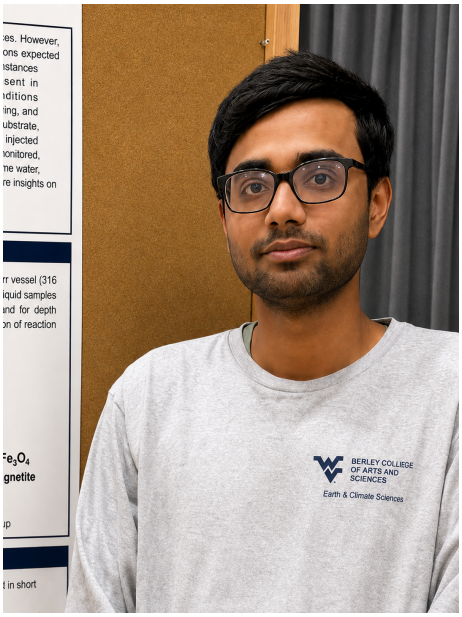
Arkajyoti Pathak, West Virginia University, Morgantown, West Virginia, USA for his project: *Hydrogen Generation from Reservoir Iron-bearing Phases: Implications for In-situ Production*.



Arkajyoti Pathak is a PhD candidate in the IsoBioGeM Laboratory in the Department of Geology and Geography at West Virginia University, advised by Dr. Shikha Sharma. His research addresses a critical gap in subsurface energy systems: the reactivity of iron-bearing minerals with hydrogen and CO_2, a factor with direct implications for the safety and efficiency of underground hydrogen storage, carbon sequestration, and geothermal projects nationwide. He is currently investigating the hydrogen generation potential of sedimentary reservoirs. His work has informed collaborative modeling efforts on hydrogen leakage risk in shallow, iron mineral bearing aquifers.

Alongside this work, Arkajyoti studies the geochemistry of critical minerals, examining the mobilization of lithium and rare earth and yttrium (REY) elements from iron sulfide phases in Appalachian coals and produced waters. This research has direct relevance to domestic critical mineral supply chains. He is also a participant in the WVU Innovation & Commercialization Scholars program, contributing to the extension on a patented lithium extraction technology.

Arkajyoti holds an MSc in Applied Geology from the Indian Institute of Technology Bombay and a BSc from Jadavpur University. His work has been published in Fuels, Aquatic Geochemistry, and the International Journal of Hydrogen Energy, with additional papers in review and press. He is supported by DOE-EPSCoR funding and expects to defend his dissertation in early 2027, after which he plans to pursue a postdoctoral position continuing this research. He is grateful for the generosity of the Lipman Foundation and the Geological Society of America which enables his dissertation work