systems for Transmitted and Incident Light Microscopy

ANALYTICAL DATA HANDLING / INTERPRETATION

- Geochemical / Hydrogeochemical Data
- Electron Probe Microanalysis (EPMA) Data
- X-Ray Fluorescence (XRF) Data
- Induced Coupled Plasma (ICP) Spectrometry Data
- X-ray Diffraction (XRD) Data
- Scanning Electron Microscope (SEM) and Energy Dispersive Spectrometry (EDS) Data
- Isotopic Analyses Data
- Gas Chromatography Data
- Wet Chemical Data

EXPERIENCE

FIELD WORK

- Geological field work on the Narcondam Island regarding the DST (Govt. of India) project on its geological and geochemical studies during February-March, 2008.
- Second (short) field work on the Barren Island volcano to study the nature and extend of 2005-06 eruption, to update the findings of my research work on this volcano for Ph.D. during March 2008.
- Geothermal investigations of Puga and Chhumatang geothermal areas of Ladakh, Jammu and Kashmir, India during the third week of September, 2004 along with a team of Indo-Italian scientists (Dr. D. Chandrasekharam and Dr. Angelo Minissale), involving study of the geothermal manifestations and collection of thermal water and gas samples.
- Geological, geochemical and geothermal investigations of the Barren Island (Andaman Sea, Indian Ocean) volcanics between the first week of February, 2003 along with a team of Indo-Italian scientists (Dr. D. Chandrasekharam, Dr. Orlando Vaselli, Dr. Bruno Capaccioni and Dr. Piero Manetti). Documented by the Global Volcanological Network, Smithsonian Institution, USA.

- Geological and geochemical investigations of the geothermal manifestations along the Parbati and Beas rivers (Himachal Pradesh, India) with a team of Indo-Italian scientists (Dr. D. Chandrasekharam and Dr. Angelo Minissale) in the month of May 2002.
- Geological, geochemical and geothermal investigations of the thermal springs of Manikaran, Himachal Pradesh (India) in the month of December 2001 as a part of M.Sc. Dissertation work.
- Structural mapping and study of the other aspects of the metasedimentary formations of Delhi Supergroup, near Ambaji (Gujarat) and Abu Road (Rajasthan) as a part of M.Sc. (Applied Geology) programme.
- Geological Field Work, involving study of lithology, structures and other aspects of Delhi Supergroup of rocks, near Bayana, in Bharatpur District of Rajasthan (India) as a part of B.Sc. (Geology) programme.

INDUSTRIAL EXPERIENCE

- Vocational training at Khetri Copper Complex (KCC) of Hindustan Copper Limited (HCL), in Khetrinagar, Rajasthan (India), during May, 2001.

ORGANIZATIONAL EXPERIENCE

- Coordinator, Techfest 2006 – annual scientific and technological event of IIT Bombay.
- Organization of the “QIP Short Term Course on Geothermal Energy Resources” (Coordinator: Prof. D. Chandrasekharam) at IIT Bombay (September 27 - October 3, 2004).
- Literary Secretary of the Earth Sciences Association (ERSA), IIT Bombay (2000-01, 2001-02).

COMPUTER ADMINISTRATION

- Web and System Administration, as part of Teaching Assistantship at Department of Earth Sciences, IIT Bombay.
- Web Administrator, Research Scholars’ Forum (RSF), IIT Bombay.

PUBLICATIONS

JOURNALS/BOOKS/VOLUMES

INTERNATIONAL

- Chandrasekharam, D., Vaselli, O., Capaccioni, B., Manetti, P. and Alam, M. A. (2003) Barren Island – Fumarolic activity noted during fieldwork in February 2003, Bulletin of the Global Volcanism Network, Smithsonian Museum of Natural History, vol. 23, pp. 12-14.
- Chandrasekharam, D., Vaselli, O., Capaccioni, B., Manetti, P. and Alam, M. A. (2003) Rapport De Mission: Barren Island (Indes), Société Volcanologique Européenne (SVE) Newsletter, vol. 2, pp. 6-7.
- Chandrasekharam, D. and Alam, M. A. (2003) Direct utilization of geothermal energy resources – NW Himalayas, India, Geothermal Resources Council (GRC) Transactions, vol. 27, pp. 81-84.
- Alam, M. A., Chandrasekharam, D. and Minissale, A. (2004) Geothermal potential of thermal waters of Manikaran, Himachal Pradesh, India, Water-Rock Interaction, vol. 11, pp. 327-331.
- Alam, M. A. and Chandrasekharam, D. (2005) Seismicity in Andaman – Nicobar – Java – Sumatra region and its bearing on the volcanism in the region, with special reference to the Barren Island, Eos Transactions AGU, 86(52), Fall Meeting Supplement, Abstract V21D-0651.
- Alam, M. A., Chandrasekharam, D., Vaselli, O., Capaccioni, B. and Manetti, P. (2008) Volcanological and Petrological Evolution of Barren Island (Andaman Sea, Indian Ocean). Communicated to Bulletin of Volcanology.

NATIONAL

- Chandrasekharam, D., Vaselli, O., Capaccioni, B., Manetti, P. and Alam, M. A. (2003)
Cold springs of the Barren Island, Andaman Sea, Indian Ocean. *Current Science*, vol. 85, no. 2, pp. 136-137.
- Alam, M. A., Chandrasekharam, D., Vaselli, O., Capaccioni, B., Manetti, P. and Santo, P. B. (2004)
Petrology of the prehistoric flows and dyke of the Barren Island, Andaman Sea, Indian Ocean, *Proceedings of the Indian Academy of Sciences (Earth and Planetary Sciences)*, Special Issue: Magmatism in India through time, vol. 113, no. 4, 715-721. (Now *Journal of Earth System Science*)

CONFERENCE PROCEEDINGS

- Chandrasekharam, D., Alam, M. A. and Minissale, A. (2003)
Geothermal resource potential of Himachal Pradesh, India, In: *Proceedings, International Geothermal Conference, Reykjavik, Iceland, 14-17 September, 2003*, vol. 4, pp. 14-20.
- Chandrasekharam, D. and Alam, M. A. (2004)
Geothermal potential of Ladakh region, NW Himalayas, India. In: *Proceedings of the International Conference on Sustainable Habitat for Cold Climates, September 16-18, 2004, Leh, Ladakh (Jammu and Kashmir), India*, 109-114.
- Chandrasekharam, D. , Alam, M. A. and Minissale, A. (2005)
Thermal discharges at Manikaran, Himachal Pradesh, India, In: *Proceedings of the World Geothermal Congress 2005, April 24-29, 2005, Antalya, Turkey, CD-ROM, Paper Number: 0881.*
- Chandrasekharam, D. and Alam, M. A. (2006)
Volcanism and seismicity along Java – Sumatra - Barren Island arc in relation to neo-tectonic and volcanic activity in the Indian Ocean. *Volcano International Gathering, Yogyakarta - Central Java, Indonesia, 4 - 10 September 2006.*
- Chandrasekharam, D., Chandrasekhar, V. and Alam, M. A. (2006)
Geothermal Energy Resources of India: Ongoing and Future Developments, 2006 AAPG International Conference and Exhibition, November 5-8, 2006.

CONFERENCE ABSTRACTS

INTERNATIONAL

- Alam, M. A., Chandrasekharam, D. and Minissale, A. (2004)
Manikaran Geothermal System, Himachal Pradesh, India: An appraisal, 32nd International Geological Congress (32nd IGC), August 20-28, 2004, Florence, Italy, pp. 1231.
- Chandrasekharam, D., Vaselli, O., Alam, M. A., Capaccioni, B., Manetti, P. and Santo, A. P. (2004)
Chemical homogeneity in the source below the Barren Island volcano and Sunda arc, 32nd International Geological Congress (32nd IGC), August 20-28, 2004, Florence, Italy, pp. 405.
- Capaccioni, B., Chandrasekharam, D., Vaselli, O., Manetti, P., Alam, M. A., F. Tassi and Santo, A. P. (2004)
Barren Island (Andaman Sea, India): Volcanological features of the only Indian active volcano, 32nd International Geological Congress (32nd IGC), August 20-28, 2004, Florence, Italy, pp. 190.
- Alam, M. A., Chandrasekharam, D., Vaselli, O., Capaccioni, B. and Manetti, P. (2007)
Magmatic evolution of Barren Island Volcano (Andaman Sea, Indian Ocean), *International Conference on Evolution, Transport and Release of Magmas and Volcanic Gases (MAG 2007)* , April 22-27, 2007, Taipei, Taiwan, pp. 1.

NATIONAL

- Alam, M. A. and Chandrasekharam, D. (2004)
High salinity of the thermal waters and associated geodynamic activities of the Manikaran Geothermal System, Himachal Pradesh, India. In: *Abstract Volume of the National Seminar on Role of Fluids in the Crustal Evolution: Special Emphasis on the Himalayan Magmatism, Tectonism and Metallogeny, February 4-6, 2004, Wadia Institute of Himalayan Geology, Dehra Dun, India*, pp. 67-68.

CONFERENCES

INTERNATIONAL

- International Conference on Evolution, Transport and Release of Magmas and Volcanic Gases (MAG 2007), April 22-27, 2007 at Taipei, Taiwan.
 - World Geothermal Congress 2005, April 24-29, 2005, Antalya, Turkey. *
 - International Conference on Sustainable Habitat for Cold Climates, September 16-18, 2004, Leh, Ladakh (Jammu and Kashmir), India.
 - 32nd International Geological Congress (32nd IGC), August 20-28, 2004, Florence, Italy.
 - 11th International Conference on Water-Rock Interaction (WRI-11), 27 June -2 July, 2004, Saratoga Springs, New York, USA. *
 - International Geothermal Conference, September 14-17, 2003, Reykjavik, Iceland. *
- * Invited but not attended.

NATIONAL

- National Seminar on Role of Fluids in the Crustal Evolution: Special Emphasis on the Himalayan Magmatism, Tectonism and Metallogeny, February 4-6, 2004, Wadia Institute of Himalayan Geology, Dehra Dun, India.

COMPUTING SKILLS

SYSTEM ADMINISTRATION

- Windows, Linux, Sun Solaris

WEB DESIGNING AND ADMINISTRATION

- HTML, DHTML, CSS, PHP, Flash, CGI, PERL, JAVA, APACHE

PLATFORMS

- Windows, Linux, Sun Solaris, Macintosh

PROGRAMMING

- C++, MATLAB

SOFTWARE PACKAGES

- Specialized: MELTS, StereoNett, Aquachem, WATEQ4F
- General: MS Office, Corel Draw, Adobe Illustrator, Adobe Photoshop, AutoCAD, Origin

Attended COURSE ON ADVANCED PROGRAMMING conducted by CEP, IIT Bombay.

EXTRA-CURRICULAR ACTIVITIES

- Participated in the organization of COSMOS – a space exploration technologies event – showcasing Mars Rover Exhibition by Arizona State University, Arizona, USA, in association with National Aeronautical Agency (NASA), USA
- Organization of “QIP Short Term Course on Geothermal Energy Resources” (October 2004) for Lecturers from engineering colleges
- Literary Secretary of the Earth Sciences Association (ERSA), IIT Bombay. (2000-02)
- Participated in Mood Indigo (annual cultural event of IIT Bombay participated by students of colleges from across the country) and stood 2nd Indian Mela Quiz, based on Indian Culture. (2006)

AWARDS

- Teaching Assistantship from IIT Bombay for pursuing Ph.D.
- 2nd Prize in Mood Indigo (annual cultural event of IIT Bombay) 2006 Indian Mela Quiz.
- Won Earth Sciences Association (ERSA), IIT Bombay Quiz Competition (2005-06)
- Certificate of Special Mention for service as Web Administrator of Research Scholars' Forum, IIT Bombay (2004-05)

MEMBERSHIP

- Student Member, American Geophysical Union (AGU)

PERSONAL DETAILS

Title : Dr.
Family Name (Surname) : Alam
Given Names : Mohammad Ayaz
Preferred Name : Ayaz
Correspondence Address : Department of Earth Sciences,
IIT Bombay, Powai, Mumbai 400076 (India)
Qualification : Ph.D.
Gender : Male
Nationality : Indian
Passport Details : No. E2029034
Issued on 03.05.2002 Expires on 02.05.2012
Countries visited : 1. Italy, to attend 32nd International Geological Congress at Florence (2004)
2. Taiwan (Republic of China), to participate in International Conference on
Evolution, Transport and Release of Magmas and Volcanic Gases (MAG
2007), at Taipei (2007)
Languages : English, Hindi, Marathi and Urdu
Hobbies : Reading, Writing, Trekking, Travelling, Photography, Web Designing

REFERENCES

Name : Prof. D. Chandrasekharam
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DECLARATION

I hereby declare that the above information is correct to the best of my knowledge.

Date: 01.05.2008
Place: Mumbai (India)

(Dr. Mohammad Ayaz Alam)