# Characterization and genesis of uranium mineralisation in the Cretaceous sedimentary basin of Meghalaya, India

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Meghalaya plateau of northeast India is a horst-like feature uplifted in the final stages of the Himalayan orogeny to its present height of 1500m. Its southern fringe is covered by thick cover of Upper Cretaceous to Eocene sediments. Location of numerous surface uranium occurrences in the Upper Cretaceous Mahadek formation has led to intense uranium exploration activities in this province which culminated in the discovery of a number of sedimentary type uranium deposits. The Upper Cretaceous Mahadek formation extend over a stretch of 120×15 km in the E-W direction. It is surmised that the breakup of Gondwanaland has created a rift system in the Indo-Antarctican craton providing a linear basin for the deposition of sediments under fluvial conditions. The Mahadek formation is composed of a lower reduced and an upper oxidised sandstone units, which are poorly sorted, immature felspathic sandstones derived from the adjoining granitoids. Channel and flood plain sedimentary facies are identified in the Lower Mahadeks and uranium mineralisation is restricted to the channel sediments in association with organic matter as with the uranium deposit at Domiasiat. Conventional exploration methods were adopted in the initial stages of the exploration. With the advent of Remote Sensing technology, new insights on the disposition and mineralizing processes led to the discovery of another deposit around Wahkyn in this province. Ongoing exploration in this part of the sedimentary basin is likely to add more such deposits in the near future.