

## OCCURRENCE AND DISTRIBUTION OF CARBAZOLES AND BENZOCARBAZOLES IN UPPER ASSAM BASIN, INDIA

A. Devi, S. Boruah and G.B. Gilfellow

*R & D Department, Oil India Limited, Duliajan, Dibrugarh District, Assam*

*Email: archana\_devi@oilindia.in*

### **Abstract**

Eleven crude oil samples from various structures of Upper Assam Basin have been investigated for occurrence and distribution of carbazoles and benzocarbazoles using gas chromatography – mass spectrometry/mass spectrometry (GC – MS/MS). Occurrence of these carbazoles was observed in most of the samples studied. The distribution of carbazoles is dominated by C<sub>0</sub> – C<sub>2</sub> carbazoles. Among the C<sub>1</sub> and C<sub>2</sub> – carbazoles, 1 – methylcarbazole and 1,8 – dimethylcarbazole show the highest abundance respectively. They have shown little or no dependency of facies or maturity. The ratio of benzo[a]carbazole/benzo[a]carbazole + benzo[c]carbazole varies slightly in the entire maturity range, indicating low maturity dependence. These results suggest that facies and maturity will not have any pronounced effect, on the use of carbazoles and benzocarbazoles distribution as petroleum migration parameters in Upper Assam Basin.

*Keywords:* Carbazoles, Benzocarbazoles, Upper Assam Basin, Maturity, Petroleum Migration