

Dynamic imbibition and NMR analyses

NMR experiments were conducted using a Niumag MesoMR12-070H-I instrument with a low constant magnetic field of 0.3 T. The experimental parameters include waiting time (TW) of 5000 ms, echo number (NECH) of 8000, echo interval (TE) of 0.1 ms, and the number of scans (NS) of 64. The brief experimental procedure included the samples (cylindrical core plugs: 2.54 cm in diameter and 3 cm in height) without oil washing being first dried at 60°C for 48 hrs, then imbibition with distilled water or n-dodecane for 30 days, and the NMR analyses being conducted at selected time intervals to investigate the dynamic imbibition processes.