

RAHUL SUBBARAMAN

BS-MS EARTH SCIENCE MAJOR | POTENTIAL PHD CANDIDATE

I am an aspiring Earth Scientist looking for PhD opportunities for Autumn or Fall 2022. I am broadly interested in characterizing the geochemical and petrological processes in magmatic or volcanic systems. I am particularly motivated to apply the principles of geochemistry and geochronology to field and laboratory studies to address exciting problems in these systems.

C-205 NSCB Hostel (Boys)
IISER Kolkata, Mohanpur, Nadia,
West Bengal, India. Pincode: 741246

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EDUCATION BACKGROUND

5 Years Dual Degree Bachelor and Master of Science (BS-MS)

Indian Institute of Science Education and Research (IISER) Kolkata
August 2017 - Present
Kolkata, India

- Major: Earth Science (Geological Science)
- Minor: Chemical Sciences
- Pre-majors: Earth Science, Chemistry, Biology
- CGPA: 9.21 (10-point scale) [9 semesters]
- Relevant Coursework:

Igneous and Metamorphic Petrology (Theory+Lab), Geochemistry (Theory+Lab), Isotope Geology, Precambrian and Phanerozoic Geology, Mineralogy and Crystallography (Theory+Lab), Mineral Physics, Sedimentology (Theory+Lab), Structural Geology (Theory+Lab), Remote Sensing and GIS, Inverse Theory, Seismology (Theory+Lab), Tectonics and Geodynamics.

Spectroscopy - UV-Vis, IR, Raman, Fluorescence (Theory+Lab),
Chemical Synthesis and Characterization (Theory+Lab),
Thermodynamics, Solid State Chemistry, Differential Equations, Basic
Probability and Statistics, Multivariate Calculus, Basic Linear Algebra.

Senior High School (Class 11 and 12)

Maharishi Vidya Mandir Senior Secondary School, Chennai
July 2015 - April 2017 Chennai, India

- English Core, Mathematics, Physics, Chemistry, Computer Science.
- All India Senior School Certificate Examination, 2017 (CBSE) - 95%

Junior High School (Class 9 and 10)

Modern Senior Secondary School, Chennai
June 2014 - April 2015

- All India Secondary School Certificate Examination, 2015 (CBSE)
CGPA 10.0 [10-point scale]

FELLOWSHIPS

Innovation in Science Pursuit for Inspired Research (INSPIRE)
Department of Science and Technology (DST),
Government of India.
August 2017 - Present

Indian Science Academies' Summer Research Fellowship 2021
Indian Academy of Sciences - Indian National Science Academy
- The National Academy of Sciences, India
May 2021 - July 2021

RESEARCH EXPERIENCE

✓ **Master's Thesis**

Department of Earth Sciences (DES), IISER Kolkata
August 2021 - Present Kolkata, India

- Supervisor: Prof. Sukanta Dey, Department of Earth Sciences, IISER Kolkata
- Goal: Whole-rock major and trace element geochemistry, petrogenesis, and mineral chemistry of the Archean mafic volcanic rocks of the Western Iron Ore Group (WIOG), Singhbhum Craton, India.

✓ **Laboratory Experience**

Crustal Evolution Research Group, IISER Kolkata
January 2020 - Present Kolkata, India

PI: Prof. Sukanta Dey, Department of Earth Sciences, IISER Kolkata
Application of whole-rock major and trace element geochemistry, Zircon U-Pb data, Hf/Nd isotope study, mineral chemistry, and petrographic studies to understand the evolution of the continental crust and associated mantle in the context of the Indian cratons.

✓ *Summer Research Projects*

Summer Research Project (Remote) - SRFP 2021
May 2021 - July 2021 (66 days) Chennai, India

- Supervisor: Prof N V Chalapathi Rao, Department of Geology, Banaras Hindu University, India
- Topic: Geochemistry and petrogenesis of amphibolite from the Simdega Area of Chotanagpur Gneissic Complex

Summer Research Project (Remote) - IISERK SRP 2020
June 2020 - July 2020 (45 days) Chennai, India

- Supervisor: Dr Swastika Chatterjee, Department of Earth Sciences, IISER Kolkata.
- Topic: Understanding the composition of the Earth's Inner Core.

Summer Research Project - Pondicherry University
May 2019 - July 2019 (8 weeks) Chennai & Pondicherry, India

- Supervisor: Prof Rajneesh Bhutani, Department of Earth Science, Pondicherry University, India
- Topic: Understanding the geochemical criteria for determining the provenance of detrital zircons.

✓ **Short Semester Project**

Spring 2020 Semester June 2020 - July 2020 (3 weeks)

- Course: Geotechnical Engineering by Dr Sujata Ray, Department of Earth Sciences, IISER Kolkata
- Topic: Application of Gaussian Plume Dispersion Model (GPDM) for point source emissions to the Sulphur dioxide (SO₂) emissions at NTPC Dadri Power Plant, UP

SKILLS

✓ *Technical Skills*

- Petrographic Microscopy of Igneous, Metamorphic and sedimentary thin sections.
- Processing of Igneous and Sedimentary rocks for Geochemical and Zircon analysis.
- Sieve Analysis, Magnetic Separation and Heavy liquid separation.
- Structural mapping and foliation analysis.
- Working proficiency in Spectroscopy:
Visible spectroscopy, UV-Vis spectroscopy, Infrared spectroscopy, Atomic Absorption spectroscopy.
- A basic understanding of FTIR spectroscopy X-Ray Fluorescence Spectroscopy, ICP-OES, EPMA, ICP-MS.
- Chemistry Wet Lab:
Column chromatography & thin-layer chromatography.
Organic and inorganic synthesis and characterization.

✓ *Computational Skills*

Good Proficiency

Python programming, LaTeX, Origin, QGIS, Stereonet, R-GCDKit, ChemDraw, Microsoft Office Packages.

Working Proficiency

C++ programming, MATLAB, Bash Script (LINUX shell script), EllipseFit, ImageJ.

Basic Proficiency

Adobe Photoshop, VASP, VESTA

✓ *Language Proficiency*

English - Fluent; mode of instruction

Tamil - Native

Hindi- Fluent

TEACHING EXPERIENCE

Teaching Assistant

Autumn 2021 4th Year Petrology Lab Course

August 2021 - December 2021

Prof Sukanta Dey & Dr Tapabrato Sarkar

Spring 2022 1st Year Earth and Planetary Sciences Course

January 2022 - April 2022

Prof Somnath Dasgupta, Dr Gaurav Shukla & Dr Subhronil Mondal

FIELD EXPERIENCE

✓ *Fieldwork for MS Thesis*

Western Iron Ore Group, Singhbhum Craton

October 2021 (7 days)

- Field Area: Jamda-Barbil-Koira-Joda-Nomaundi regions of the Keonjhar and Sundergarh District of Odisha, India and West Singhbhum District of Jharkhand, India.
- Goal: Sampling of mafic volcanic rocks, shales, quartzites and tuffs for petrography, geochemistry, mineral chemistry and detrital zircon analyses.

✓ *Structural Geology Fieldwork (Coursework)*

Ghatsila-Galudih-Tentuldanga Fold Belt

December 2019 (7 days)

- Field Area: Ghatsila, Galudih and Tentuldanga - Eastern Singhbhum District, Jharkhand, India.
- Goal: Structural mapping, petrography, classification and tracking folds, correlating joints sets, studying interference patterns of folds.

OTHER ACHIEVEMENTS

Indian Science Academies' Summer Research Fellowship 2020

Indian Academy of Sciences - Indian National Science Academy

- The National Academy of Sciences, India

For Summer 2020 (Program Cancelled)

ANU - Future Research Talent Travel Grant 2020

The Australian National University, Canberra, Australia

For Summer 2020 (Programme Cancelled)

SEMINARS, WEBINARS, WORKSHOPS & CONFERENCES

PROCRUST 2021

Department of Earth Sciences, IISER Kolkata

23rd and 24th October, 2021

A 2-day International online symposium on Processes in the continental crust, celebrating the 70th birth anniversary of Prof. Somnath Dasgupta.

Geology Webinar Series 2021

Department of Geological Sciences, Jadavpur University

16th July 2021 - 6th August 2021

Webinar Series with international speakers covering various disciplines of Earth Sciences.

ANU STEM Guest Lecture Series 2021

Australian National University

June 3rd, June 9th, June 25th, June 30th, July 1st, July 15th, 2021

Webinar Series with international speakers covering various disciplines of Earth Sciences.

GSITI Online Workshop

Geological Survey of India Training Institute,
Hyderabad, India

10th June 2021 - 11th June 2021

Fundamentals of Geological Mapping

SEMINARS, WEBINARS, WORKSHOPS & CONFERENCES

ICCW - IITM Webinar Series

Indian Institute of Technology Madras, Chennai, India

7th May 2020 - 28th May 2020

Water challenges during and post COVID-19.

Leadership For Academicians Program 2020

IISER Kolkata – MHRD Govt. of India

13th - 24th January 2020

Represented Ek Pehal, a youth-led initiative by the students of IISER Kolkata to empower children of the underprivileged and rock-bottom strata of the society in the conference.

Convergence 2020

Department of Earth Sciences, IISER Kolkata

25th February 2020

Annual Department Day of DES, IISER Kolkata. A forum for interactions between young students and eminent researchers in India from various disciplines of Earth Sciences.

Times Innovation Challenge Kolkata Conference

Jointly organized by The Times of India, IIM Calcutta Innovation Park (IIMCIP), Nasscom, Tie, and Neotechub

30th August 2019

A panel discussion bringing together industry experts, entrepreneurs and academicians to discuss on entrepreneurship.

Vijyoshi - National Science Camp

Jointly organized by INSPIRE (DST - Govt. of India), KVPY, IISc Bangalore, IISER Kolkata

A forum for interactions between bright young students and leading researchers in various branches of Science and Mathematics through lectures sessions and discussion sessions.

EXTRA-CURRICULAR ACTIVITIES

Founder Cell Coordinator

IISER Kolkata Students' Alumni Cell

2 Terms: September 2020 – Present

External Contributor - Science Communication

Cogito137 - a multilingual web-based SciComm platform hosted on the IISER Kolkata web domain.

December 2020 – Present

Student Writer - Science Communication

Scicatalyst | SciComm – a student-run Science blogging channel.

April 2020 – January 2021

Academic Coordinator, Core Member & Volunteer

Ek Pehal - a youth-led initiative by the students of IISER Kolkata to empower children of the underprivileged and rock-bottom strata of the society.

August 2017 – Present

Hostel Representative

Student Hostel Committee, IISER Kolkata

Year 2020

Department Representative

Department of Earth Sciences, IISER Kolkata

April 2019 – May 2021

Founder Treasurer of Club

Trekking and Adventure Club, IISER Kolkata

August 2019- August 2020

Secretary of Club

Nature Club, IISER Kolkata

March 2018 - March 2019

Blogger

Carte Blanche on Wixsite

<https://rahulsubbarox.wixsite.com/carteblanche>

REFERENCES

Prof Sukanta Dey

Professor and Head,
Department of Earth Sciences,
IISER Kolkata

sukanta.dey@iiserkol.ac.in

(MS Thesis Supervisor)

Prof N V Chalapathi Rao

Professor,
Department of Geology,
Banaras Hindu University

nvcrao@bhu.ac.in

(Summer Project Supervisor)

Dr Tapabrato Sarkar

Assistant Professor,
Department of Earth Sciences,
IISER Kolkata

tapabrato@iiserkol.ac.in

(Course Instructor)