



Figure S1: FT-IR spectra of the samples: **Fh-6-** synthesis of ferrihydrite-6-lines; **Fh-SW** synthesis of ferrihydrite in artificial seawater 4.0; **Fh-SW-NH₄SCN-1-** synthesis of ferrihydrite in artificial seawater 4.0 being that NH₄SCN plus Fe (NO₃)₃9H₂O together in the beaker; **Fh-SW-NH₄SCN-2-** synthesis of ferrihydrite in artificial seawater 4.0 being that NH₄SCN plus KOH together in the burette; **Fh-DW-NH₄SCN-1-** synthesis of ferrihydrite in distilled water being that NH₄SCN plus Fe(NO₃)₃9H₂O together in the beaker; **Fh-DW-NH₄SCN-2-** synthesis of ferrihydrite in distilled water being that NH₄SCN plus KOH together in the burette. **Goe-**goethite