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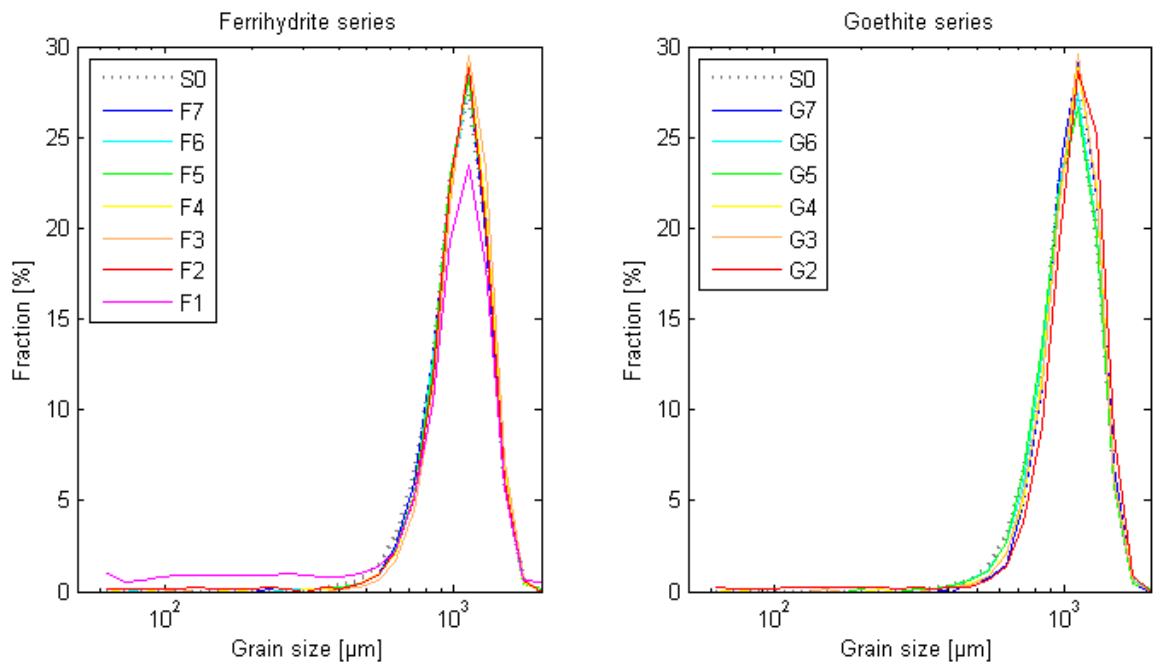
*Supplement of*

## **Hydraulic characterisation of iron-oxide-coated sand and gravel based on nuclear magnetic resonance relaxation mode analyses**

**Stephan Costabel et al.**

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**Figure S1: Grain size distributions of (a) the ferrihydrite-coated and (b) the goethite-coated samples.**

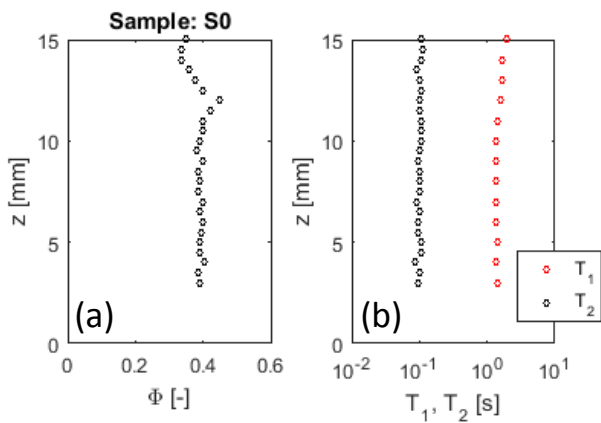


Figure S2: Distributions of (a) NMR porosity and (b) mean relaxation times of initial sand sample S0 (c).

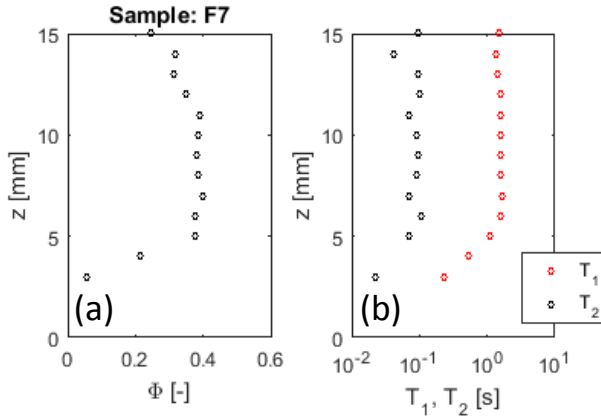


Figure S3: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F7 after precipitation of ferrihydrite (c).

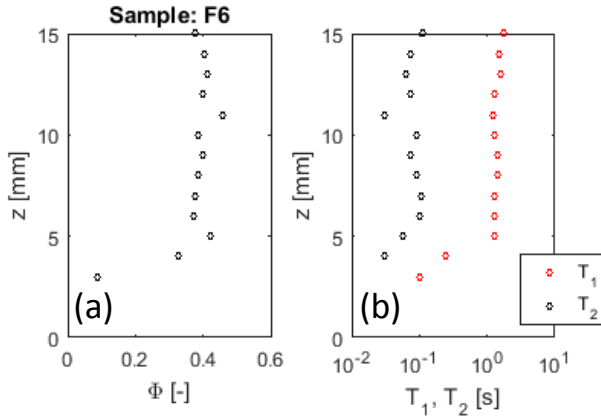


Figure S4: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F6 after precipitation of ferrihydrite (c).

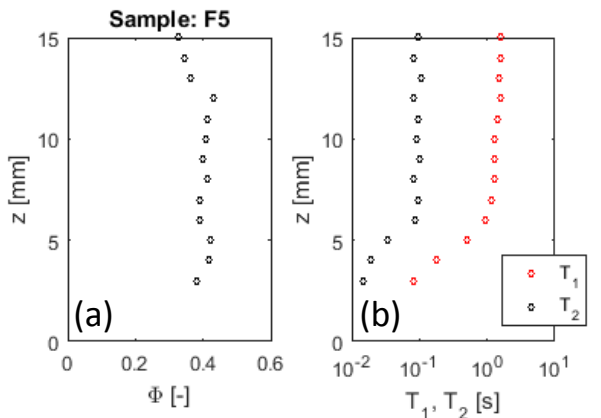
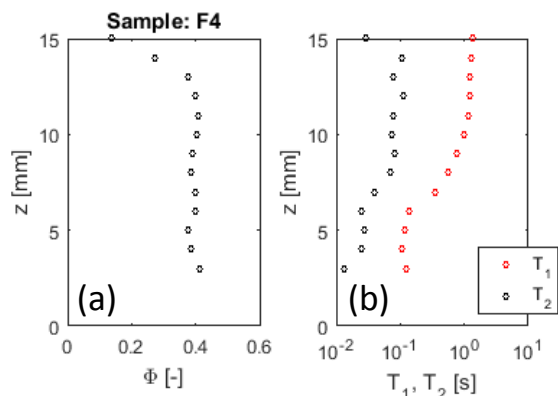
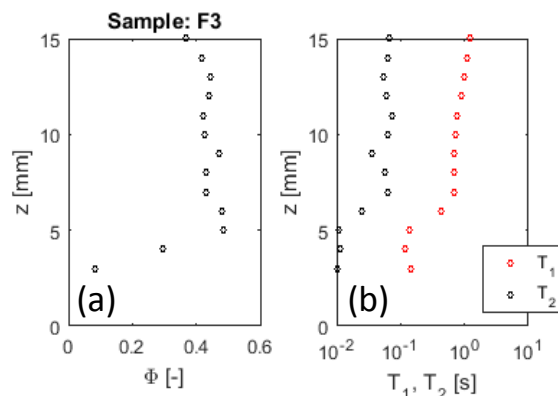


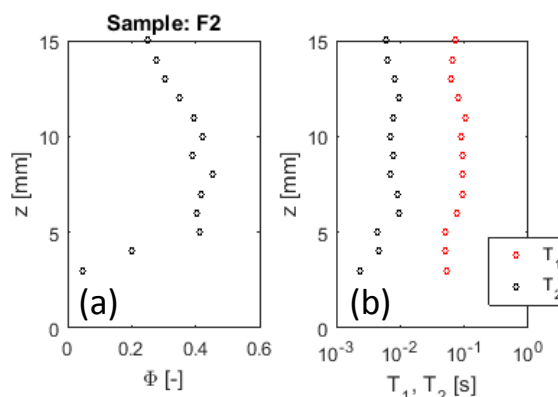
Figure S5: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F5 after precipitation of ferrihydrite (c).



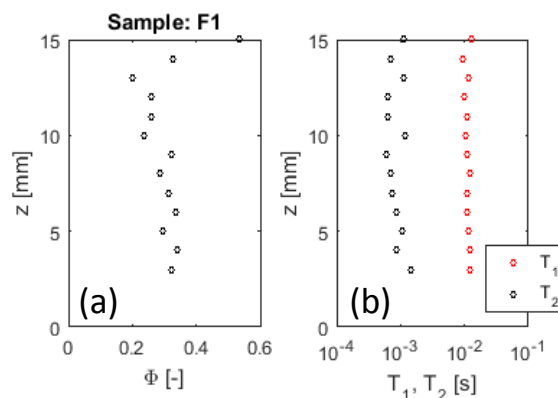
**Figure S6: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F4 after precipitation of ferrihydrite (c).**



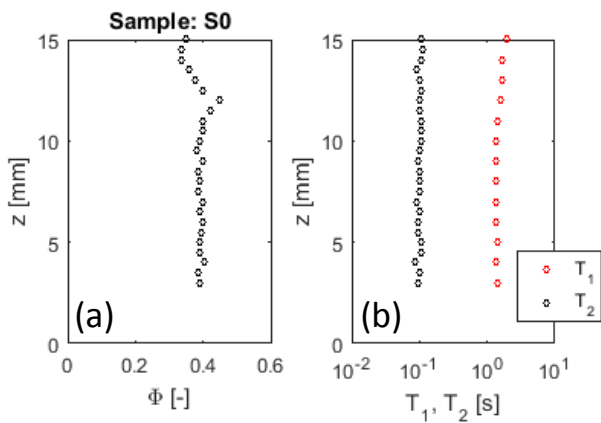
**Figure S7: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F3 after precipitation of ferrihydrite (c).**



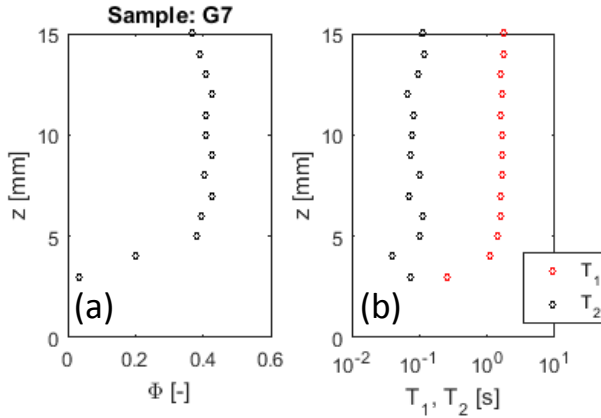
**Figure S8: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F2 after precipitation of ferrihydrite (c). Please note the range of x-axis which differs from Fig. S0 – S6.**



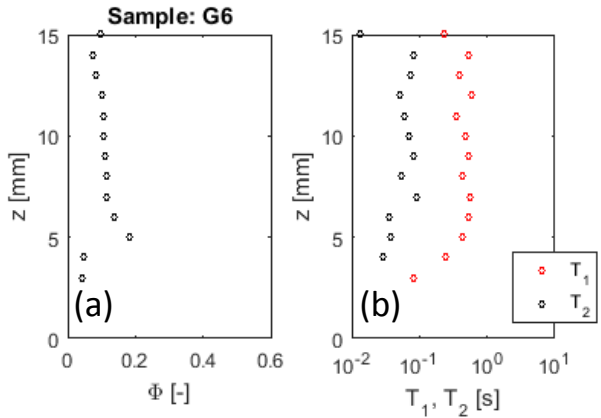
**Figure S9: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F1 after precipitation of ferrihydrite (c). Please note the range of x-axis which differs from Fig. S0 – S7.**



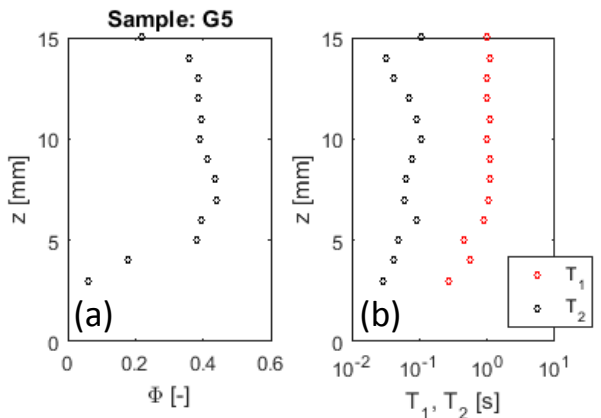
**Figure S10: Distributions of (a) NMR porosity and (b) mean relaxation times of initial sand sample S0 (c).**



**Figure S11: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G7 after precipitation of goethite (c).**



**Figure S12: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G6 after precipitation of goethite (c). Please note that the sample almost dried out due to imperfect sealing.**



**Figure S13: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G5 after precipitation of goethite (c).**

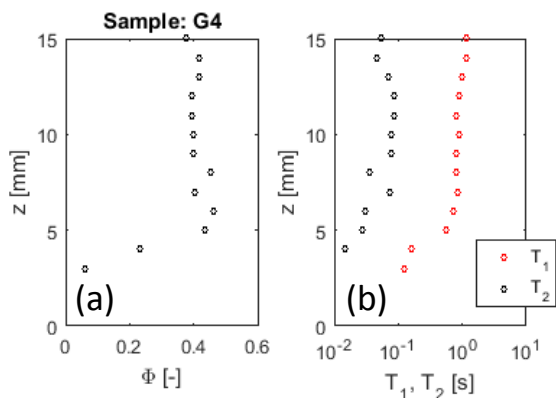


Figure S14: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G4 after precipitation of goethite (c).



Figure S15: Sample G3 after precipitation of goethite. Sample dried out completely due to imperfect sealing (reliable NMR measurements were possible after homogenisation only).

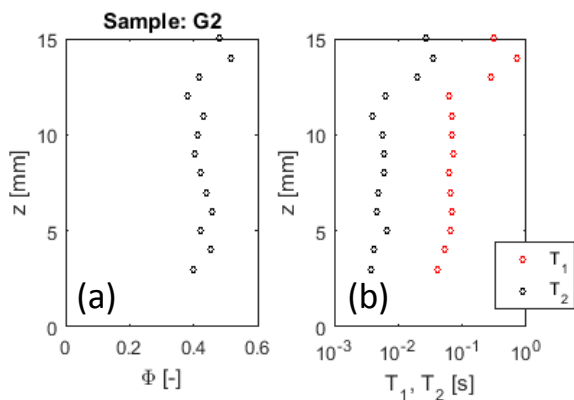
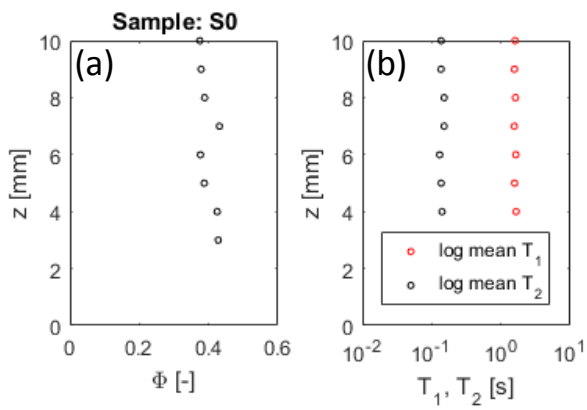
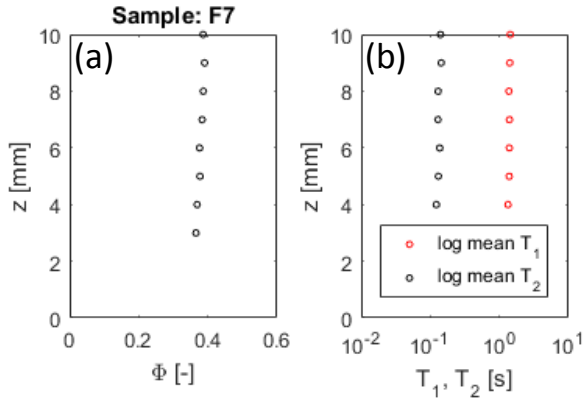


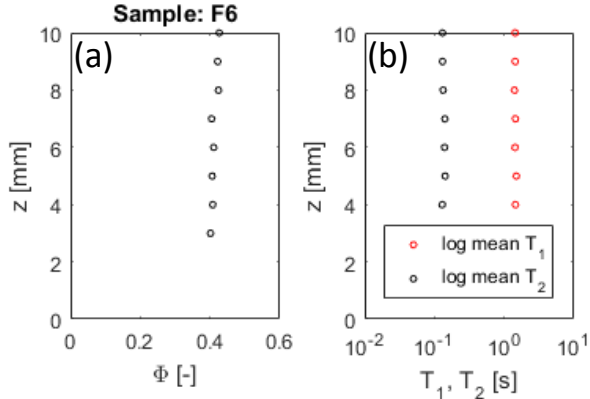
Figure S16: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G2 after precipitation of goethite (a photograph was not taken). Please note the range of x-axis which differs from Fig. S9 – S13.



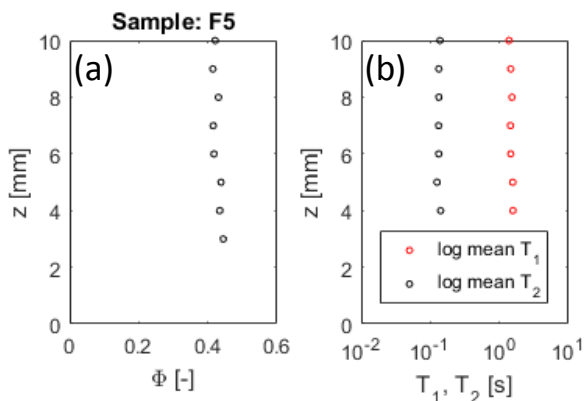
**Figure S17: Distributions of (a) NMR porosity and (b) mean relaxation times of initial sand sample S0.**



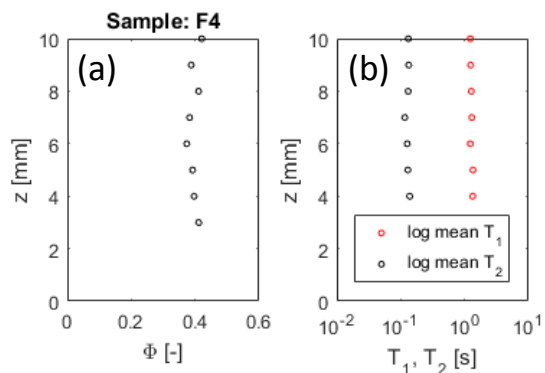
**Figure S18: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F7 after precipitation of ferrihydrite and subsequent homogenisation.**



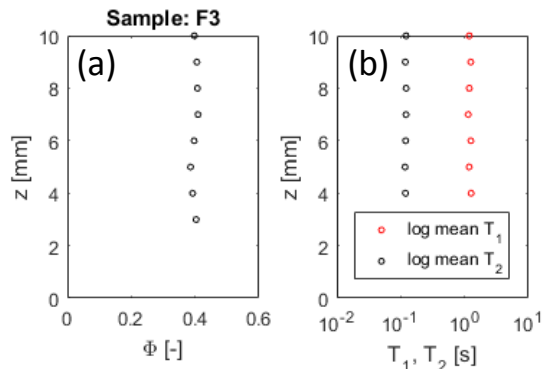
**Figure S19: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F6 after precipitation of ferrihydrite and subsequent homogenisation.**



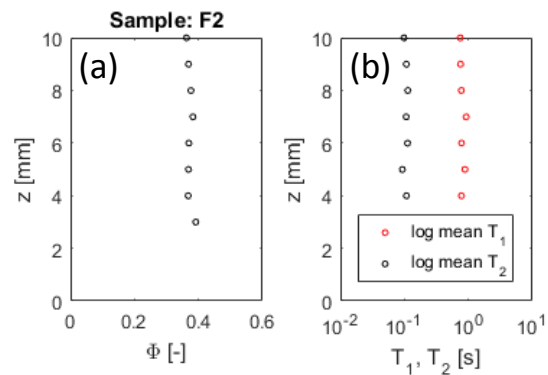
**Figure S20: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F5 after precipitation of ferrihydrite and subsequent homogenisation.**



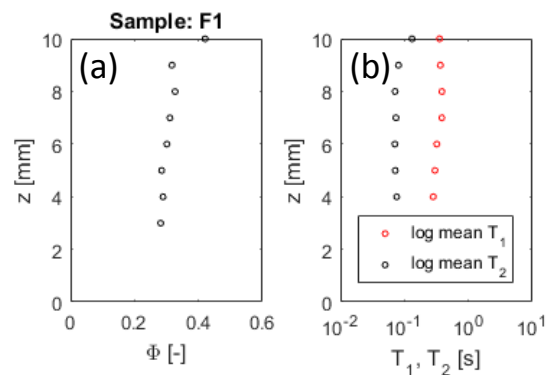
**Figure S21: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F4 after precipitation of ferrihydrite and subsequent homogenisation.**



**Figure S22: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F3 after precipitation of ferrihydrite and subsequent homogenisation.**

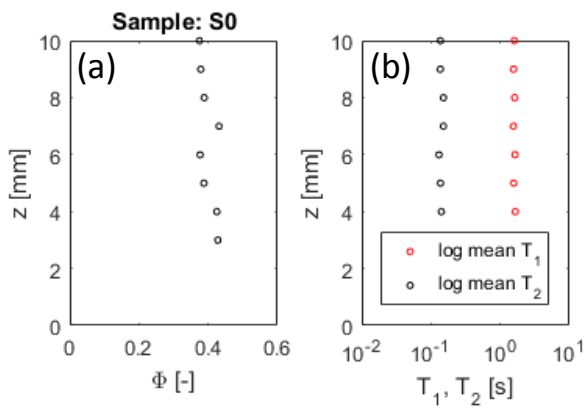


**Figure S23: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F2 after precipitation of ferrihydrite and subsequent homogenisation.**

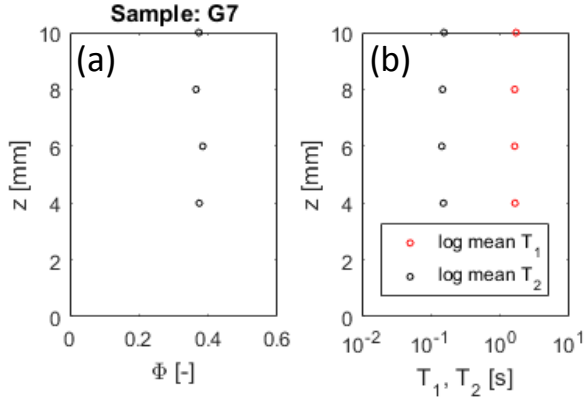


**Figure S24: Distributions of (a) NMR porosity and (b) mean relaxation times of sample F1 after precipitation of ferrihydrite and subsequent homogenisation.**

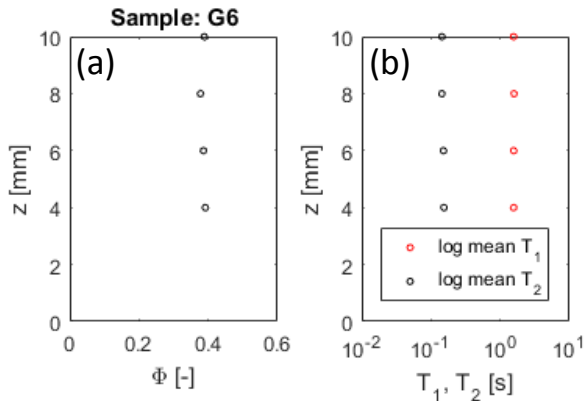




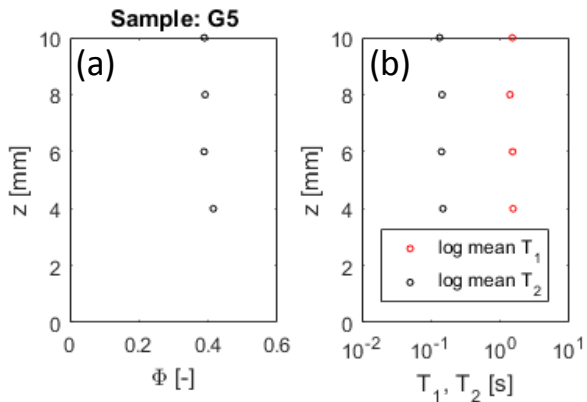
**Figure S25: Distributions of (a) NMR porosity and (b) mean relaxation times of initial sand sample S0.**



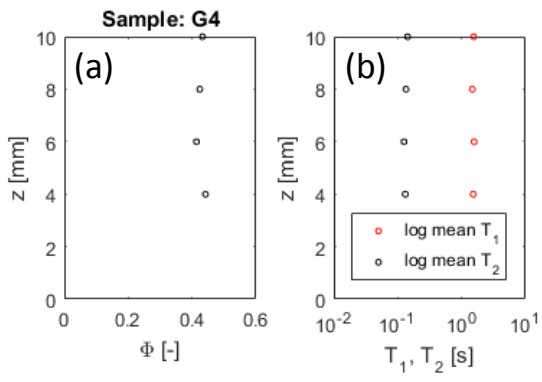
**Figure S26: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G7 after precipitation of goethite and subsequent homogenisation.**



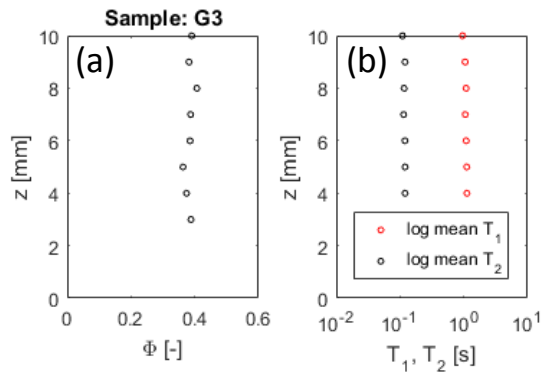
**Figure S27: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G6 after precipitation of goethite and subsequent homogenisation.**



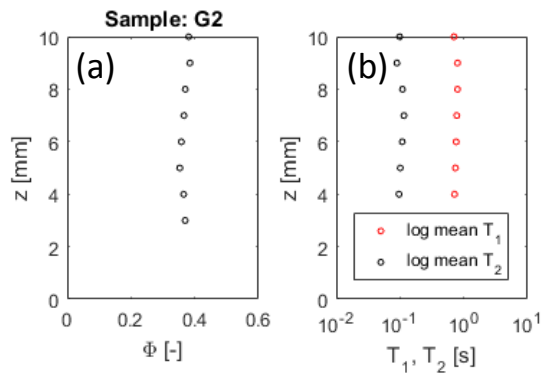
**Figure S28: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G5 after precipitation of goethite and subsequent homogenisation.**



**Figure S29: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G4 after precipitation of goethite and subsequent homogenisation.**



**Figure S30: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G3 after precipitation of goethite and subsequent homogenisation.**



**Figure S31: Distributions of (a) NMR porosity and (b) mean relaxation times of sample G2 after precipitation of goethite and subsequent homogenisation.**