Characterization of radioactive organic matter from Kaimur Group, Vindhyan Supergroup, India

Sikta Patnaik*, Amit Kumar Jain, Subhajit Pandey, Sanku Usha Kiran and K. K. Pandey

Atomic Minerals Directorate for Exploration and Research, Hyderabad 500 016, India

The Vindhyan sediments overlying the Bundelkhand granite complex have conducive attributes for hosting unconformity-type uranium mineralization. In the Kaimur sandstones of the Vindhyan Supergroup overlying the basement Bundelkhand granites, uranium mineralization hosted by subfeldspathic arenite intercalated with shale has been observed. Uranium minerals are associated with organic matter and pyrite present in arenite. Globular organic matter disseminated in the sediments shows moderate reflectance under reflected light. The average total organic carbon content in organic matter-rich rock samples is 1.1%. It has undergone excessive thermal maturation and high dehydrogenation reflected from a low H/C ratio. Raman spectral analysis indicates that the organic matter contains amorphous carbon.

*For correspondence. (e-mail: siktapatnaik.amd@gov.in)