

**IISER Kolkata Post-doctoral Fellowship (PDF) Programme  
Department of Earth Sciences (DES)**

Indian Institute of Science Education & Research Kolkata is the first among five IISERs, to have established a Department of Earth Sciences. The department started its journey in 2007, a year after IISER Kolkata was established. The first batch of BS-MS Earth Science Major students graduated in 2012. Please check the department website for further details: <http://earth.iiserkol.ac.in/>.

The Department is committed to building a community of researchers including students and faculty members. Our goal is to develop a modern center for Earth Science Education and Research in three core areas:

1. Environmental & Ecological studies in modern and ancient systems,
2. Isotope Geochemistry & Biogeochemical studies,
3. Solid Earth studies

**Number of positions available:**

Maximum 03

**Department-specific Eligibility:**

At least one publication from the PhD work of the candidate

**Departmental Contact:**

Email: [pdf.des@iiserkol.ac.in](mailto:pdf.des@iiserkol.ac.in)

**Department-specific Application Format:**

Please fill up the form given below and send it to: [pdf.des@iiserkol.ac.in](mailto:pdf.des@iiserkol.ac.in)

**Important Dates:**

Last date of submission of application: 03/04/2024

Date of publication of the interview list (tentative): 25/04/2024

Interview date (tentative): 15/05/2024

Date of publication of results: will be informed later

### **Available Research Areas/projects:**

The Department of Earth Sciences is looking for three postdoctoral fellows. Candidates can apply for the research projects which are listed below. Candidates are also encouraged to apply with their own research proposals related to the available research area listed below.

#### **Research Project #1 (Dr. Tapabrato Sarkar): Precambrian crustal evolution and geodynamics.**

In contrast to the well-understood modern day plate tectonics, the Precambrian geodynamics, especially the Archean geodynamics, is still debated and various models have been proposed. Many of these models are based on numerical simulations and validation of these models based on information preserved in Archean to early Proterozoic rocks record is rather limited. The Archean cratons of Peninsular India, surrounded by Paleoproterozoic to Neoproterozoic orogenic belts, is a window to investigate the Archean-Paleoproterozoic crustal evolution and tectonic processes. The successful candidate will study the petrological and geochemical evolution of certain Archean to early Proterozoic granulite belts to decipher the crustal evolution and tectonic processes.

#### Eligibility Criteria:

Apart from the general eligibility requirements, the applicant should have a strong background in metamorphic petrology, geochemistry and geochronology and have the ability to conduct field work independently.

#### **Research Project # 2 (Prof. Sukanta Dey):**

The Crustal Evolution Research Group of Prof. Sukanta Dey is inviting applications from potential candidates for a Postdoc position in the broad field of "igneous petrology, geochemistry and crustal evolution". The candidate will work closely with BSMS students and Ph.D. scholars of the group to address some of the broad questions regarding how early (Archean) continental crust formed on Earth. The postdoc will work in some key field areas of Indian cratons on the following research issues: (i) How far can we trace back the continental crust formation processes? (ii) What are the different events of juvenile crust formation and reworking of older crust? (iii) What are the geodynamic implications for such crust-formation events? (iv) What was the nature of the mantle that acted as source of the early crust? (v) Is there any evidence of the operation of plate tectonics on early Earth?

Candidates having experience in geological mapping with strong flair in petrography, and handling and interpretation of element geochemical, geochronologic and isotope geochemical data are encouraged to apply. Experience in handling instruments (including XRF/ICP-MS) and sample preparation (zircon separation, mounting and imaging, rock sample digestion) will be an added advantage.

### **Research Project #3 (Dr. Subhronil Mondal): Paleocology of the Cenozoic marine invertebrates of India**

The main objective of the project is to reconstruct the paleocology of the Cenozoic marine invertebrates. The postdoctoral fellow will use different taxonomic groups (e.g., molluscs, foraminifers) to achieve this goal. Fieldworks in different Indian sedimentary basins are essential for the collection of the samples. Candidates with their own proposals related to this project can also apply.

#### Eligibility Criteria:

Apart from the general eligibility requirements, the candidate should have experience in geological fieldwork. Candidates having expertise in paleocology/ecology, foraminifer/ostracod taxonomy are encouraged to apply. Candidates with experience in computation/programming are preferred.

### **Research Project #4 (Dr. Kathakali Bhattacharyya): Fractures & Veins: A study on their attributes and roles in accommodating deformation**

Rocks deform through different stages of progressive deformation to reach their finite deformed state. Growth of fractures and veins are often associated with various stages of progressive deformation, and may provide critical insights into the deformation path. This project proposes to address the role of such structures toward accommodating deformation and their controlling factors from natural settings.

Eligibility Criteria: Apart from the existing criteria, the candidate should have experience in structural geology fieldwork, and preferably experience in fracture modeling. Candidates with their own proposals are also welcome to apply.

# INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH KOLKATA

Mohanpur – 741246, Nadia, West Bengal, INDIA

Website: [www.iiserkol.ac.in](http://www.iiserkol.ac.in)

## INSTITUTE POSTDOCTORAL FELLOWSHIPS DEPARTMENT OF EARTH SCIENCES

<b>Department:</b>	<b>Department of Earth Sciences (DES)</b>		
<b>Proposed Faculty Host:</b>			
<b>Name of Applicant:</b>			
<b>Address for Communication:</b>	<b>Permanent Address:</b>		
Mobile No. 1		Email 1	
Mobile No. 2		Email 2	

<b>Date of Birth</b>			<b>Nationality</b>	<b>Sex</b>	<b>Category (GE/ST/SC/OBC/PD)</b>
<b>DD</b>	<b>MM</b>	<b>YYYY</b>		<b>(M/F)</b>	

### PhD Programme details:

Title of the Thesis			
Name of the Supervisor			
Name of the Co-supervisor (if any)			
Name of the Institution / University			
Month and year of Submission / Award*	<b>DD</b>	<b>MM</b>	<b>YYYY</b>   Awarded / Submitted

\* Expected dates in case of PhD degree has not been awarded at the time of applying.

### Salient Features of your PhD in 3-5 bullets:

- 
- 
-

**Details of academic record (from Bachelor onwards)**

Sl. No.	Degree	Year	Institution/University	Subjects	CGPA/Grade/% of Marks
1.					
2.					
3.					

**Details of past employment (After Ph.D. onwards)**

Sl. No.	Designation	Organisation	Duration	
			From	To
1.				
2.				
3.				
4.				

**Details of Publication (use separate sheet, if required)**

Sl. No.	Title, Authors, Journal
1.	
2.	
3.	

**Referees (Three (3) Nos)**

Sl. No.	Name	Contact Address with email and phone number
1.		
	Email :	Phone :
2.		
	Email :	Phone :
3.		
	Email :	Phone :

**Details of the Proposed Proposal (in case of self-identified proposal) OR the Statement of Purpose for the pre-defined research areas/projects listed above** (use separate sheet, if required):

\*for self-identified project, clearly stated the following within 400 words – Objectives, Methodology, Deliverables

**Choice of the Research areas/Project (please see above). For self-identified proposals, please mention your choice of mentor(s) (up to three).**

Mentor 1 -

Mentor 2 -

Mentor 3 -

**Enclosures ( check list √ )**

- Application Form
- Curriculum Vitae
- List of Publications

**Declaration**

*I hereby declare that all the information provided in the application form is correct to the best of my knowledge and belief. I am aware that providing of incorrect information in the application may lead to cancellation of candidature at any stage.*

Place:

Date:

Signature of the applicant

---

Please send the application along with enclosures, marked “**Application for PDF, Department of Earth Sciences (DES)**” to [pdf.des@iiserkol.ac.in](mailto:pdf.des@iiserkol.ac.in).