学 术 报 告

Early Evolution and Diversification of Eukaryotes: Insights from the Proterozoic Sedimentary Basins of India



报 告 人：Dr. Veeru Kant Singh

报告时间：2026 年 11 月 18 日 14:00

地　　点：图书馆三楼报告厅

主　　办：全国重点实验室、科技处、综合处、人教处

报告及报告人简介：

The Proterozoic Eon (2.5–0.538 Ga) represents a critical interval in Earth's biological evolution, witnessing the emergence, early diversification, and increasing ecological complexity of eukaryotic life. The transition from predominantly prokaryotic ecosystems to increasingly complex eukaryotic communities was closely linked to changes in atmospheric oxygenation, ocean chemistry, nutrient availability, and environmental conditions. Indian Proterozoic sedimentary basins provide an important geological archive for investigating these evolutionary transitions through their exceptionally preserved fossil assemblages. Significant evidence has been documented from the Bhima, Chhattisgarh, Marwar, Vindhyan and Cuddapah basins, offering valuable insights into the antiquity and diversification of early eukaryotes. The occurrence of morphologically complex organic-walled microfossils, including *Tappania*, *Shuiyousphaeridium*, and other ornamented acritarchs from the Proterozoic successions in India, highlights the early development of cellular complexity, cytoskeletal organization, and possible reproductive strategies. These fossil assemblages, alongside sedimentological and geochemical records, offer opportunities to understand the relationship between biological innovation and changing Proterozoic marine environments.

Dr. Veeru Kant Singh is a distinguished Scientist at the Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow, India, with research primarily focusing on the palaeobiological investigations of Proterozoic sedimentary successions of the Indian subcontinent. His work integrates field investigations, palaeontological analysis, taxonomy, taphonomy, and advanced techniques, including CLSM and LRS, contributing to a broader understanding of early life evolution and the global correlation of Precambrian sedimentary successions. Dr. Singh received the prestigious Sharda Chandra Gold Medal from the Palaeontological Society of India in 2023. He also serves as a voting member of the International Subcommission on Ediacaran Stratigraphy.