

Preface

The Earth's dynamic geology and its profound influence on surface processes have been subjects of unending fascination and critical importance for scientific research. This issue of JOURNAL OF GEOINTERFACE introduces multifaceted studies that explore the intricate correlation between geological structures, surface processes, and valuable natural resources. The collection of eight papers presented here sheds light on diverse aspects of this complex relationship, each focusing on different regions and geological phenomena, providing a comprehensive understanding of the Earth's dynamic processes. From stream flow patterns influenced by geological structures to the identification of erosion-prone areas, the need for sustainable energy sources, and the challenge of geogenic contaminants in groundwater, these studies offer critical insights into Earth's dynamic geology and its impact on human activities and the environment. By deepening our understanding of these relationships, this research contributes to the development of effective strategies for sustainable resource management and disaster mitigation, ensuring the preservation and responsible utilization of Earth's diminishing resources. Additionally, the study of gold deposits provides an intriguing glimpse into the allure of this precious metal and its role as an international monetary standard throughout history. The pursuit of knowledge in these fields remains ever vital in advancing our understanding of the Earth's dynamic processes and harnessing its resources responsibly for the betterment of humanity.

Sahu presents a compelling case study investigating the interplay between geological structures and stream orientation near the 2001 Bhuj earthquake zone in Gujarat, India. By delving into the effects of active tectonics, such as earthquakes, on stream flow direction, this research establishes a direct correlation between geological structures, particularly joint orientation, and the flow patterns of both lower-order and higher-order streams. **Malagar et al.** address the pressing issue of erosion in mining regions, utilizing remote sensing and GIS techniques to estimate annual soil loss in the Dipka, Gevra, and Kusmunda Coal Mine Area in Chhattisgarh, India. Identifying erosion-prone areas is crucial in devising effective erosion control measures to mitigate the environmental impact of mining activities and preserve precious soil resources. **Mahanta et al.** highlight India's energy dependence on fossil fuels and the growing need for embracing unconventional energy sources to address environmental concerns. With a focus on shale gas development, the research explores various unconventional energy sources and their potential to transform India's energy landscape. By examining shale gas developments globally, the study sheds light on the possibilities for sustainable energy solutions. **Renjith et al.** present a thought-provoking bibliometric analysis, revealing a geographic skew in disaster research. The study identifies a disparity between disaster-prone regions, mainly located in developing nations, and influential authors and institutions primarily affiliated with developed countries. Addressing this divide and promoting inclusive research collaborations is essential in enhancing global disaster management strategies, ensuring a more equitable allocation of resources and expertise. **Pradhan and Behera** provide a succinct review of geogenic arsenic in groundwater in India, emphasizing the threat posed by arsenic contamination in regions like the Bengal Basin. With the growing reliance on groundwater for drinking and domestic use, implementing effective measures to combat geogenic contamination is crucial for ensuring access to safe and clean drinking water. **Shiny et al.** investigates the distribution of benthic foraminiferal assemblages in the surface sediments of the Manakudy Estuary in Kanyakumari district, India, offering valuable insights into the environmental conditions and sediment characteristics of the estuary. Understanding coastal environments is vital for sustainable coastal zone management and preserving these ecologically sensitive regions. **George et al.** shed light on the use of geophysical techniques to delineate saline and freshwater aquifers in the coastal stretch of Kanyakumari, Tamil Nadu, India. By employing electrical resistivity surveys, the research identifies and differentiates freshwater and saltwater aquifers, providing valuable information for sustainable water resource management in coastal regions. **Sahoo et al.** concisely reviews the general characteristics of gold deposits, shedding light on the origins of this precious metal that has captivated civilizations for millennia. **Joy et al.** demonstrate a medium to high energy environment during sediment deposition in the Muttukkadu backwaters and show that bivariate plots are valuable in interpreting energy conditions and other relevant factors.

The JOURNAL OF GEOINTERFACE recognizes the significance of rigorous and transparent publishing practices, and our commitment to maintaining international standards is unwavering. Our editorial and peer review processes are designed to uphold the highest level of academic integrity and ensure the credibility of published work. Whether it be investigations into geological formations, studies on climate change impacts, or explorations of geospatial technologies, the journal seeks to showcase a wide spectrum of research endeavors that reflect the vastness of Earth sciences. The vision is to create an inclusive and collaborative environment where researchers, academics, and professionals can connect and engage in meaningful dialogue.

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Through this exchange of knowledge and ideas, we hope to inspire innovation, foster new collaborations, and drive advancements that benefit society and our understanding of the Earth.

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