

## **St. Paul's C. M. College**

### **Department of Chemistry**

#### **Reports of the Academic visit at CHQ, Geological Survey of India, Kolkata on 09.01.2026**

The academic visit of the students of the department of Chemistry at Geological Survey of India (GSI), Central Head Quarters, Kolkata for the academic year 2025-2026 being attended by a total of 20 participants including 11 Semester-III & 6 Semester-V current students, 4 faculties along with 1 laboratory assistant of the department of chemistry was held on 09.01.2026. The Geological Survey of India (GSI) is a scientific agency of India. It was founded in 1851, as a Government of India organization under the Ministry of Mines. The Ministry of Mines is responsible for surveying and exploring for minerals (other than natural gas and petroleum) that are used in mining and metallurgy. It searches for non-ferrous metals including aluminium, copper, zinc, lead, gold, nickel, etc. mining and metallurgy.

Chemistry students of the Department of Chemistry, St. Paul's Cathedral Mission College visited the GSI for practical, hands-on experience with advanced analytical instruments (like ICP-MS, XRF, AAS), learning about geo-analytical chemistry, sample analysis (rocks, minerals, soil), mineral exploration, and environmental studies, gaining insights into real-world applications of chemistry in geological research and resource management. These educational trips bridge theory with practice, showing how chemistry supports GSI's functions in national data creation and mineral assessment.

#### **Key Reasons for students' visit to GSI:**

- **Practical Exposure to Instruments:** Students experienced and learnt about sophisticated equipment used for elemental analysis, far beyond typical college and university labs, such as X-ray Fluorescence (XRF) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS).
- **Understanding Geo-analytical Chemistry:** They got insights into the specialized chemistry involved in analyzing geological samples for major, minor, and trace elements.
- **Mineral Exploration & Resource Assessment:** Learnt how chemical data helps in identifying and evaluating mineral resources.

- **Field & Lab Integration:** Experienced how chemists work with geologists in the field for sample collection and then analyze them in labs.
- **Career Insights:** Gained an understanding of potential career paths within the GSI as a chemist.

In essence, GSI visits offered chemistry students a direct look into how chemical principles are applied in large-scale national scientific endeavours related to earth sciences.

The National Meteorite Repository (NMR) of the GSI is located in Kolkata at 15 A&B, Kyd Street. GSI Headquarters, Kolkata is a nodal agency for Indian meteorites, research, preservation, and exhibition. A unique feature of the visit included a visit at the NMR centre. The students saw hundreds of different meteorites (647) including various types (chondrites, achondrites, iron), Martian (Shergotty), lunar, and India's Kopargaon meteorite.

Students also had the opportunity to see the Gemmology laboratory, NCEGR Kolkata where they witnessed the different types of pure and impure gems such as natural ruby, natural blue sapphire, natural diamond, etc., and had an hand-on experience how a pure Ruby gem looks differently from its impure variety with its cavity filled up with some filling agents such as oils, resins, waxes, or glass under a microscope.

The visit started at 11.00 a.m. with a warm welcome from the DDG (Geology), GSI Mr. Nihar Ranjan Bhattacharjee along with various directors namely Dr. Krishnendu Maiti, Mr. Nityanand Pandey, Dr. Ashutosh Chakraborty and Mr. Ganesh Chandra Bhuyan of the chemistry fraternity. It ended at around 5.30 p.m. in the evening with a closing ceremony attended by the directors of the chemical section. The satisfied faces of the young aspirants really made our visit worthwhile.

The various in-charges along with the scientists who made the academic visit possible are the following. The St. Pauls' C. M. College family offer their sincere gratitude for those involved. A special thanks to Mr. Kalyan Sarkar, senior scientist, GSI, an alumnus of the department of chemistry, St. Pauls C. M. College for his help and encouragement.

Director General: Shri Asit Saha

Additional Director General: Shri Joydeep Guha

Deputy Director General (M-IV): Shri Saibal Ghosh

### **Introduction at DDG Sir Room:**

- i) Shri Nihar Ranjan Bhattacharjee, i/c, Deputy Director General (Geology)
- ii) Dr. Krishnendu Maiti, Director (Chemical)
- iii) Shri Nityanand Pandey, Director (Chemical)
- iv) Dr. Ashutosh Chakraborty, Director (Chemical)
- v) Shri Ganesh Chandra Bhuyan, Director (Chemical)

### **X-Ray Fluorescence (XRF) Spectroscopy:**

- i) Shri Pabitra Dey, Senior Chemist
- ii) Shri Chiranjit Dutta, Chemist

### **Direct Mercury Analyser (DMA):**

- i) Shri Jishnu Samanta, Senior Chemist
- ii) Shri Abhisek Bandyopadhyay, Assistant Chemist

### **Flame-Atomic Absorption Spectroscopy (F-AAS):**

- i) Dr. Prasun Ghosh, Senior Chemist
- ii) Mrs. Sunita Chongre, Chemist

### **Graphite Furnace-Atomic Absorption Spectroscopy (GF-AAS):**

- i) Shri Mihir Das, Senior Chemist
- ii) Shri. Tapas Paul, Senior Chemist

### **Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):**

- i) Shri Sunirmal Barik, Senior Chemist
- ii) Dr. Biplab Banerjee, Senior Chemist

### **National Meteorite Repository (NMR):**

- i) Shri Arindam Dutta, Director (Geology)
- ii) Mrs. Susmita Mondal, Superintending Geologist
- iii) Mrs. Monotrisha Dey, Senior Geologist
- iv) Shri Ritabrata Mukherjee, JTA(Geology)

### **Gem Testing Laboratory:**

- i) Mrs Smita R, Director (Geology)
- ii) Mrs. Munmun Das, Assistant Geologist

### **Raman Spectroscopy:**

- i) Mrs Debjani Sarkar Senior Geologist
- ii) Shri. Debottam Sarkar, Geologist



