




University Faculty Details Page on DU Web-site

Title	Dr.	First Name	Ashima	Last Name	Saikia	Photograph
Designation	Assistant professor					
Department	Department of Geology					
Address (Campus)	Department of Geology, University of Delhi , Delhi -7					
(Residence)	Mukherjee Nagar, Delhi-110009					
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Education						
Subject	Institution		Year	Details		
Ph.D. in Geology	Bayerisches Geoinstitute for Experimental geochemistry and geophysics, Bavaria, Germany		2008	Experimental Constraints on Silicate Perovskite Forming Reactions and Elastic roperties: Geophysical Implications for Chemical Heterogeneity in the Deep Mantle		
M.Sc. in Geology	Department of Geology, University of Delhi.		2002	Subjects: Geology		
Career Profile						
Organisation / Institution		Designation	Duration	Role		
ETH, Swiss Federal Institute of Technology,Zurich, Switzerland		Postdoctoral fellow	2008-2009	Research Scientist		
Bayerisches Geoinstitute		Ph. D. scholar	2004-2008	Ph. D. Student		

for Experimental geochemistry and geophysics, Bayreuth, Germany University of Delhi	Junior Research Fellow of CSIR	2002-2003	Research assistant
Research Interests / Specialization			
<p>My research interests include:</p> <ol style="list-style-type: none"> 1. Geochemical and petrographic constrains on genesis of Ophiolites of Andaman and Nagaland: a comparative study to understand lithospheric evolution and mantle- melt interactions. 2. Geochemical and micro textural study of Bathani volcano sedimentary sequence of Rajgir: to understand magma chamber processes in a magma mixing mingling scenario. 3. Eclogite mineral chemistry of Tso Morari and eclogite xenoliths of Wajrakarur: for constraining differences between cratonic and non-cratonic eclogites 4. TTG chemistry study from three cratons of India and modelling its evolution. 			
Teaching Experience (Subjects/Courses Taught)			
<p>For the last 9 years I am teaching Crystallography and Mineralogy, Igneous petrology, Geochemistry and Metamorphic petrology to the Undergraduates and Advanced Mineralogy and Mineral Science course in the Masters Course and X-Ray analytical techniques in the Ph. D. course work.</p>			
Honors & Awards			
<ol style="list-style-type: none"> 1. Academic Guest, Geological Institute, Kola Science Center, Russian Academy of Science, Apatity. March, 2014. 2. Academic Guest, Geological Institute, Kola Science Center, Russian Academy of Science, Apatity. April, 2013 3. Academic guest ETH (Swiss federal Institute of Technology) Zurich May-June 2010. 			

- 4.** Postdoctoral fellowship of ETH (Swiss federal Institute of Technology), Zurich, Switzerland 2008.
- 5.** Outstanding student certificate (for Ph.D.) from Bavarian state government Germany, 2007.
- 6.** Best poster award at the 7th Mineral Physics Seminar, Matshushima Japan, 2007.
- 7.** Visiting scientist: Gakushuin University, Tokyo, Japan, November-January, 2006-2007
- 8.** Elite Netzwerk Bayern, Germany; International Graduate School doctoral fellowship, 2004-2007.
- 9.** Junior Research Fellowship by Center for Scientific and Industrial Research, Govt. of India, 2002-2004
- 10.** Best Student presentation in Earth Science section, Cognizance All India Students meet: Indian Institute of Technology, Roorkee, 2004.
- 11.** Best poster presentation award (Earth system science section) at 90th Indian Science Congress, 2003.
- 12.** Graduate Aptitude Test in Engineering (GATE) qualified conducted by Ministry of Human resource development, Government of India, All India rank 33, 2003.
- 13.** National Eligibility Test (NET) qualified for Lecturership conducted by Center for Scientific and Industrial Research, Government of India 2002
- 14.** Delhi University gold medal in Earth Science 2002

15. Hansraj College gold medal in Earth Science 2002.

Publications (LAST FIVE YEARS)

Books / Monographs

<u>Year of Publication</u>	<u>Title</u>	<u>Publisher</u>	<u>Co-Author</u>
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In Indexed/ Peer Reviewed Journals

<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>	<u>Co-Author</u>
(2008)	The calcium silicate perovskite forming reaction at the transition zone of the Earth's mantle: implications for splitted 520 km seismic discontinuity.	Science, vol 319, 1515-1518	Frost D. J., Rubie D. C.
(2009)	A compressibility study of (Al, Fe)-MgSiO ₃ perovskite single crystals: implications for lower mantle,	Physics of Earth and Planetary Interiors, vol. 173, 1-2, 153-161.	Frost D.J., Boffa Ballaran T., Rubie D.C.
(2013)	.Petrology of the Neoproterozoic granulites from Central Dronning Maud Land, East Antarctica implications for southward extension of East African Orogen (EAO)	Precambrian Research,227, 389-408	Naresh Chandra Pant.; A. Kundu, M. J D'Souza
(2013)	Insights into the prograde path of Tso Morari metamafites of north-western Himalayas: constraints on the geodynamic evolution of the region.	Journal of Earth Science,122, 677-698.	Preeti Singh, N C Pant, P K verma

(2013)	The role of amphiboles in the metamorphic evolution of the UHP rocks: a case study from the Tso Morari Complex, North-West Himalayas.	International Journal of Earth Sciences, Volume 102, Issue 8, pp.2137-2152, 2013.	Preeti Singh, Naresch C. Pant A. Kundu
(2014)	Geochemical constraints on the evolution of mafic and felsic rocks in the Bathani volcanic and volcano-sedimentary sequence of Chotanagpur Granite Gneiss Complex.	Journal of Earth System Science, 123(5):959-987 JULY 2014	Bibhuti Gogoi, Mansoor Ahmad and Talat Ahmad
(2015)	Elasticity of superhydrous Phase B, Seismic anomalies in cold slabs and implications for deep water Transport.	Physics of the Earth and Planetary Interiors, 243	Angelika Rosa, Carmen Sanchez Valle, Jingyun Wang,
(2017)	Geochemical and U–Pb zircon age characterization of granites of the Bathani Volcano Sedimentary sequence, Chotanagpur Granite Gneiss Complex, eastern India: vestiges of the Nuna supercontinent in Central Indian Tectonic Zone. In: Pant, N. C. & Dasgupta, S. (eds) Crustal Evolution of India and Antarctica: The Supercontinent Connection. . https://doi.org/10.1144/SP457.11	Geological Society, London, Special Publications, 457.	Bibhuti Gogoi, Tatiana Kaulina, Liudmila Lialina, Tamara Bayanova & Mansoor Ahmad
(2017)	Mineral chemistry, Sr–Nd isotope geochemistry and petrogenesis of the	“Geological Evolution of Precambrian	Bibhuti Gogoi, Mansoor Ahmad, Rajeev

	granites of Bathani Volcano Sedimentary sequence from the northern fringe of Chotanagpur Granite Gneiss Complex of eastern India	Indian Shield” SES Series by Springer	Kumar, Tatiana Kaulina, and Tamara Bayanova
(2017)	Field evidence, mineral chemical and geochemical constraints on maficfelsic magma interactions in a vertically zoned magma chamber from the Chotanagpur Granite Gneiss Complex of Eastern India, ,	Chemie der Erde https://doi.org/10.1016/j.chemer.2017.11.003	Bibhuti Gogoi Mansoor Ahmad
(2017)	Episodic crustal growth in the Bundelkhand craton of central India Shield: constraints from petrogenesis of the Tonalite-Trondhjemite- Granodiorite gneisses and K-rich granites of Bundelkhand Tectonic Zone.	Journal of earth system science 127:44	Hiredya Chauhan, and Talat Ahmad
(2017)	Evaluation of magma mixing in the sub volcanic rocks of Ghansura Felsic Dome of Chotanagpur Granite Gneiss Complex, eastern India	Mineralogy and Petrology	Bibhuti Gogoi Mansoor Ahmad Talat Ahmad
(2017)	Titanite-centered ocellar texture: A petrological tool to unravel the mechanism enhancing magma mixing	Periodico di Mineralogia	Bibhuti Gogoi Mansoor Ahmad

Articles in Book

1. Saikia A. (2007) Understanding the Earth's Interior: clues from seismological observations simulated by high-pressure high-temperature. Graduate Report Booklet Elitenetzwerk Bayern.
2. Saikia A., Frost D. J., Boffa Ballaran T., Rubie D. C.(2007) The effect of pressure on $\text{Fe}^{3+}_{\text{VIII}}\text{Al}^{3+}_{\text{VI}}\text{O}_3$ substitution in perovskite: Implications for Fe disproportionation in the lower mantle. BGI year book.
3. Saikia A, Frost D. J. , Rubie D.C. , Akaogi M., Kojitani H.(2007) A calorimetric study of the $\text{Mg}_3(\text{Mg, Si})\text{Si}_3\text{O}_{12}$ majorite- $\text{Mg}_3\text{Al}_2\text{Si}_3\text{O}_{12}$ pyrope garnet solid solution. BGI year book.
4. Asahara Y., Frost D. J. , Rubie , D.C., Saikia A., Terasaki H., Ohtani E., Funakoshi T., Mastuzaki, T. (2007) Preliminary sin situ determination of the solvus in the Fe-FeO system at 2-5 GPa upto 2800K. BGI year book.
5. Saikia A., Frost D. J., Rubie D. C. (2006) Calculations of sound velocity and seismic discontinuity structure at the base of the transition zone. BGI year book
6. Saikia A., Boffa Ballaran T., Frost D. J. , Rubie D. C.(2006) The equation of state of $(\text{Mg, Fe})(\text{Al, Si})\text{O}_3$ -perovskite as a function of bulk Fe content. BGI year book.
7. Saikia A., Frost D. J., Rubie D. C. (2005) The formation of calcium perovskite from majoritic garnet–Implications for splitting of the 520 km seismic discontinuity. BGI year book.

Conference Presentations

1. Ashima Saikia, Bibhuti Gogoi, Tatiana Kaulina, Tamara Bayanova, Mansoor Ahmad
“Geochemical and geochronological signatures of supercontinent Nuna from granites of Bathani Volcano sedimentary sequence of Chotanagpur Granite Gneiss Complex of Eastern, India” National Conference on “Precambrians of India” to be held from November 22 to 24, 2016 at the Department of Geology, Bundelkhand University, Jhansi (Uttar Pradesh).
2. Ashima Saikia, Bibhuti Gogoi and Mansoor Ahmad, (2015) GEOCHRONOLOGICAL EVIDENCE FROM GRANITES OF THE BATHANI VOLCANO SEDIMENTARY SEQUENCE OF CHOTANAGPUR GNEISSIC COMPLEX AND IMPLICATIONS FOR GROWTH OF THE GREATER INDIAN LANDMASS, XII International Symposium on Antarctic Earth Sciences, July 2015.
3. Ashima Saikia, Bibhuti Gogoi and Mansoor Ahmad, (2014) Geochemical constraints on the evolution of mafic and felsic rocks of Bathani volcanic and volcano-sedimentary sequence of Munger–Rajgir belt in Proterozoic Chotanagpur Granite Gneiss Complex, Eastern India International Seminar on “Magmatism, Tectonism and Mineralization” 27-29 March 2014
4. Ashima Saikia, Bibhuti Gogoi and Mansoor Ahmad, (2013) Sm-Nd isotope ages of granites associated with the Bathani volcano sedimentary sequence of Munger-Rajgir belt of Chotanagpur Granite Gneiss Complex, Eastern India” Annual General meeting Of Geological Society Of India, Dhanbad, 2013, October.
5. Ashima Saikia (2013) Host rock constraints on the gold mineralization in the Aravalli – Bundelkhand Proto continent, Northern Indian shield: Annual Fersman Conference 2013, Apatity, Russia April 7-9, Geological Institute KSC RAS
6. Ashima Saikia and Bibhuti Gogoi,(2011) A geodynamic model for understanding petrochemical signatures of Bathani Volcanics of Nalanda District, Bihar. AGM, Geological Survey Of India NIT BHU, September 2011
7. A. Saikia *et al*, (2011) Role of Dense Hydrous Magnesium phases in Subduction zone fluid generation and magmatism: an experimental approach. Discussion-based National workshop on “Critical Appraisal of Plume and Alternate Hypotheses into the Origin of

Melting Anomalies: Perspectives and Prospects of Research in India” Centre of Advanced Study in Geology, University of Lucknow, 15th and 16th of March 2011 (INVITED talk)

8. A calorimetric study of the $Mg_3(Mg,Si)Si_3O_{12}$ (majorite)- $Mg_3Al_2Si_3O_{12}$ (pyrope) garnet solid solution. AOGS Conference Hyderabad July 2010.
9. Fluid absent melting of Phase E: Implications for generation of subduction zone fluids. NATIONAL SYMPOSIUM ON GEOLOGY AND MINERAL RESOURCES OF BUNDELKHAND CRATON (GMRB-2010) 15th Annual Congress of the South Asian Association of Economic Geologists Jhansi University, October 2009
5. The Calcium perovskite forming reaction in the Earth’s mantle. University of Innsbruck, Austria, March 2009. (Invited talk)
6. Calcium perovskite exsolution from majorite garnet and splitting of the 520 km seismic discontinuity: insights into mantle heterogeneity. AGU Fall meeting, 10.12-14.12.2007, San Francisco, USA.
7. The effect of Fe on compressibility of (Al,Fe)- $MgSiO_3$ lower mantle perovskite. AGU Fall meeting, 10.12-14.12.2007, San Francisco, USA.
8. Understanding the Earth’s interior: clues from seismological observations simulated by high-pressure high-temperature experiments, Elitenetzwerk Bayern Graduation Ceremony, Augsburg, 17 Nov, 2007.
9. The formation of $CaSiO_3$ perovskite in the Earth's mantle and splitting of the 520 km seismic discontinuity (Invited talk), 17th V. M. Goldschmidt Conference 19.8. - 24.8.2007, Cologne, Germany.
10. Equation of state of (Al, Fe) $MgSiO_3$ lower mantle perovskite. 27.1. -28.1.2007 Joint workshop University Erlangen and Bayreuth University, Windischewissenbach, Germany.
11. The $CaSiO_3$ perovskite forming reaction: new insights into transition zone processes. 12.11. - 14.11. 2005, Joint workshop of the Oxides and Thesis Doctoral school programs, Thurnau Germany.

12. Role of fluids in the evolution of Metabasites of the Lake Morari Area and Implications for Himalayan Orogeny. 19.03. -21.03.2004, Cognizance All India Students Meet IIT Roorkee, India.
Total Publication Profile optional
<u>Books</u>
<u>In Indexed/ Peer Reviewed Journals</u>
<u>Articles</u>
Public Service / University Service / Consulting Activity
<ol style="list-style-type: none"> 1. Warden, Under Graduate Hostel for Girls, Dhaka Hostel Complex, University of Delhi 2011 -2015 2. Warden, Meghdoot Hostel, University of Delhi 2009-2011. 3. Co-chair: Mantle processes and properties on multiple scales: Observation, Experiment, Modeling: a session in 17th V. M. Goldschmidt Conference, 2007. 4 Teaching assistantship in Mineralogy Department of Geology, Delhi University 2003. 5. Summer internship as hydrogeologist, Central Ground Water Board of India 2002.
Professional Societies Memberships
Projects (Major Grants / Collaborations)
<ol style="list-style-type: none"> 1. Constraints on crustal evolution and ore mineralization in the Aravalli-Bundelkhand proto –continent, Northern Indian Shield and the Eastern Baltic Shield Russia Approved by DST-RFBR 01/1/12 Project Investigator – Dr. Ashima Saikia and Co- PI Prof Talat Ahmad. (Finished) 2. “Petrological, geochemical and geochronological studies on the volcano-sedimentary

sequence from Rajgir-Madhupur Belt: Implications for the Crustal Evolution of the Indian Plate.” Sanctioned by CSIR 1/4/2012 Project Investigator – Dr. Ashima Saikia and Co- PI Prof Talat Ahmad (COMPLETED)

3. Mineral chemical characterization of the TTG gneisses of the Aravalli, Chotanagpur-Singhbhum Craton and the Bundelkhand Craton”. Project Investigator – Dr. Ashima Saikia, Delhi University Research Grant 2014-2015.
4. The genesis and emplacement history of Nagaland ophiolites based on mineral chemistry and geochemistry. Project Investigator – Dr. Ashima Saikia Delhi University Research Grant 2011-2012.
5. Petrological and geochemical investigation of the Andaman Island Ophiolite suite to understand its genesis and emplacement history for reconstruction of the tectonic evolution of the Indian sub-continent. Project Investigator – Dr. Ashima Saikia Delhi University Research Grant 2010-2011.
6. The Bundelkhand Granite Massif: New insights on its geodynamic evolution based on petrological, geochemical and geochronological constraints Project Investigator – Dr. Ashima Saikia and Co- PI Prof Talat Ahmad 2009-2010

Other Details

Conference presentations with students

1. Bibhuti Gogoi and Ashima Saikia (2012) Petrochemical characterization of basalts from Bathani volcano-sedimentary sequence of Chotanagpur Granitic and Gneissic Complex (CGGC). Best poster presentation, 99th Indian Science Congress, 2011-2012
2. Bibhuti Gogoi, Ashima Saikia and Mansoor Ahmad (2013) Evidences of magma mixing and mingling from Ghansura rhyolite dome of Bathani volcano sedimentary sequence in Proterozoic Chotanagpur Granite Gneiss Complex, Eastern India. Oral cum poster presentation at the Annual General Meeting (AGM) of the Geological Society of India

held during November 14-16, 2013

- 3.** Bibhuti Gogoi, Ashima Saikia and Mansoor Ahmad (2014) Evaluation of magma mixing from Ghansura Rhyolite Dome of Chotanagpur Granite Gneiss Complex, Eastern India. Oral presentation at 24th Goldschmidt Conference held during 8-13 June 2014 in Sacramento, California, USA
- 4.** Bibhuti Gogoi, Ashima Saikia and Mansoor Ahmad (2015) Sphene centered ocellar texture as a petrological tool to unveil the mechanism facilitating magma mixing. Oral presentation at European Geosciences Union General Assembly held during 12-17 April 2015 in Vienna, Austria
- 5.** Bibhuti Gogoi, Ashima Saikia and Mansoor Ahmad (2015) Significance of viscous folding in magma mixing. Oral presentation at 25th Goldschmidt Conference to be held during 16-21 August 2015 in Prague, Czech Republic
- 6.** *Bibhuti Gogoi, Ashima Saikia, and Mansoor Ahmad (2016) Genesis of emulsion texture due to magma mixing: a case study from Chotanagpur Granite Gneiss Complex of Eastern India* European Geosciences Union General Assembly 2016 Vienna | Austria | 17–22 April 2016
- 7.** Bibhuti Gogoi, Ashima Saikia and Mansoor Ahmad (2016) Understanding magma chamber dynamics through flow instabilities. Goldschmidt Conference, Yokohama, 2016, Japan 26th June to 1st July.
- 8.** Hireddy Chauhan, Talat Ahmad and Ashima Saikia (2012) Petrogenesis of the Archean TTG gneissic basement rocks of the Bundelkhand Craton of the Central India. Oral presentation at 99th Indian Science Congress, 2011-2012

- 9.** Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2013) "Geochemical and geochronological constraints on the petrogenesis of the TTG gneisses of the Aravalli Craton of India". Poster presentation at 3rd International Conference on Precambrian Continental Growth and Tectonism (PCGT-2013)
- 10.** Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2014) U-Pb zircon ages of TTG gneisses of the Aravalli Craton of India. Oral presentation at International Seminar, Magmatism, Tectonism and Mineralization (MTM-2014)
- 11.** Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2015) U-Pb ID-TIMS zircon ages of TTG gneisses of the Aravalli Craton of India. Abstract has been accepted for European Geosciences Union (EGU) to be held in Vienna, Austria during April 12-17, 2015
- 12.** Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2016) TTG and the Genesis of Early Continental Crust: Insights from the Aravalli – Bundelkhand Protocontinent, India. Goldschmidt Conference, Yokohama, 2016, Japan 26th June to 1st July.
- 13.** Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2017) Archean TTG and Associated K-Granite Petrogenesis: Mineral Chemistry and Geochemical Perspective Goldschmidt Conference, , Paris, France 13th -18th August.
- 14.** Eyozele Kiso and Ashima Saikia " Petrological and geochemical characterization of the basalts of Naga Hills ophiolite" Seminar on "Magmatism, Tectonism and Mineralization" 27-29 March 2014
- 15.** Salim Akhtar and Ashima Saikia "Geochemical characterization of Magmatic rocks of South Andaman Island ophiolite suite of India. Salim akhtar and Ashima Saikia. National

conference on emerging trends in Earth Sciences, organised by School of Earth Sciences Central university of of Karnataka, March 2015.

16. Salim Akhtar and Ashima Saikia Geochemical Characteristics of Basaltic rocks of South Andaman Island Ophiolite suite of India. “Geology, Geochemistry, Tectonics and Energy Resources of North East India” in collaboration with the Indian Society of applied Geochemists, Hyderabad (ISAG) 9-11 November 2016. Kohima, Nagaland.

17. 12th Russian Petrographic Conference. Neo-Archean Bundelkhand Granitoids (Central India): Petrography, Mineral Chemistry and Geochemistry Kumar Batuk Joshi, Ashima Saikia, Joyeeta Bhattacharjee and Talat Ahmad

Ashima Saikia

(Signature of Faculty Member)